Supplementary File of "Knowledge Transfer for Dynamic Multi-objective Optimization with Changing Number of Objectives"

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I. Problem Features of Used Benchmark Functions

Two suites of multi-objective optimization test problems DTLZ [1] and WFG [2] are modified to be DMOPs with a changing NObj. Four DMOPs with a changing NObj from DTLZ1-DTLZ4 are renamed as F1-F4, the same as in [3]. These two suites of benchmark functions are used to verify that the proposed algorithm is able to deal with problems with both simple and complex problem features. Detailed descriptions of problems features can be found in Section I of our Supplementary File.

- F1-F4 in the paper of DTAEA [3]: those four problems are modified from DTLZ1 to DTLZ4 [1] just by making the number of objectives change over time without modifying other problems features. Those problems have simple problem features including linear and concave PF shape, and simple fitness landscape like multi-modal and bias.
- WFG1-WFG9 [2]: these functions are made that their number of objective change over time and similarly without modifying other problems features. These benchmark has not been used in other papers related to DMOPs with a changing number of objectives. Those problems have more complex problem features including PF shape (linear, convex, concave, degenerated and mixed shape of convex and concave), as well as complicated fitness landscape (multimodality, bias, nonseparability, and deceptiveness).

Problem features of all of them are summarized in Table 1.

There are two different sequences of changes for these benchmark problems:

1) The NObj firstly increases from 2 to 7 one by one and then decreases from 7 to 2 one by one, which was used in [3];

$$m(t) = \begin{cases} 2, & t\text{=}0 \\ 3, & t\text{=}1 \\ m(t-1)+1, & t \in [2,5] \\ m(t-1)-1, & t \in [6,10] \end{cases} \tag{1}$$

2) The NObj firstly decreases from 7 to 2 one by one and then increases from 2 to 7 one by one.

$$m(t) = \begin{cases} 7, & t\text{=}0 \\ 6, & t\text{=}1 \\ m(t-1)-1, & t \in [2,5] \\ m(t-1)+1, & t \in [6,10] \end{cases} \tag{2}$$

t is the identifier of the change. Both sequences of changes have 10 environmental changes.

II. Description of Compared Algorithms

In our experimental studies, five algorithms are selected for the comparison, so as to verify the performance of our proposal against the-state-of-the-arts. Specific descriptions of them are given as follws:

- Static NSGA-II [4] the elitist nondominated sorting genetic algorithm; the whole old population is just copied to the next generation after changes in the number of objectives and then re-evaluated in the new environment.
- Static MOEA/D [5] a multi-objective evolutionary algorithm based on decomposition; the whole old population is just copied to the next generation after changes in the number of objectives and then re-evaluated in the new environment.
- DNSGA-II [6] the dynamic version of NSGA-II for DMOPs with changing shape and/or position of PS and/or and fixed number of objectives; after changes, it tackles the DMOPs with a changing number of objectives just like it deals with

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TABLE 1
PROBLEM FEATURES OF F1-F4 AND WFG1-WFG9.

Problems	PF shape	Fitness landscape
F1	linear	multimodality
F2	concave	—
F3	concave	multimodality
F4	concave	bias
WFG1	mixed	bias
WFG2	convex, disconnected	nonseparability
WFG3	linear, degenerate	nonseparability
WFG4	concave	multimodality
WFG5	concave	deceptiveness
WFG6	concave	nonseparability
WFG7	concave	bias
WFG8	concave	bias, nonseparability
WFG9	concave	bias, multimodality, deceptiveness, nonseparability

TABLE 2
THE NUMBER OF CASES WHEN KTDMOEA OBTAINS SIGNIFICANT BETTER QUALITY OF SOLUTIONS IN THE FIRST GENERATION RIGHT AFTER CHANGES THAN (+), EQUAL TO (=) AND WORSE THAN (-) CORRESPONDING ALGORITHMS MEASURED BY METRICS HV, GD AND MS IN THE NUMBER OF OBJECTIVES CHANGING SEQUENCE OF **FIRSTLY INCREASING FROM 2 TO 7 AND THEN DECREASING FROM 7 TO 2** BOTH ONE BY ONE.

+/-/=	HV	GD	MS
NSGA2	52/0/0	47/5/0	46/3/3
MOEAD	52/0/0	44/6/2	45/4/3
DNSGA2	51/0/1	50/2/0	40/12/0
MOEAD-KF	45/7/0	43/5/4	44/8/0
DTAEA	48/4/0	42/10/0	44/4/4
KTDMOEA	—	—	—

DMOPs where shape and/or position of PS and/or changes. More specifically, half of the population is randomly generated with others remained from the previous optimized population.

- MOEA/D-KF [7]: MOEA/D with Kalman Filter prediction for DMOPs with changing shape and/or position of PS and/or and fixed number of objectives; after changes, it tackles the DMOPs with a changing number of objectives just like it deals with DMOPs where shape and/or position of PS and/or changes.
- DTAEA [3]: dynamic two archive evolutionary algorithm, which is the most recently work designed for DMOPs with a changing number of objectives. The main idea is to simultaneously maintain two co-evolving populations, i.e. convergence archive (CA) and diversity archive (DA), which are designed to focus on population convergence and diversity respectively, so as to complement with each other in the optimization process through mating selection and population update. Besides, whenever environmental changes, CA and DA are reconstructed to preserve as much convergence and diversity as they can in the new environment. More specifically, when increasing the number of objectives, solutions in the old CA are all copied to the new CA. On the contrary, when decreasing the number of objectives, nondominated and dominated solutions of the old CA are all copied to the new CA and new DA, respectively.

III. EXPERIMENTAL RESULTS

This section presents experimental results of all compared algorithms on all test functions, which contains three parts. Tables 2-4 and 5-7 presents mean and standard deviation values of HV, GD and MS values of obtained solutions *at the first generation after changes* under 10 environmental changes in two changing number of objectives sequences, as shown in equations 5 and 6, respectively. Tables 8-10 and 11-13 presents mean and standard deviation values of HV, GD and MS values of obtained solutions *at the last generation after optimzation* under 10 environmental changes in two changing number of objectives sequences, as shown in equations 5 and 6, respectively.

Tables 4 and 5 show the number of cases when KTDMOEA significantly performs better than (+), equal to (=) and worse than (-) corresponding algorithms regarding three metrics of obtained solutions at the last generation after optimization in two changing sequences of Equations (1) and (2), respectively. Mean and standard deviation values of HV, GD and MS of obtained solutions at the last generation after optimization averaged across 10 environmental changes in two sequences of changes as Equation (1) and (2) are also presented in Tables 12-14 and Tables 15-17 of the supplementary file, respectively. Moreover, mean and standard deviation values of HV, GD and MS of obtained solutions at the last generation after optimization at each environmental change averaged across 31 independent runs in those two sequences of changes as Equations (1) and (2) are also recorded and presented in Tables 78-87, 88-97, 98-107 and Tables 108-117, 118-127, 128-137 of the supplementary file, respectively.

Tables 14-23, 24-33, 34-43 and Tables 44-53, 54-63, 64-73, presents the value of HV, GD and MS values of obtained solutions *at the first generation after changes* at each environmental change in two changing number of objectives sequences,

TABLE 3
THE NUMBER OF CASES WHEN KTDMOEA OBTAINS SIGNIFICANT BETTER QUALITY OF SOLUTIONS IN THE FIRST GENERATION RIGHT AFTER CHANGES THAN (+), EQUAL TO (=) AND WORSE THAN (-) CORRESPONDING ALGORITHMS MEASURED BY METRICS HV, GD AND MS IN THE NUMBER OF OBJECTIVES CHANGING SEQUENCE OF **FIRSTLY DECREASING FROM 7 TO 2 AND THEN INCREASING FROM 2 TO 7** BOTH ONE BY ONE.

+/-/=	HV	GD	MS
NSGA2	44/5/3	44/4/4	35/14/3
MOEAD	38/11/3	38/8/6	40/4/8
DNSGA2	45/4/3	46/1/5	34/12/6
MOEAD-KF	47/2/3	20/31/1	45/5/2
DTAEA	44/2/6	22/18/12	46/2/4
KTDMOEA	—	—	—

TABLE 4
THE NUMBER OF CASES WHEN KTDMOEA OBTAINS SIGNIFICANT BETTER QUALITY OF OPTIMIZED SOLUTIONS THAN (+), EQUAL TO (=) AND WORSE THAN (-) CORRESPONDING ALGORITHMS MEASURED BY METRICS HV, GD AND MS AT THE LAST GENERATION OF EACH CHANGE IN THE NUMBER OF OBJECTIVES CHANGING SEQUENCE OF **FIRSTLY INCREASING FROM 2 TO 7 AND THEN DECREASING FROM 7 TO 2** BOTH ONE BY ONE.

+/-/=	HV	GD	MS
NSGA2	43/4/5	49/2/1	29/21/2
MOEAD	46/5/1	41/10/1	35/15/2
DNSGA2	42/6/4	50/2/0	44/8/0
MOEAD-KF	48/4/0	44/5/3	48/4/0
DTAEA	33/18/1	38/9/5	26/21/5
KTDMOEA	—	—	—

as shown in equations 5 and 6, respectively. Tables 74-83, 84-93, 94-103 and Tables 104-113, 114-123, 124-133, presents the value of HV, GD and MS values of obtained solutions *at the last generation after optimzation* at each environmental change in two changing number of objectives sequences, as shown in equations 5 and 6, respectively.

Tables 134-135 gives the mean and standard deviation values of HV, GD and MS values of optimzied solutions by two pairs of comparison under different optimization algorithms in the last generation on all DMOPs with a changing number of objectives, when firstly increasing the number of objectives from 2 to 7 and then decreasing the number of objectives from 7 to 2, both one by one.

A. Initial Effectiveness of Knowledge Transfer

Tables 2 and 3 show the number of cases when KTDMOEA significantly performs better than (+), similar to (=) and worse than (-) corresponding algorithms regarding three metrics of obtained solutions at the first generation after changes in two changing sequences of Equations (10) and (11), respectively. Mean and standard deviation values of HV, GD and MS of obtained solutions in the first generation after changes averaged across 10 environmental changes in two sequences of changes as Equation (10) and (11) are also presented in Tables 6-8 and Tables 9-11 of the supplementary file, respectively. Moreover, mean and standard deviation values of HV, GD and MS of obtained solutions at the first generation after changes at each environmental changes averaged across 31 independent runs in those two sequences of changes as Equation (10) and (11) are also recorded and presented in Tables 18-27, 28-37, 38-47 and Tables 48-57, 58-67, 68-77, respectively.

1) NObj increasing from 2 to 7 and then decreasing from 7 to 2: Results of mean and standard deviation values for HV, GD and MS when the NObj increase from 2 to 7 and then decrease from 7 to 2 are presented in Tables 6, 7 and 8, respectively. It is clear from these tables that KTDMOEA performs the best on all test problems except for F4 and WFG9. As for F4, it can also be seen from these tables that KTDMOEA has significantly worse HV value due to its worse MS value, as KTDMOEA gets best GD value on F4. Regarding WFG9, it can be observed from those three tables that KTDMOEA gets worse HV value due to both worse MS and GD values.

2) NObj decreasing from 7 to 2 and then increasing from 2 to 7: Mean and standard deviation values for HV, GD and MS in the benchmark of decreasing the NObj from 7 to 2 and then increasing it from 2 to 7 are presented in Tables 9, 10 and 11, respectively. In addition, the comparison results of all algorithms at each NObj regarding HV, GD and MS are presented in Tables 44-53, Tables 54-63 and Tables 64-73, respectively.

From these tables, it is clear that KTDMOEA gets worse HV and MS values on F4 and WFG9, which is similar to the results from Section V-A1. In addition, KTDMOEA gets worse HV and GD values than MOEAD on F1 and F3 in all cases (including all environmental changes and all parameter settings) except for cases of increasing the NObj and large values of t at the same time. Additionally, it is clear from Tables 9-11 that KTDMOEA achieves worse mean HV and MS values on WFG3 than NSGA2 and DNSGA2. Despite this, it should be noted from Tables 44-53 and 64-73 that in the case of decreasing the NObj from 3 to 2, KTDMOEA performs best regarding HV and MS. In other cases, KTDMOEA has worse HV and MS than NSGA2 and DNSGA2.

3) Why Knowledge Transfer Sometimes Does Not Get Better Solution Quality after Changes?: It has been observed from Tables 6-11 in the Supplementary File that KTDMOEA performs worse than others on F4 and WFG9 in the above two changing

TABLE 5
THE NUMBER OF CASES WHEN KTDMOEA OBTAINS SIGNIFICANT BETTER QUALITY OF OPTIMIZED SOLUTIONS IN THE LAST GENERATION OF EACH CHANGE THAN (+), EQUAL TO (=) AND WORSE THAN (-) CORRESPONDING ALGORITHMS MEASURED BY METRICS HV, GD AND MS IN THE NUMBER OF OBJECTIVES CHANGING SEQUENCE OF **FIRSTLY DECREASING FROM 7 TO 2 AND THEN INCREASING FROM 2 TO 7** BOTH ONE BY ONE.

+/-/=	HV	GD	MS
NSGA2	44/6/2	45/3/4	28/22/2
MOEAD	38/10/4	40/9/3	33/15/4
DNSGA2	44/5/3	48/1/3	27/20/5
MOEAD-KF	45/5/2	20/31/1	40/8/4
DTAEA	35/7/10	33/6/13	28/8/16
KTDMOEA	—	—	—

sequences shown in Equations (1) and (2). The reasons behind this result are analyzed as follows. For F4 with an extremely strong bias in the fitness landscape, when using the PS expansion to transfer solutions, the expansion directions cannot be found as all generated solutions around one extreme point are still close to the boundary point due to the strong bias. As for WFG9 with very complex problem features in the fitness landscape including multimodality, nonseparability, deceptiveness and bias, it is difficult for the used genetic operators (SBX and PM) in KTDMOEA to reach the global optima, while the DE operator in MOEAD-KF is able to do that. Therefore, KTDMOEA does not get better results than MOEAD-KF.

Note that when the NObj decreases from 7 to 2 and then increases from 2 to 7, KTDMOEA performs worse on WFG3 for all cases. The reason might be that when increasing the NObj, transferred solutions via PS expansion cannot increase population diversity, since for WFG3 with degenerated PF, the expanded solutions are still in the degenerated PF, without increase in the diversity. In addition, KTDMOEA performs worse on F1 and F3 at all cases except for large value of τ_t and increasing the NObj when the NObj decreasing from 7 to 2 and then increasing from 2 to 7. The reason might be that when τ_t is large, KTDMOEA ran for enough generations to reach convergence before the increase in the NObj, which is beneficial for the PS expansion.

B. How Does Knowledge Transfer Help Optimization?

Tables 4 and 5 in the Supplementary file show the number of cases when KTDMOEA significantly performs better than (+), equal to (=) and worse than (-) corresponding algorithms regarding three metrics of obtained solutions at the last generation after optimization in two changing sequences of Equations (10) and (11), respectively. Mean and standard deviation values of HV, GD and MS of obtained solutions at the last generation after optimization averaged across 10 environmental changes in two sequences of changes as Equation (10) and (11) are also presented in Tables 12-14 and Tables 15-17, respectively. Moreover, mean and standard deviation values of HV, GD and MS of obtained solutions at the last generation after optimization at each environmental change averaged across 31 independent runs in those two sequences of changes as Equations (10) and (11) are also recorded and presented in Tables 78-87, 88-97, 98-107 and Tables 108-117, 118-127, 128-137 of the supplementary file, respectively.

1) NObj increasing from 2 to 7 and then decreasing from 7 to 2: It can be seen from Table 12 of the Supplementary file that KTDMOEA results in a significantly worse mean HV value than DTAEA on F4. And this is because KTDMOEA has worse HV and MS than DTAEA when increasing NObj from 2 to 7, which can be found in Tables 78-87 and Tables 98-107. In addition, it can be seen from Tables 12-14 that KTDMOEA gets significantly worse mean values of HV and MS than NSGA2, DNSGA2 and DTAEA on WFG3. In addition, it is also clear from Tables 78-87, Tables 88-97 and Tables 98-107 that when increasing the NObj from 2 to 7, KTDMOEA has significantly worse HV and MS values than DNSGA2 and DTAEA. Moreover, it is clear from Tables 78-87 and Tables 88-97 of the supplementary file that, in the case of increasing the NObj from 2 to 7, KTDMOEA gets worse HV and GD values than MOEAD on F1 and F3 when the frequency of change is low (i.e. τ_t is large).

As for the comparison results of the proposed KTDMOEA against the other approaches on WFG1, WFG5, WFG6 and WFG9, it is clear from Table 12 of the Supplementary file that KTDMOEA performs significantly worse than DTAEA when τ_t is large. In addition, at the last generation of all or half NObj, KTDMOEA performs significantly worse than DTAEA when τ_t is large, which can be found from Tables 78-87.

2) NObj decreasing from 7 to 2 and then increasing from 2 to 7: Similar to the other changing sequence, KTDMOEA gets worse HV and MS values on F4 than MOEAD, MOEAD-KF and DTAEA; KTDMOEA gets significantly worse mean values of HV and MS than NSGA2, DNSGA2 and DTAEA on WFG3, which can be observed from Tables 15 and 17 of the Supplementary file. In addition, it is also clear from Tables 108-117, 118-127 and 128-137 of the Supplementary file that, in the case of increasing the NObj from 2 to 7, KTDMOEA gets worse HV and GD values than MOEA/D.

It should be noted that the performance of KTDMOEA against other algorithms on WFG1, WFG5 and WFG6 in the changing sequence of firstly decreasing from 7 to 2 and then increasing from 2 to 7 is different from that of the other changing sequence. Specifically, in this number of objective changing sequence, KTDMOEA significantly performs best regarding mean metric values and the metric value at almost each NObj, which can be found from Tables 15-17 and Tables 108-137 of the Supplementary file.

3) Why Doesn't Knowledge Transfer Help Optimization?: It has been presented in Sections III-B1 and III-B2 that KTDMOEA gets worse optimized solutions at the last generation after optimization on some problems. This section aims to analyze the reasons why it performs worse. The reason why the proposed KTDMOEA performs worse on F4 and WFG3 is that the diversity maintenance strategy in KTDMOEA is unable to maintain diversity when the transferred solutions themselves had poor diversity right after the change, as analyzed in Section III-A. The reason behind this is that diversity maintenance strategy in KTDMOEA can only increase the even distribution of solutions via the evenly generated weight vectors, unable to spread the solutions to cover other areas of the PF. It can be concluded that the optimization algorithm in KTDMOEA cannot increase the spread of population if the knowledge transfer cannot provide enough diversity.

The reason why KTDMOEA performs worse than MOEA/D on F1 and F3 when τ_t is large can be analyzed as follows. It has been found that when τ_t is large and the number of objective is larger than 3 KTDMOEA probably produces dominance resistance solutions (DRS) at several runs, while MOEAD has enough generation to make the population perform well through draw the final plot of found solutions at some objectives. The reason why KTDMOEA probably generates DRSs is that the environmental selection in KTDMOEA is based on nondominated sorting and the diversity maintenance in KTDMOEA cannot delete DRSs, while the diversity maintenance in MOEAD is able to. The reason why KTDMOEA performs worse on F1 and F3 with multimodality rather than other problem with multimodality like WFG4 is that decision variables of F1 and F3 are correlated, which results in lots of DRSs in the fitness landscape. Therefore, KTDMOEA cannot get better results on problems with multimodality and variable correlation when the frequency of change is low (i.e. τ_t is large).

It should be noted that KTDMOEA performs worse on WFG1, WFG5, WFG6 and WFG9 when τ_t is large only in the changing sequence as Equation (1). The reason is that when τ_t is large, the proposed KTDMOEA is unable to provide enough diversity such that the population can reach the global area of those problems, as they have a vary narrow valley area (WFG1, WFG5 and WFG9) and several nonseparable variables (WFG6) in the fitness landscape. However, DTAEA with an extra specialized archive for diversity maintenance can achieve this aim when τ_t is large. The diagram of fitness landscape for WFG1, WFG5 and WFG9 with two variables (x_1 and x_2) are drawn in Figures 1, 2 and 3 of the Supplementary file, respectively. It is clear that each objective of those problems have a vary narrow valley area, which may be difficult for the proposed KTDMOEA to each when τ_t is large. The reason why KTDMOEA does not perform worse on WFG1, WFG5, WFG6 and WFG9 in the changing sequence as Equation (2) is that population diversity may be increased inherently when decreasing the NObj, as analyzed in [3]. The introduced diversity together with the diversity introduced via PS expansion/contraction makes KTDMOEA able to perform better than other algorithms than DTAEA on those four problems.

$$m(t) = \begin{cases} 3, & t\text{=}1 \\ m(t-1)+2, & t \in [2,3] \\ m(t-1)-2, & t \in [4,5] \\ m(t-1)-1, & t\text{=}6, \end{cases} \tag{3}$$

where t is the identifier of the change. In this sequence of change, NObj firstly increases from 2 to 3 one by one. Then there are four changes with the first two changes increasing the NObj two by two and then two changes decreasing the NObj two by two. Lastly, the NObj decreases from 3 to 2 one by one.

$$m(t) = \begin{cases} m(t-1)-2, & t \in [1,2] \\ m(t-1)-1, & t\text{=}3 \\ m(t-1)+1, & t\text{=}4 \\ m(t-1)+2, & t \in [5,6], \end{cases} \tag{4}$$

where t is the identifier of the change. In this sequence of change, the initial NObj is set as 7. Then, there are two changes where the NObj decreases by two. Later on, the NObj decreases from 3 to 2 and then increases from 2 to 3, both one by one. In the last two changes, the NObj increases by two at each change.

TABLE 6
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR SOLUTIONS OBTAINED BY ALL COMPARED ALGORITHMS IN THE FIRST GENERATION RIGHT AFTER CHANGES ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	8.90E-01(3.40E-05)†	8.66E-01(3.20E-04)†	8.84E-01(1.15E-04)†	2.17E-02(7.99E-04)†	9.07E-01(4.51E-04)†	9.96E-01(7.51E-11)
	25	6.40E-01(1.51E-03)†	8.81E-01(9.54E-05)†	6.09E-01(7.70E-04)†	4.70E-03(1.34E-04)†	8.67E-01(2.83E-03)†	9.96E-01(1.43E-09)
	50	5.48E-01(2.65E-03)†	8.86E-01(3.85E-05)†	4.99E-01(2.37E-04)†	3.72E-03(4.27E-05)†	8.52E-01(2.36E-03)†	9.96E-01(1.40E-10)
	200	4.25E-01(5.63E-03)†	9.12E-01(3.52E-05)†	3.29E-01(1.33E-03)†	1.25E-02(2.53E-04)†	8.62E-01(1.15E-03)†	9.96E-01(1.31E-10)
F2	5	8.54E-01(6.18E-05)†	8.96E-01(1.55E-05)†	8.85E-01(1.19E-05)†	4.18E-01(6.51E-03)†	9.17E-01(2.41E-05)†	9.56E-01(1.63E-06)
	25	8.98E-01(1.04E-05)†	9.17E-01(2.87E-06)†	8.79E-01(2.81E-05)†	2.96E-01(4.56E-04)†	9.26E-01(6.18E-06)†	9.55E-01(3.23E-07)
	50	8.89E-01(4.39E-05)†	9.20E-01(8.29E-07)†	8.73E-01(1.21E-05)†	3.05E-01(7.32E-04)†	9.28E-01(6.60E-06)†	9.56E-01(4.57E-07)
	200	8.80E-01(8.10E-05)†	9.23E-01(5.57E-08)†	8.71E-01(1.28E-05)†	4.05E-01(1.36E-03)†	9.29E-01(3.78E-06)†	9.56E-01(2.94E-07)
F3	5	7.33E-01(1.87E-04)†	7.20E-01(3.55E-04)†	6.87E-01(2.83E-04)†	4.18E-01(6.51E-03)†	7.69E-01(6.70E-04)†	9.57E-01(1.88E-07)
	25	5.69E-01(4.92E-04)†	7.28E-01(3.84E-04)†	5.36E-01(4.44E-04)†	0.00E+00(0.00E+00)†	7.34E-01(4.03E-03)†	9.54E-01(1.64E-06)
	50	4.79E-01(7.04E-04)†	7.36E-01(4.48E-04)†	4.55E-01(3.63E-04)†	0.00E+00(0.00E+00)†	7.04E-01(4.62E-03)†	9.57E-01(1.78E-06)
	200	3.55E-01(1.25E-03)†	7.94E-01(2.35E-04)†	2.97E-01(1.55E-03)†	0.00E+00(0.00E+00)†	6.60E-01(4.27E-03)†	9.57E-01(3.18E-06)
F4	5	8.41E-01(1.23E-04)†	8.45E-01(2.30E-04)†	8.60E-01(1.54E-04)†	8.57E-01(1.01E-04)†	9.14E-01(6.27E-05)‡	8.68E-01(1.52E-03)
	25	8.29E-01(3.06E-04)†	8.99E-01(1.06E-04)‡	8.22E-01(1.14E-04)†	9.06E-01(1.50E-05)‡	9.28E-01(9.70E-06)‡	8.81E-01(4.75E-04)
	50	7.76E-01(2.64E-04)†	9.12E-01(4.23E-05)‡	8.22E-01(6.96E-05)†	9.11E-01(3.20E-05)‡	9.29E-01(1.18E-05)‡	8.78E-01(8.21E-04)
	200	7.80E-01(4.40E-05)†	9.23E-01(3.27E-07)‡	8.16E-01(8.54E-05)†	9.21E-01(2.05E-05)‡	9.27E-01(5.15E-06)‡	8.81E-01(1.28E-03)
WFG1	5	9.14E-01(3.94E-05)†	8.40E-01(5.88E-05)†	8.83E-01(8.36E-05)†	7.52E-01(9.59E-04)†	9.09E-01(3.66E-05)†	9.66E-01(2.39E-06)
	25	9.27E-01(1.46E-05)†	8.62E-01(5.10E-05)†	9.11E-01(3.04E-05)†	7.92E-01(5.23E-04)†	9.27E-01(1.88E-05)†	9.67E-01(1.54E-06)
	50	9.28E-01(4.78E-06)†	8.74E-01(3.56E-05)†	9.15E-01(2.56E-05)†	7.90E-01(6.23E-04)†	9.27E-01(8.86E-06)†	9.67E-01(1.34E-06)
	200	9.26E-01(2.70E-06)†	8.92E-01(1.15E-05)†	9.18E-01(6.35E-06)†	7.65E-01(1.13E-03)†	9.26E-01(2.34E-06)†	9.67E-01(5.27E-07)
WFG2	5	8.87E-01(2.44E-04)†	8.37E-01(2.05E-04)†	8.89E-01(1.50E-04)†	2.39E-01(3.31E-07)†	9.11E-01(2.23E-04)†	9.61E-01(2.40E-06)
	25	9.04E-01(1.41E-04)†	8.65E-01(1.84E-04)†	8.91E-01(1.50E-04)†	2.39E-01(2.02E-07)†	9.21E-01(1.76E-04)†	9.61E-01(3.72E-06)
	50	8.98E-01(1.99E-04)†	8.73E-01(1.32E-04)†	8.84E-01(1.68E-04)†	2.39E-01(9.53E-08)†	9.17E-01(1.51E-04)†	9.61E-01(2.67E-06)
	200	8.85E-01(1.56E-04)†	8.83E-01(1.48E-04)†	8.74E-01(2.42E-04)†	2.39E-01(5.31E-08)†	9.10E-01(3.15E-04)†	9.60E-01(1.10E-05)
WFG3	5	6.71E-01(1.10E-04)†	6.15E-01(9.37E-05)†	6.48E-01(5.07E-05)†	2.50E-01(3.15E-07)†	6.76E-01(1.57E-04)†	6.98E-01(6.26E-06)
	25	6.57E-01(1.30E-04)†	6.42E-01(6.04E-05)†	6.49E-01(4.06E-05)†	2.51E-01(4.83E-07)†	6.64E-01(1.14E-04)†	6.97E-01(1.28E-05)
	50	6.56E-01(5.06E-05)†	6.45E-01(5.86E-05)†	6.48E-01(4.18E-05)†	2.52E-01(3.02E-07)†	6.58E-01(1.29E-04)†	6.99E-01(1.19E-05)
	200	6.53E-01(6.29E-05)†	6.47E-01(6.73E-05)†	6.43E-01(4.76E-05)†	2.52E-01(2.61E-07)†	6.50E-01(1.14E-04)†	6.99E-01(7.52E-06)
WFG4	5	6.01E-01(2.65E-04)†	5.70E-01(1.33E-04)†	6.08E-01(5.39E-05)†	2.75E-01(1.37E-04)†	6.93E-01(3.09E-05)†	8.07E-01(2.36E-06)
	25	6.76E-01(1.70E-05)†	6.15E-01(7.13E-05)†	6.36E-01(3.20E-05)†	3.03E-01(3.30E-05)†	7.52E-01(6.12E-07)†	8.07E-01(6.30E-06)
	50	6.78E-01(2.65E-05)†	6.35E-01(5.59E-05)†	6.39E-01(3.05E-05)†	3.00E-01(1.17E-05)†	7.54E-01(2.74E-07)†	8.16E-01(6.57E-07)
	200	6.85E-01(2.38E-05)†	6.71E-01(2.18E-05)†	6.46E-01(1.59E-05)†	3.00E-01(3.60E-06)†	7.53E-01(3.63E-07)†	8.17E-01(4.61E-07)
WFG5	5	5.37E-01(2.49E-04)†	5.67E-01(6.48E-05)†	5.98E-01(5.12E-05)†	5.03E-01(1.42E-05)†	6.70E-01(1.40E-05)†	7.47E-01(1.06E-05)
	25	6.36E-01(1.76E-05)†	6.11E-01(2.89E-05)†	6.17E-01(1.92E-05)†	5.15E-01(4.43E-06)†	7.05E-01(2.78E-06)†	7.61E-01(1.07E-05)
	50	6.42E-01(8.92E-06)†	6.21E-01(3.16E-05)†	6.22E-01(1.55E-05)†	5.13E-01(6.01E-06)†	7.11E-01(1.88E-06)†	7.70E-01(4.35E-06)
	200	6.46E-01(9.84E-06)†	6.45E-01(7.12E-06)†	6.28E-01(1.56E-05)†	5.15E-01(3.70E-06)†	7.17E-01(1.55E-06)†	7.73E-01(1.33E-06)
WFG6	5	4.30E-01(1.42E-03)†	4.34E-01(7.61E-04)†	5.00E-01(1.22E-03)†	1.41E-01(1.85E-06)†	5.13E-01(2.43E-03)†	7.31E-01(6.35E-04)
	25	5.55E-01(9.80E-04)†	5.21E-01(7.29E-04)†	5.52E-01(9.44E-04)†	1.43E-01(7.40E-06)†	5.53E-01(2.84E-03)†	7.41E-01(4.51E-04)
	50	5.77E-01(1.27E-03)†	5.43E-01(8.76E-04)†	5.55E-01(1.23E-03)†	1.43E-01(4.11E-06)†	5.35E-01(4.33E-03)†	7.42E-01(6.05E-04)
	200	6.01E-01(1.13E-03)†	5.80E-01(1.04E-03)†	5.66E-01(9.38E-04)†	1.44E-01(4.32E-06)†	5.61E-01(3.06E-03)†	7.52E-01(4.17E-04)
WFG7	5	6.65E-01(3.91E-05)†	4.85E-01(2.60E-04)†	6.17E-01(5.56E-05)†	5.06E-01(1.35E-04)†	7.07E-01(3.21E-05)†	8.15E-01(1.28E-06)
	25	6.73E-01(1.98E-05)†	5.87E-01(4.17E-05)†	6.28E-01(2.25E-05)†	6.13E-01(4.76E-05)†	7.37E-01(1.70E-06)†	8.18E-01(1.10E-06)
	50	6.75E-01(1.55E-05)†	6.16E-01(2.09E-05)†	6.30E-01(1.60E-05)†	6.34E-01(1.70E-05)†	7.36E-01(2.01E-06)†	8.21E-01(4.43E-07)
	200	6.77E-01(1.20E-05)†	6.64E-01(2.49E-05)†	6.32E-01(8.83E-06)†	6.55E-01(2.50E-05)†	7.34E-01(7.61E-07)†	8.22E-01(5.11E-07)
WFG8	5	6.66E-01(5.10E-05)†	4.76E-01(3.46E-04)†	6.18E-01(4.49E-05)†	5.04E-01(1.43E-04)†	7.09E-01(6.02E-05)†	8.16E-01(2.29E-06)
	25	6.74E-01(1.75E-05)†	5.91E-01(5.21E-05)†	6.27E-01(2.46E-05)†	6.12E-01(4.17E-05)†	7.37E-01(2.15E-06)†	8.19E-01(8.72E-07)
	50	6.74E-01(1.11E-05)†	6.17E-01(4.14E-05)†	6.29E-01(2.09E-05)†	6.30E-01(2.72E-05)†	7.36E-01(2.01E-06)†	8.21E-01(4.46E-07)
	200	6.76E-01(1.41E-05)†	6.63E-01(1.71E-05)†	6.32E-01(1.03E-05)†	6.55E-01(2.11E-05)†	7.35E-01(1.77E-06)†	8.22E-01(3.04E-07)
WFG9	5	3.12E-01(2.74E-03)†	3.19E-01(6.21E-04)†	3.95E-01(2.36E-04)†	5.27E-01(1.40E-02)‡	3.98E-01(9.90E-04)†	4.29E-01(3.59E-04)
	25	3.75E-01(1.05E-03)†	3.62E-01(4.39E-04)†	4.39E-01(1.40E-03)	6.17E-01(1.12E-02)‡	4.12E-01(6.72E-04)†	4.37E-01(7.81E-04)
	50	3.88E-01(9.89E-04)†	3.74E-01(4.32E-04)†	4.83E-01(4.01E-04)†	5.87E-01(1.33E-02)‡	4.17E-01(8.27E-04)†	4.33E-01(6.54E-04)
	200	4.23E-01(2.99E-03)†	4.14E-01(1.65E-03)†	5.04E-01(7.67E-04)†	6.07E-01(1.16E-02)‡	4.14E-01(1.46E-03)†	4.44E-01(2.87E-04)
+-=		52/0/0	52/0/0	51/0/1	45/7/0	48/4/0	—

TABLE 7
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR SOLUTIONS OBTAINED BY ALL COMPARED ALGORITHMS IN THE FIRST GENERATION RIGHT AFTER CHANGES ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.34E+01(2.61E+00)†	1.83E+01(1.28E+00)†	6.12E+01(5.75E+00)†	3.49E+02(1.63E+03)†	1.00E+01(2.64E+00)†	1.22E-02(1.60E-07)
	25	3.91E+01(3.75E+01)†	1.71E+01(1.28E-01)†	8.41E+01(2.53E+01)†	6.15E+02(1.57E+03)†	1.77E+01(2.29E+00)†	1.66E-01(6.98E-02)
	50	8.32E+01(9.32E+01)†	1.67E+01(1.13E-01)†	1.20E+02(5.15E+01)†	6.78E+02(1.56E+03)†	1.83E+01(1.77E+00)†	6.07E-02(5.33E-03)
	200	1.24E+02(1.37E+02)†	1.48E+01(1.49E+01)†	1.47E+02(1.48E+02)†	7.45E+02(6.94E+02)†	1.79E+01(1.76E+01)†	2.05E-01(1.49E-02)
F2	5	8.47E-02(1.04E-05)†	1.88E-01(5.09E-05)†	2.61E-01(1.30E-04)†	2.95E+00(1.06E-01)†	9.16E-02(3.50E-05)†	4.32E-02(5.85E-07)
	25	2.48E-01(2.56E-04)†	1.47E-01(5.34E-06)†	3.65E-01(2.67E-04)†	3.51E+00(5.61E-02)†	6.69E-02(4.81E-06)†	4.11E-02(6.33E-07)
	50	3.25E-01(1.92E-04)†	1.33E-01(2.41E-06)†	3.92E-01(6.37E-05)†	3.22E+00(8.82E-02)†	6.61E-02(8.97E-06)†	4.14E-02(4.82E-07)
	200	3.83E-01(4.01E-01)†	1.08E-01(1.08E-01)†	4.06E-01(4.03E-01)†	3.11E+00(3.23E+00)†	6.89E-02(6.82E-02)†	4.23E-02(4.26E-02)
F3	5	3.10E+01(6.38E+00)†	5.31E+01(8.03E+00)†	1.67E+02(1.07E+01)†	4.66E+02(2.24E+03)†	2.45E+01(7.75E+00)†	1.76E-01(9.17E-02)
	25	6.78E+01(8.41E+01)†	4.84E+01(1.88E+00)†	2.02E+02(1.58E+02)†	5.77E+02(9.26E+02)†	4.32E+01(1.79E+01)†	5.71E-01(4.60E-01)
	50	1.50E+02(3.39E+02)†	4.43E+01(1.33E+00)†	2.67E+02(1.11E+02)†	5.65E+02(8.04E+02)†	4.34E+01(9.69E+00)†	5.23E-01(5.80E-01)
	200	2.30E+02(2.42E+02)†	3.62E+01(3.75E+01)†	3.53E+02(3.66E+02)†	4.63E+02(5.93E+02)†	4.87E+01(4.21E+01)†	4.11E-02(4.19E-02)
F4	5	9.44E-02(1.03E-04)†	8.65E-02(2.42E-04)†	3.22E-01(2.98E-04)†	4.46E-01(1.96E-03)†	1.02E-01(1.72E-04)†	2.40E-02(2.36E-04)
	25	4.00E-01(7.24E-04)†	1.36E-01(4.86E-05)†	4.99E-01(1.48E-04)†	4.05E-01(3.03E-04)†	8.44E-02(3.69E-05)†	2.00E-02(2.66E-06)
	50	5.11E-01(3.54E-04)†	1.43E-01(1.55E-05)†	5.22E-01(8.30E-05)†	4.24E-01(2.67E-04)†	8.56E-02(2.85E-05)†	1.98E-02(3.96E-06)
	200	5.51E-01(5.38E-01)†	1.28E-01(1.29E-01)†	5.43E-01(5.36E-01)†	4.24E-01(4.24E-01)†	9.04E-02(8.05E-02)†	2.16E-02(1.77E-02)
WFG1	5	2.31E-01(1.66E-04)†	3.91E-01(1.32E-04)†	4.85E-01(1.45E-04)†	1.46E+00(1.02E-02)†	2.18E-01(1.52E-04)†	2.02E-01(5.20E-05)
	25	3.01E-01(5.42E-05)†	3.67E-01(8.25E-05)†	5.56E-01(4.05E-05)†	1.72E+00(2.61E-03)†	2.56E-01(2.72E-05)†	1.98E-01(2.38E-05)
	50	3.19E-01(3.17E-05)†	3.28E-01(4.13E-05)†	5.65E-01(2.12E-05)†	1.76E+00(1.46E-03)†	2.53E-01(2.41E-05)†	1.97E-01(2.29E-05)
	200	3.24E-01(3.25E-01)†	2.81E-01(2.78E-01)†	5.69E-01(5.64E-01)†	1.83E+00(1.82E+00)†	2.30E-01(2.29E-01)†	1.95E-01(2.00E-01)
WFG2	5	6.87E-01(7.21E-04)‡	5.33E-01(1.35E-03)‡	9.02E-01(3.75E-04)†	7.11E-01(1.22E-05)‡	5.92E-01(9.74E-04)‡	7.35E-01(3.28E-04)
	25	8.64E-01(1.05E-03)†	4.76E-01(7.11E-04)‡	1.01E+00(9.68E-04)†	7.09E-01(1.45E-05)	5.40E-01(5.92E-04)‡	7.09E-01(2.39E-04)
	50	9.24E-01(1.26E-03)†	4.75E-01(7.63E-04)‡	1.05E+00(1.05E-03)†	7.06E-01(1.83E-05)†	5.27E-01(5.66E-04)‡	6.95E-01(1.70E-04)
	200	9.76E-01(9.75E-01)†	4.82E-01(4.62E-01)‡	1.10E+00(1.11E+00)†	7.05E-01(6.90E-01)†	5.50E-01(4.87E-01)‡	6.91E-01(7.11E-01)
WFG3	5	9.71E-02(1.96E-03)‡	1.59E+00(1.67E-02)†	1.30E+00(4.15E-03)†	7.39E-01(5.82E-05)†	1.15E+00(5.21E-03)†	6.31E-01(2.07E-02)
	25	8.45E-01(2.17E-02)‡	2.00E+00(1.49E-03)†	1.58E+00(2.58E-03)†	7.45E-01(5.74E-05)‡	1.52E+00(2.69E-03)†	1.28E+00(1.50E-02)
	50	1.28E+00(1.98E-02)‡	2.00E+00(3.32E-03)†	1.63E+00(1.21E-03)†	7.46E-01(5.18E-05)‡	1.60E+00(1.64E-03)†	1.36E+00(7.99E-03)
	200	1.64E+00(1.64E+00)†	1.99E+00(1.98E+00)†	1.68E+00(1.66E+00)†	7.40E-01(7.36E-01)‡	1.57E+00(1.63E+00)†	1.57E+00(1.43E+00)
WFG4	5	3.98E-01(1.05E-04)†	4.91E-01(3.81E-04)†	5.75E-01(6.48E-05)†	8.06E-01(7.74E-04)†	3.56E-01(9.81E-05)†	2.94E-01(5.78E-05)
	25	4.77E-01(5.85E-05)†	3.73E-01(2.06E-05)†	5.76E-01(8.39E-05)†	7.65E-01(2.61E-04)†	2.44E-01(1.01E-05)‡	2.69E-01(2.25E-05)
	50	4.94E-01(5.02E-05)†	3.52E-01(1.13E-05)†	5.73E-01(6.42E-05)†	7.64E-01(3.28E-04)†	2.31E-01(4.58E-06)‡	2.64E-01(1.52E-05)
	200	5.06E-01(5.00E-01)†	3.18E-01(3.18E-01)†	5.55E-01(5.58E-01)†	7.65E-01(7.62E-01)†	2.11E-01(2.10E-01)‡	2.52E-01(2.56E-01)
WFG5	5	4.20E-01(6.60E-05)†	5.44E-01(2.16E-04)†	6.87E-01(7.97E-05)†	1.37E+00(3.08E-04)†	4.01E-01(4.23E-05)†	3.47E-01(3.32E-05)
	25	4.83E-01(1.06E-04)†	4.02E-01(3.04E-05)†	6.50E-01(5.66E-05)†	1.32E+00(1.43E-04)†	3.06E-01(1.45E-05)‡	3.21E-01(1.79E-05)
	50	4.98E-01(7.16E-05)†	3.70E-01(2.13E-05)†	6.38E-01(4.25E-05)†	1.31E+00(1.29E-04)†	2.90E-01(1.07E-05)‡	3.16E-01(4.31E-05)
	200	5.03E-01(5.04E-01)†	3.31E-01(3.33E-01)†	6.32E-01(6.16E-01)†	1.29E+00(1.29E+00)†	2.79E-01(2.78E-01)‡	3.16E-01(3.23E-01)
WFG6	5	6.54E-01(9.82E-03)†	7.28E-01(6.17E-03)†	8.93E-01(5.99E-03)†	1.25E+00(3.27E-04)†	7.65E-01(1.44E-02)†	3.93E-01(1.18E-03)
	25	6.78E-01(5.71E-03)†	5.37E-01(3.18E-03)†	8.29E-01(5.21E-03)†	1.25E+00(1.42E-04)†	7.08E-01(1.79E-02)†	3.73E-01(1.16E-03)
	50	6.81E-01(6.80E-03)†	5.11E-01(3.48E-03)†	8.35E-01(6.54E-03)†	1.25E+00(8.26E-05)†	7.41E-01(2.73E-02)†	3.88E-01(2.78E-03)
	200	5.63E-01(5.70E-01)†	4.71E-01(4.88E-01)†	7.57E-01(8.19E-01)†	1.24E+00(1.26E+00)†	7.76E-01(7.55E-01)†	3.89E-01(4.35E-01)
WFG7	5	4.94E-01(1.29E-04)†	6.76E-01(1.62E-03)†	7.14E-01(1.10E-04)†	8.46E-01(1.11E-03)†	3.64E-01(5.51E-05)†	2.70E-01(3.59E-05)
	25	5.46E-01(6.54E-05)†	4.50E-01(5.87E-05)†	7.33E-01(3.82E-05)†	8.02E-01(6.89E-04)†	2.77E-01(1.08E-05)†	2.50E-01(2.66E-05)
	50	5.49E-01(5.20E-05)†	4.26E-01(3.27E-05)†	7.23E-01(3.42E-05)†	8.31E-01(4.00E-04)†	2.67E-01(8.92E-06)†	2.43E-01(2.75E-05)
	200	5.40E-01(5.42E-01)†	3.74E-01(3.85E-01)†	7.14E-01(7.17E-01)†	6.32E-01(7.35E-01)†	2.56E-01(2.53E-01)†	2.12E-01(2.17E-01)
WFG8	5	4.95E-01(1.35E-04)†	6.98E-01(2.34E-03)†	7.15E-01(1.01E-04)†	8.50E-01(7.99E-04)†	3.62E-01(1.25E-04)†	2.68E-01(7.45E-05)
	25	5.45E-01(5.08E-05)†	4.49E-01(6.93E-05)†	7.31E-01(5.69E-05)†	7.97E-01(9.59E-04)†	2.76E-01(8.31E-06)†	2.50E-01(2.90E-05)
	50	5.49E-01(3.92E-05)†	4.27E-01(4.31E-05)†	7.23E-01(3.32E-05)†	8.23E-01(5.59E-04)†	2.67E-01(5.87E-06)†	2.43E-01(3.27E-05)
	200	5.50E-01(5.32E-01)†	3.86E-01(3.78E-01)†	7.13E-01(7.12E-01)†	6.55E-01(6.54E-01)†	2.56E-01(2.49E-01)†	2.20E-01(2.09E-01)
WFG9	5	9.95E-01(1.02E-02)†	8.93E-01(3.76E-03)‡	1.14E+00(2.11E-03)†	9.00E-01(2.83E-03)‡	1.06E+00(6.13E-03)†	9.43E-01(3.78E-03)
	25	1.10E+00(5.35E-03)†	9.07E-01(2.08E-03)	1.08E+00(5.90E-03)‡	8.83E-01(1.85E-03)	1.04E+00(5.04E-03)†	9.16E-01(4.91E-03)
	50	1.11E+00(5.48E-03)‡	8.99E-01(2.75E-03)	9.96E-01(2.19E-03)‡	8.87E-01(2.70E-03)	1.03E+00(5.11E-03)†	9.13E-01(3.50E-03)
	200	1.20E+00(9.24E-01)†	9.06E-01(9.28E-01)‡	1.03E+00(8.93E-01)†	9.13E-01(9.22E-01)	1.17E+00(1.08E+00)†	1.00E+00(8.55E-01)
+-=		47/5/0	44/6/2	50/2/0	43/5/4	42/10/0	—

TABLE 8
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR SOLUTIONS OBTAINED BY ALL COMPARED ALGORITHMS IN THE FIRST GENERATION RIGHT AFTER CHANGES ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	7.97E-01(4.74E-05)†	8.21E-01(7.68E-05)†	9.92E-01(3.67E-05)†	9.34E-01(5.32E-04)†	8.22E-01(3.97E-04)†	1.00E+00(9.32E-11)
	25	8.85E-01(2.34E-04)†	9.04E-01(7.22E-06)†	9.99E-01(4.63E-08)‡	9.36E-01(3.61E-04)†	9.12E-01(1.81E-04)†	9.87E-01(6.37E-05)
	50	9.24E-01(1.51E-04)†	9.08E-01(1.81E-06)†	1.00E+00(4.63E-08)‡	9.64E-01(1.68E-04)†	9.20E-01(2.48E-04)†	1.00E+00(1.86E-06)
	200	9.48E-01(7.29E-05)†	9.09E-01(8.58E-09)†	9.92E-01(1.02E-04)†	9.77E-01(8.87E-05)†	9.17E-01(7.58E-05)†	9.99E-01(2.94E-06)
F2	5	8.78E-01(8.03E-05)†	9.72E-01(1.36E-05)†	9.90E-01(1.31E-05)†	8.73E-01(2.09E-03)†	9.70E-01(2.75E-05)†	9.98E-01(6.68E-06)
	25	9.52E-01(1.23E-05)†	9.65E-01(6.81E-06)†	9.98E-01(3.91E-06)‡	8.15E-01(1.42E-03)†	9.51E-01(5.17E-06)†	9.89E-01(7.80E-06)
	50	9.60E-01(7.97E-06)†	9.60E-01(4.87E-06)†	9.97E-01(4.46E-06)†	7.35E-01(1.33E-03)†	9.48E-01(2.62E-06)†	9.98E-01(1.96E-06)
	200	9.65E-01(6.26E-06)†	9.48E-01(2.22E-06)†	9.96E-01(6.46E-06)†	6.24E-01(3.05E-04)†	9.44E-01(1.56E-06)†	9.98E-01(2.95E-06)
F3	5	8.67E-01(3.02E-05)†	9.11E-01(6.50E-05)†	9.82E-01(1.42E-04)†	8.58E-01(9.87E-04)†	8.92E-01(3.66E-04)†	9.99E-01(7.73E-06)
	25	9.31E-01(7.82E-05)†	9.50E-01(1.37E-05)†	9.98E-01(2.86E-07)‡	8.31E-01(1.01E-03)†	9.54E-01(1.01E-04)†	9.92E-01(2.97E-05)
	50	9.58E-01(4.59E-05)†	9.47E-01(3.63E-06)†	9.99E-01(2.72E-07)†	8.66E-01(1.98E-03)†	9.52E-01(7.95E-05)†	1.00E+00(7.68E-07)
	200	9.67E-01(3.88E-05)†	9.43E-01(3.00E-07)†	9.81E-01(2.64E-04)†	8.42E-01(1.30E-03)†	9.49E-01(6.17E-05)†	1.00E+00(1.04E-06)
F4	5	7.96E-01(3.02E-04)	8.09E-01(8.71E-04)	9.49E-01(5.25E-04)‡	8.94E-01(2.65E-04)‡	9.39E-01(2.64E-04)‡	7.92E-01(2.23E-03)
	25	9.23E-01(7.61E-05)‡	9.12E-01(3.28E-04)‡	9.70E-01(2.36E-04)‡	9.18E-01(4.45E-05)‡	9.41E-01(4.05E-06)‡	8.08E-01(8.75E-04)
	50	9.44E-01(1.62E-05)‡	9.33E-01(8.91E-05)‡	9.74E-01(1.51E-04)‡	9.22E-01(7.06E-05)‡	9.42E-01(6.33E-12)‡	8.08E-01(1.70E-03)
	200	9.49E-01(3.03E-05)‡	9.42E-01(5.09E-32)‡	9.75E-01(1.85E-04)‡	9.31E-01(2.88E-05)‡	9.42E-01(5.79E-12)‡	8.13E-01(3.10E-03)
WFG1	5	6.57E-01(2.75E-04)†	5.81E-01(2.16E-04)†	7.26E-01(1.66E-04)†	4.52E-01(2.73E-04)†	6.68E-01(2.36E-04)†	9.42E-01(1.60E-04)
	25	7.84E-01(1.16E-04)†	5.75E-01(7.51E-04)†	8.17E-01(1.32E-04)†	4.93E-01(2.58E-04)†	7.49E-01(3.07E-04)†	9.50E-01(2.56E-05)
	50	8.32E-01(3.48E-05)†	5.40E-01(1.16E-03)†	8.61E-01(8.56E-05)†	5.12E-01(9.31E-05)†	8.06E-01(1.21E-04)†	9.65E-01(2.16E-05)
	200	8.84E-01(7.62E-06)†	5.16E-01(9.18E-05)†	9.19E-01(2.63E-05)†	5.12E-01(3.22E-05)†	8.73E-01(1.43E-05)†	9.68E-01(1.85E-05)
WFG2	5	7.33E-01(1.76E-04)†	5.89E-01(2.46E-04)†	8.18E-01(8.66E-05)†	1.83E-01(4.36E-06)†	7.91E-01(1.17E-04)†	9.96E-01(4.43E-05)
	25	8.61E-01(2.79E-05)†	5.13E-01(1.74E-04)†	9.09E-01(5.98E-05)†	1.86E-01(6.16E-06)†	8.57E-01(5.13E-05)†	9.88E-01(1.65E-05)
	50	8.74E-01(2.13E-05)†	5.13E-01(7.30E-05)†	9.19E-01(5.79E-05)†	1.87E-01(4.17E-06)†	8.62E-01(7.79E-05)†	9.61E-01(2.00E-02)
	200	8.77E-01(1.27E-05)†	5.23E-01(1.91E-05)†	9.19E-01(7.63E-05)†	1.88E-01(7.95E-07)†	8.56E-01(1.01E-04)†	9.82E-01(4.79E-06)
WFG3	5	9.76E-01(2.17E-04)†	9.67E-01(2.75E-04)†	9.10E-01(2.61E-04)†	4.72E-01(1.15E-05)†	9.74E-01(4.45E-04)†	9.96E-01(6.65E-05)
	25	9.66E-01(3.99E-04)†	9.74E-01(2.47E-04)†	9.22E-01(2.14E-04)†	4.72E-01(9.50E-06)†	9.62E-01(6.46E-04)†	9.84E-01(1.91E-04)
	50	9.55E-01(2.22E-04)†	9.73E-01(2.50E-04)†	9.19E-01(2.18E-04)†	4.70E-01(8.65E-06)†	9.67E-01(6.24E-04)†	9.98E-01(1.33E-05)
	200	9.35E-01(3.43E-04)†	9.74E-01(2.32E-04)†	9.03E-01(1.91E-04)†	4.73E-01(8.66E-06)†	9.03E-01(5.88E-02)†	9.93E-01(1.29E-03)
WFG4	5	8.86E-01(2.14E-04)†	9.37E-01(1.68E-04)†	9.48E-01(4.84E-05)†	8.28E-01(7.42E-05)†	9.56E-01(3.50E-05)†	1.00E+00(4.82E-07)
	25	9.49E-01(1.03E-05)†	9.37E-01(5.50E-05)†	9.66E-01(2.89E-05)†	8.40E-01(4.81E-06)†	9.44E-01(1.33E-06)†	9.90E-01(3.81E-06)
	50	9.52E-01(1.27E-05)†	9.43E-01(4.12E-05)†	9.67E-01(2.62E-05)†	8.40E-01(3.69E-06)†	9.42E-01(1.97E-07)†	1.00E+00(1.25E-07)
	200	9.50E-01(8.82E-06)†	9.50E-01(1.79E-05)†	9.65E-01(3.48E-05)†	8.37E-01(5.31E-06)†	9.41E-01(5.01E-07)†	1.00E+00(3.64E-07)
WFG5	5	8.58E-01(1.11E-04)†	9.36E-01(7.70E-05)†	9.58E-01(1.45E-05)†	8.23E-01(2.85E-05)†	9.57E-01(2.10E-05)†	9.84E-01(1.74E-06)
	25	9.37E-01(6.04E-06)†	9.26E-01(3.85E-05)†	9.68E-01(8.62E-06)†	8.24E-01(7.43E-06)†	9.32E-01(1.41E-06)†	9.79E-01(5.64E-06)
	50	9.41E-01(4.57E-06)†	9.26E-01(7.13E-05)†	9.69E-01(7.51E-06)†	8.19E-01(9.31E-06)†	9.33E-01(1.18E-06)†	9.85E-01(3.41E-07)
	200	9.42E-01(7.98E-06)†	9.23E-01(2.34E-05)†	9.69E-01(7.27E-06)†	8.18E-01(1.16E-05)†	9.34E-01(4.35E-07)†	9.86E-01(3.70E-07)
WFG6	5	8.29E-01(4.67E-04)†	8.75E-01(3.44E-04)†	9.27E-01(3.27E-04)†	3.81E-01(4.08E-06)†	8.96E-01(5.65E-04)†	9.73E-01(1.21E-04)
	25	9.08E-01(2.56E-04)†	8.97E-01(3.46E-04)†	9.40E-01(2.70E-04)†	3.86E-01(3.90E-06)†	8.77E-01(5.92E-04)†	9.70E-01(6.02E-05)
	50	9.14E-01(2.89E-04)†	9.04E-01(3.19E-04)†	9.40E-01(3.36E-04)†	3.88E-01(3.95E-06)†	8.69E-01(7.67E-04)†	9.75E-01(9.92E-05)
	200	9.21E-01(2.81E-04)†	9.08E-01(3.38E-04)†	9.43E-01(2.15E-04)†	3.87E-01(1.74E-06)†	8.78E-01(6.39E-04)†	9.79E-01(4.16E-05)
WFG7	5	9.54E-01(2.11E-05)†	9.36E-01(8.06E-05)†	9.77E-01(1.12E-05)†	9.72E-01(1.86E-05)†	9.66E-01(2.16E-05)†	9.97E-01(3.36E-06)
	25	9.53E-01(1.52E-05)†	9.53E-01(1.13E-05)†	9.79E-01(1.30E-05)†	9.58E-01(1.24E-05)†	9.43E-01(1.41E-06)†	9.89E-01(5.31E-06)
	50	9.50E-01(6.99E-06)†	9.55E-01(1.57E-05)†	9.79E-01(1.28E-05)†	9.47E-01(5.27E-06)†	9.42E-01(2.63E-07)†	9.97E-01(3.00E-06)
	200	9.46E-01(7.39E-06)†	9.63E-01(1.31E-05)†	9.81E-01(7.83E-06)†	9.32E-01(1.41E-05)†	9.41E-01(5.96E-07)†	9.97E-01(2.33E-06)
WFG8	5	9.55E-01(2.61E-05)†	9.37E-01(6.11E-05)†	9.78E-01(1.23E-05)†	9.70E-01(4.57E-05)†	9.66E-01(1.99E-05)†	9.96E-01(3.11E-06)
	25	9.53E-01(1.19E-05)†	9.52E-01(1.19E-05)†	9.79E-01(1.24E-05)†	9.58E-01(1.13E-05)†	9.43E-01(3.45E-06)†	9.89E-01(5.33E-06)
	50	9.49E-01(1.46E-05)†	9.56E-01(8.54E-06)†	9.79E-01(1.66E-05)†	9.47E-01(1.41E-05)†	9.42E-01(6.83E-07)†	9.97E-01(2.21E-06)
	200	9.47E-01(1.00E-05)†	9.62E-01(1.13E-05)†	9.81E-01(1.03E-05)†	9.32E-01(1.34E-05)†	9.41E-01(5.48E-07)†	9.97E-01(2.40E-06)
WFG9	5	6.99E-01(8.33E-03)†	8.05E-01(8.81E-04)†	8.65E-01(8.84E-05)‡	9.22E-01(2.34E-03)‡	8.43E-01(2.95E-04)	8.30E-01(2.39E-03)
	25	7.94E-01(3.71E-03)†	8.38E-01(2.78E-04)	8.93E-01(4.57E-04)‡	9.41E-01(9.21E-04)‡	8.35E-01(4.57E-04)	8.26E-01(2.89E-03)
	50	8.12E-01(2.50E-03)	8.42E-01(2.75E-04)	9.12E-01(1.03E-04)‡	9.30E-01(9.94E-04)‡	8.35E-01(5.43E-04)	8.18E-01(2.29E-03)
	200	8.44E-01(1.28E-03)	8.61E-01(4.60E-04)‡	9.19E-01(1.35E-04)‡	9.28E-01(9.04E-04)‡	8.33E-01(7.57E-04)	8.33E-01(1.12E-03)
+-=		46/3/3	45/4/3	40/12/0	44/8/0	44/4/4	—

TABLE 9
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR SOLUTIONS OBTAINED BY ALL COMPARED ALGORITHMS IN THE FIRST GENERATION RIGHT AFTER CHANGES ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	0.00E+00(0.00E+00)†	4.91E-01(3.45E-03)‡	0.00E+00(0.00E+00)†	2.17E-02(7.99E-04)†	3.23E-01(4.43E-03)	3.05E-01(1.68E-02)
	25	1.08E-01(1.22E-02)†	8.32E-01(3.37E-04)‡	5.31E-02(6.50E-03)†	0.00E+00(0.00E+00)†	5.71E-01(2.71E-03)†	6.76E-01(4.58E-03)
	50	3.62E-01(2.30E-03)†	8.48E-01(4.39E-04)‡	3.75E-01(1.89E-03)†	0.00E+00(0.00E+00)†	7.41E-01(3.67E-03)†	8.18E-01(2.02E-03)
	200	4.61E-01(1.98E-03)†	8.93E-01(7.51E-05)‡	3.56E-01(2.16E-03)†	0.00E+00(0.00E+00)†	8.00E-01(3.09E-03)†	8.80E-01(6.74E-04)
F2	5	8.00E-01(9.63E-04)†	9.03E-01(1.36E-05)†	8.57E-01(3.07E-05)†	2.67E-01(3.02E-03)†	9.23E-01(1.18E-05)†	9.46E-01(2.50E-05)
	25	8.56E-01(3.32E-04)†	9.18E-01(1.42E-06)†	8.70E-01(1.46E-05)†	2.48E-01(5.80E-04)†	9.28E-01(1.00E-06)†	9.51E-01(1.41E-05)
	50	8.70E-01(2.08E-04)†	9.20E-01(1.12E-06)†	8.73E-01(2.01E-05)†	2.10E-01(1.49E-04)†	9.29E-01(1.27E-06)†	9.54E-01(1.59E-06)
	200	8.76E-01(1.69E-04)†	9.23E-01(1.84E-07)†	8.70E-01(3.08E-05)†	2.02E-01(3.23E-05)†	9.29E-01(5.91E-07)†	9.54E-01(4.50E-06)
F3	5	0.00E+00(0.00E+00)†	2.81E-01(1.77E-03)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	1.43E-01(2.03E-03)	1.30E-01(1.33E-02)
	25	7.37E-03(5.08E-04)†	5.89E-01(1.54E-03)†	1.10E-02(7.74E-04)†	0.00E+00(0.00E+00)†	3.35E-01(2.58E-03)†	3.86E-01(1.36E-02)
	50	3.06E-01(2.49E-03)†	6.42E-01(9.67E-04)‡	2.99E-01(2.68E-03)†	0.00E+00(0.00E+00)†	4.51E-01(2.45E-03)†	5.70E-01(3.52E-03)
	200	3.45E-01(1.45E-03)†	7.41E-01(1.05E-03)‡	2.88E-01(1.39E-03)†	0.00E+00(0.00E+00)†	5.35E-01(1.39E-03)†	6.50E-01(1.78E-03)
F4	5	5.30E-01(1.81E-04)†	8.96E-01(4.48E-05)	7.75E-01(1.66E-04)†	8.10E-01(4.23E-04)†	9.01E-01(4.18E-05)	8.99E-01(4.34E-04)
	25	6.97E-01(7.08E-05)†	9.11E-01(2.84E-05)‡	8.08E-01(1.64E-04)†	8.86E-01(1.56E-04)†	9.26E-01(3.07E-06)‡	9.01E-01(2.78E-04)
	50	7.48E-01(2.03E-05)†	9.16E-01(9.81E-06)‡	8.18E-01(1.54E-04)†	8.91E-01(1.61E-04)†	9.27E-01(2.97E-06)‡	9.01E-01(1.63E-04)
	200	7.77E-01(1.84E-05)†	9.23E-01(6.28E-07)‡	8.15E-01(1.16E-04)†	8.97E-01(9.01E-05)	9.28E-01(3.37E-06)‡	8.98E-01(4.11E-04)
WFG1	5	8.46E-01(7.62E-05)†	7.22E-01(1.19E-04)†	8.21E-01(6.89E-05)†	8.01E-01(3.97E-06)†	8.34E-01(4.45E-05)†	8.56E-01(2.55E-05)
	25	8.89E-01(1.92E-05)†	7.96E-01(3.77E-05)†	8.76E-01(1.91E-05)†	7.55E-01(1.04E-03)†	8.91E-01(1.56E-05)†	9.11E-01(2.02E-05)
	50	9.08E-01(8.21E-06)†	8.23E-01(2.87E-05)†	8.97E-01(2.33E-05)†	7.67E-01(1.12E-03)†	9.08E-01(3.55E-06)†	9.27E-01(2.88E-06)
	200	9.21E-01(2.62E-06)†	8.59E-01(6.94E-06)†	9.13E-01(6.47E-06)†	7.42E-01(5.14E-04)†	9.20E-01(4.77E-07)†	9.35E-01(4.67E-06)
WFG2	5	8.30E-01(3.29E-04)†	7.63E-01(2.49E-04)†	8.48E-01(7.30E-05)†	2.36E-01(2.08E-06)†	8.84E-01(2.09E-04)†	9.26E-01(1.92E-05)
	25	8.77E-01(1.47E-04)†	8.31E-01(1.23E-04)†	8.69E-01(1.84E-04)†	2.38E-01(5.00E-07)†	9.11E-01(1.17E-04)†	9.42E-01(1.36E-05)
	50	8.76E-01(2.41E-04)†	8.44E-01(1.16E-04)†	8.68E-01(1.57E-04)†	2.38E-01(1.12E-06)†	9.10E-01(1.21E-04)†	9.43E-01(1.11E-05)
	200	8.77E-01(1.67E-04)†	8.58E-01(1.23E-04)†	8.66E-01(1.94E-04)†	2.39E-01(4.82E-07)†	9.14E-01(1.13E-04)†	9.47E-01(8.09E-06)
WFG3	5	6.01E-01(1.21E-04)	5.29E-01(3.77E-04)†	5.86E-01(6.57E-05)†	2.43E-01(9.19E-06)†	5.86E-01(7.53E-05)†	6.04E-01(5.83E-05)
	25	6.32E-01(6.06E-05)‡	6.03E-01(1.16E-04)†	6.35E-01(4.30E-05)‡	2.49E-01(1.33E-06)†	6.26E-01(4.03E-05)	6.26E-01(2.48E-05)
	50	6.40E-01(6.71E-05)‡	6.11E-01(9.51E-05)†	6.39E-01(5.67E-05)‡	2.49E-01(1.20E-06)†	6.29E-01(5.77E-05)†	6.32E-01(4.96E-05)
	200	6.46E-01(7.20E-05)‡	6.18E-01(8.56E-05)†	6.41E-01(6.79E-05)	2.50E-01(8.68E-07)†	6.30E-01(3.81E-05)†	6.40E-01(2.77E-05)
WFG4	5	6.08E-01(1.08E-04)†	5.73E-01(2.35E-04)†	5.98E-01(4.40E-05)†	2.97E-01(6.42E-05)†	6.94E-01(4.99E-05)†	7.87E-01(1.83E-05)
	25	6.69E-01(2.68E-05)†	6.19E-01(1.41E-04)†	6.40E-01(2.67E-05)†	3.01E-01(1.28E-05)†	7.49E-01(3.75E-07)†	8.11E-01(1.20E-06)
	50	6.75E-01(2.13E-05)†	6.37E-01(7.92E-05)†	6.40E-01(2.55E-05)†	3.00E-01(1.15E-05)†	7.52E-01(4.10E-07)†	8.14E-01(1.07E-06)
	200	6.85E-01(1.98E-05)†	6.66E-01(3.24E-05)†	6.51E-01(1.87E-05)†	3.01E-01(3.62E-06)†	7.53E-01(2.76E-07)†	8.16E-01(7.47E-07)
WFG5	5	6.09E-01(2.53E-04)†	5.81E-01(1.20E-04)†	5.85E-01(4.65E-05)†	5.21E-01(2.06E-05)†	7.32E-01(3.52E-05)†	7.55E-01(2.15E-05)
	25	6.41E-01(4.72E-05)†	6.09E-01(4.79E-05)†	6.17E-01(2.57E-05)†	5.20E-01(2.99E-06)†	7.23E-01(1.19E-06)†	7.79E-01(5.47E-06)
	50	6.46E-01(2.33E-05)†	6.20E-01(2.34E-05)†	6.24E-01(1.94E-05)†	5.19E-01(3.18E-06)†	7.24E-01(1.82E-06)†	7.83E-01(2.50E-06)
	200	6.52E-01(2.58E-05)†	6.42E-01(1.66E-05)†	6.29E-01(1.72E-05)†	5.19E-01(1.66E-06)†	7.25E-01(1.16E-06)†	7.84E-01(2.35E-06)
WFG6	5	4.75E-01(7.66E-04)†	4.39E-01(4.71E-04)†	4.97E-01(6.67E-04)†	1.44E-01(2.23E-06)†	5.37E-01(1.94E-03)†	6.69E-01(2.98E-03)
	25	5.70E-01(9.47E-04)†	5.16E-01(6.80E-04)†	5.64E-01(7.15E-04)†	1.49E-01(5.21E-07)†	5.77E-01(2.20E-03)†	7.20E-01(2.63E-03)
	50	5.94E-01(1.01E-03)†	5.39E-01(6.64E-04)†	5.68E-01(8.08E-04)†	1.50E-01(2.66E-07)†	6.04E-01(2.13E-03)†	7.19E-01(2.24E-03)
	200	6.02E-01(9.73E-04)†	5.72E-01(8.02E-04)†	5.73E-01(8.39E-04)†	1.51E-01(2.89E-07)†	6.23E-01(1.97E-03)†	7.30E-01(2.00E-03)
WFG7	5	6.49E-01(7.45E-05)†	4.78E-01(3.00E-04)†	5.96E-01(6.94E-05)†	5.34E-01(7.04E-05)†	7.01E-01(2.78E-05)†	7.80E-01(1.74E-05)
	25	6.67E-01(1.68E-05)†	5.90E-01(5.05E-05)†	6.23E-01(2.62E-05)†	6.11E-01(3.92E-05)†	7.27E-01(3.00E-06)†	8.04E-01(1.83E-06)
	50	6.71E-01(1.39E-05)†	6.08E-01(2.94E-05)†	6.27E-01(2.40E-05)†	6.25E-01(3.28E-05)†	7.30E-01(2.02E-06)†	8.06E-01(1.62E-06)
	200	6.75E-01(1.17E-05)†	6.51E-01(1.51E-05)†	6.31E-01(3.17E-05)†	6.47E-01(3.12E-05)†	7.32E-01(1.89E-06)†	8.08E-01(1.02E-06)
WFG8	5	6.46E-01(4.80E-05)†	4.79E-01(1.20E-04)†	5.97E-01(7.20E-05)†	5.28E-01(1.93E-04)†	7.05E-01(4.79E-05)†	7.78E-01(2.43E-05)
	25	6.67E-01(1.68E-05)†	5.90E-01(5.05E-05)†	6.23E-01(2.62E-05)†	6.11E-01(5.75E-05)†	7.28E-01(1.81E-06)†	8.04E-01(4.00E-06)
	50	6.72E-01(1.26E-05)†	6.09E-01(4.89E-05)†	6.28E-01(2.55E-05)†	6.24E-01(4.34E-05)†	7.30E-01(1.10E-06)†	8.06E-01(1.31E-06)
	200	6.76E-01(1.50E-05)†	6.50E-01(2.15E-05)†	6.32E-01(1.74E-05)†	6.46E-01(2.50E-05)†	7.32E-01(7.99E-07)†	8.08E-01(1.12E-06)
WFG9	5	6.37E-01(2.67E-04)‡	3.78E-01(1.42E-03)†	5.71E-01(4.16E-04)‡	6.09E-01(1.72E-04)‡	5.27E-01(1.01E-02)	5.50E-01(7.78E-03)
	25	6.67E-01(1.68E-05)	5.90E-01(5.05E-05)	6.23E-01(2.62E-05)	6.85E-01(3.76E-05)	6.17E-01(1.05E-02)	6.41E-01(1.49E-02)
	50	6.78E-01(1.43E-04)	5.97E-01(5.24E-03)	6.39E-01(9.38E-05)	6.95E-01(3.03E-05)	5.61E-01(1.10E-02)†	6.30E-01(1.34E-02)
	200	6.86E-01(1.73E-04)‡	6.46E-01(4.72E-03)‡	6.46E-01(1.09E-04)‡	6.97E-01(4.80E-05)‡	5.59E-01(1.12E-02)†	5.94E-01(1.14E-02)
+-=		44/5/3	38/11/3	45/4/3	47/2/3	44/2/6	—

TABLE 10
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR SOLUTIONS OBTAINED BY ALL COMPARED ALGORITHMS IN THE FIRST GENERATION RIGHT AFTER CHANGES ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	2.14E+02(6.65E+01)†	2.75E+01(7.14E+00)‡	2.27E+02(3.90E+01)†	5.53E+02(2.54E+03)†	4.04E+01(1.34E+01)‡	6.52E+01(1.53E+02)
	25	1.34E+02(2.21E+01)†	2.10E+01(2.18E+00)‡	1.65E+02(7.64E+01)†	6.23E+02(2.72E+03)†	2.15E+01(1.48E+00)‡	3.51E+01(2.44E+01)
	50	1.19E+02(2.87E+01)†	2.03E+01(2.05E+00)†	1.46E+02(1.55E+01)†	6.80E+02(1.44E+03)†	1.82E+01(1.99E+00)	1.93E+01(7.47E+00)
	200	1.30E+02(1.32E+02)†	1.86E+01(1.96E+01)†	1.46E+02(1.60E+02)†	8.00E+02(7.95E+02)†	1.96E+01(1.86E+01)†	1.19E+01(1.32E+01)
F2	5	5.05E-01(2.64E-03)†	2.01E-01(8.21E-05)†	4.47E-01(2.04E-04)†	3.56E+00(5.92E-02)†	1.28E-01(3.71E-05)†	1.04E-01(1.45E-05)
	25	3.73E-01(4.86E-04)†	1.44E-01(3.23E-05)†	3.97E-01(1.27E-04)†	3.97E+00(6.52E-02)†	8.56E-02(7.62E-06)†	8.20E-02(5.44E-06)
	50	3.56E-01(2.95E-04)†	1.32E-01(3.00E-05)†	3.98E-01(1.46E-04)†	3.82E+00(8.00E-02)†	7.85E-02(6.23E-06)†	7.66E-02(3.32E-06)
	200	3.53E-01(3.82E-01)†	1.05E-01(1.04E-01)†	4.29E-01(4.15E-01)†	4.75E+00(4.59E+00)†	7.15E-02(7.44E-02)	7.23E-02(7.14E-02)
F3	5	4.60E+02(3.67E+02)†	6.98E+01(3.38E+01)‡	5.23E+02(3.39E+02)†	6.92E+02(1.57E+03)†	1.01E+02(7.05E+01)‡	1.63E+02(1.23E+03)
	25	2.91E+02(1.19E+02)†	5.41E+01(2.03E+01)‡	3.80E+02(1.28E+02)†	6.31E+02(9.68E+02)†	5.55E+01(1.31E+01)‡	9.90E+01(1.75E+02)
	50	2.57E+02(9.35E+01)†	5.11E+01(1.44E+01)	3.42E+02(3.79E+01)†	6.54E+02(1.16E+03)†	4.61E+01(3.94E+00)‡	5.18E+01(7.31E+01)
	200	2.84E+02(2.79E+02)†	4.42E+01(4.27E+01)†	3.51E+02(3.67E+02)†	6.92E+02(6.46E+02)†	4.57E+01(4.67E+01)†	3.99E+01(4.00E+01)
F4	5	1.02E+00(1.19E-03)†	1.74E-01(1.11E-04)†	6.16E-01(2.76E-04)†	1.82E-01(4.61E-03)	2.14E-01(1.63E-04)†	1.51E-01(3.42E-04)
	25	5.68E-01(1.04E-04)†	1.51E-01(5.29E-05)†	5.19E-01(1.25E-04)†	6.93E-02(1.35E-03)‡	1.19E-01(2.51E-05)†	1.05E-01(2.67E-05)
	50	5.37E-01(1.52E-04)†	1.48E-01(2.72E-05)†	5.26E-01(7.42E-05)†	6.65E-02(1.08E-03)‡	1.09E-01(2.66E-05)†	9.81E-02(2.21E-05)
	200	5.39E-01(5.34E-01)†	1.28E-01(1.33E-01)†	5.41E-01(5.50E-01)†	6.50E-02(8.35E-02)‡	1.02E-01(9.93E-02)†	9.84E-02(1.02E-01)
WFG1	5	5.01E-01(3.00E-04)†	6.59E-01(1.69E-03)†	7.27E-01(2.03E-04)†	1.18E+00(3.20E-03)†	4.51E-01(1.26E-04)†	4.10E-01(1.09E-04)
	25	3.71E-01(1.04E-04)†	4.32E-01(4.30E-04)†	6.09E-01(7.97E-05)†	1.12E+00(1.00E-03)†	3.12E-01(6.94E-05)†	2.67E-01(3.45E-03)
	50	3.44E-01(4.41E-05)†	3.65E-01(3.06E-04)†	5.82E-01(2.45E-05)†	1.13E+00(2.06E-04)†	2.66E-01(3.20E-05)†	1.93E-01(7.43E-03)
	200	3.30E-01(3.35E-01)†	2.99E-01(2.96E-01)†	5.78E-01(5.70E-01)†	1.16E+00(1.14E+00)†	2.31E-01(2.26E-01)‡	2.33E-01(2.23E-01)
WFG2	5	9.36E-01(1.52E-03)†	6.18E-01(1.71E-03)‡	1.03E+00(5.08E-04)†	3.20E-01(2.95E-05)‡	6.57E-01(1.15E-03)‡	7.14E-01(4.86E-04)
	25	9.09E-01(1.08E-03)†	4.94E-01(1.05E-03)‡	1.04E+00(8.06E-04)†	3.17E-01(1.09E-05)‡	5.49E-01(6.04E-04)‡	6.76E-01(2.51E-04)
	50	9.46E-01(7.88E-04)†	4.89E-01(1.09E-03)‡	1.07E+00(6.97E-04)†	3.18E-01(2.11E-05)‡	5.49E-01(5.83E-04)‡	6.56E-01(2.61E-04)
	200	9.54E-01(9.84E-01)†	5.21E-01(4.77E-01)‡	1.12E+00(1.08E+00)†	3.17E-01(3.11E-01)‡	5.25E-01(5.31E-01)‡	6.55E-01(6.39E-01)
WFG3	5	1.37E+00(6.76E-03)	2.08E+00(6.04E-03)†	1.65E+00(2.82E-03)†	1.31E+00(4.37E-04)‡	1.58E+00(1.69E-03)†	1.37E+00(1.35E-02)
	25	1.15E+00(1.57E-02)‡	1.98E+00(3.98E-03)†	1.62E+00(1.57E-03)†	1.26E+00(2.19E-04)‡	1.58E+00(1.94E-03)	1.57E+00(1.11E-02)
	50	1.36E+00(1.69E-02)‡	1.96E+00(5.28E-03)†	1.64E+00(1.93E-03)	1.26E+00(1.31E-04)‡	1.64E+00(1.62E-03)	1.63E+00(8.99E-03)
	200	1.66E+00(1.64E+00)	2.04E+00(2.01E+00)†	1.69E+00(1.65E+00)	1.26E+00(1.26E+00)‡	1.65E+00(1.66E+00)	1.36E+00(1.70E+00)
WFG4	5	5.22E-01(1.18E-04)†	5.20E-01(1.87E-04)†	6.30E-01(1.07E-04)†	4.22E-01(3.38E-04)†	3.48E-01(5.51E-05)†	3.19E-01(7.15E-05)
	25	4.97E-01(4.10E-05)†	3.81E-01(4.91E-05)†	5.74E-01(5.22E-05)†	3.76E-01(1.13E-04)†	2.48E-01(5.19E-06)‡	2.72E-01(3.79E-05)
	50	4.91E-01(5.63E-05)†	3.55E-01(3.55E-05)†	5.68E-01(3.88E-05)†	3.76E-01(1.54E-04)†	2.36E-01(5.46E-06)‡	2.68E-01(1.58E-05)
	200	4.96E-01(4.77E-01)†	3.18E-01(3.17E-01)†	5.44E-01(5.57E-01)†	3.67E-01(3.78E-01)†	2.14E-01(2.13E-01)‡	2.58E-01(2.64E-01)
WFG5	5	5.48E-01(2.14E-04)†	5.17E-01(2.46E-04)†	7.24E-01(1.04E-04)†	8.01E-02(9.39E-06)‡	3.52E-01(9.18E-05)‡	3.68E-01(1.12E-04)
	25	5.12E-01(9.69E-05)†	3.97E-01(8.79E-05)†	6.50E-01(8.45E-05)†	6.41E-02(6.40E-06)‡	2.80E-01(6.86E-06)‡	3.18E-01(1.49E-05)
	50	5.06E-01(6.00E-05)†	3.68E-01(8.45E-05)†	6.37E-01(4.22E-05)†	6.29E-02(6.15E-06)‡	2.73E-01(5.32E-06)‡	3.21E-01(4.53E-05)
	200	4.95E-01(5.04E-01)†	3.35E-01(3.34E-01)†	6.18E-01(6.34E-01)†	5.75E-02(6.38E-02)‡	2.71E-01(2.69E-01)‡	3.25E-01(3.28E-01)
WFG6	5	7.57E-01(4.50E-03)†	7.73E-01(3.67E-03)†	9.48E-01(4.03E-03)†	1.16E-01(2.33E-05)‡	7.81E-01(1.30E-02)†	6.34E-01(1.26E-02)
	25	6.71E-01(5.07E-03)†	5.56E-01(3.38E-03)	8.12E-01(3.99E-03)†	1.19E-01(5.86E-06)‡	6.65E-01(1.13E-02)†	5.49E-01(1.53E-02)
	50	6.55E-01(6.17E-03)†	5.24E-01(3.47E-03)	8.12E-01(4.88E-03)†	1.20E-01(2.50E-06)‡	5.93E-01(1.18E-02)	5.63E-01(1.71E-02)
	200	7.67E-01(6.59E-01)†	5.74E-01(5.01E-01)	8.92E-01(8.02E-01)†	1.24E-01(1.25E-01)‡	5.00E-01(4.40E-01)	5.70E-01(6.46E-01)
WFG7	5	6.09E-01(9.82E-05)†	6.71E-01(3.63E-03)†	8.05E-01(1.27E-04)†	2.69E-01(1.25E-04)‡	4.08E-01(6.52E-05)†	3.44E-01(4.73E-05)
	25	5.56E-01(4.47E-05)†	4.95E-01(2.48E-04)†	7.32E-01(5.07E-05)†	1.54E-01(2.57E-05)‡	2.89E-01(8.37E-06)†	2.84E-01(1.51E-05)
	50	5.50E-01(3.17E-05)†	4.46E-01(9.64E-05)†	7.25E-01(2.23E-05)†	1.32E-01(2.57E-05)‡	2.74E-01(5.45E-06)	2.73E-01(1.93E-05)
	200	5.31E-01(5.50E-01)†	3.94E-01(3.85E-01)†	7.22E-01(7.14E-01)†	1.15E-01(1.22E-01)‡	2.53E-01(2.53E-01)‡	2.58E-01(2.50E-01)
WFG8	5	6.12E-01(1.16E-04)†	6.85E-01(1.81E-03)†	8.06E-01(1.28E-04)†	2.69E-01(1.62E-04)‡	4.04E-01(7.38E-05)†	3.43E-01(2.97E-05)
	25	5.56E-01(4.47E-05)†	4.95E-01(2.48E-04)†	7.32E-01(5.07E-05)†	1.53E-01(2.17E-05)‡	2.88E-01(5.31E-06)†	2.85E-01(2.34E-05)
	50	5.48E-01(3.19E-05)†	4.46E-01(1.69E-04)†	7.24E-01(3.33E-05)†	1.32E-01(5.94E-06)‡	2.74E-01(5.38E-06)	2.74E-01(2.32E-05)
	200	5.38E-01(5.47E-01)†	3.87E-01(3.91E-01)†	7.07E-01(7.03E-01)†	1.22E-01(1.13E-01)‡	2.53E-01(2.56E-01)†	2.52E-01(2.43E-01)
WFG9	5	7.01E-01(1.16E-03)‡	9.02E-01(5.03E-03)	8.93E-01(3.14E-03)	1.66E-01(7.38E-05)‡	8.90E-01(4.60E-02)	8.57E-01(2.42E-02)
	25	5.56E-01(4.47E-05)	4.95E-01(2.48E-04)	7.32E-01(5.07E-05)	1.24E-01(1.27E-05)‡	6.10E-01(3.56E-02)†	6.40E-01(4.40E-02)
	50	6.07E-01(5.54E-04)	5.18E-01(1.74E-02)‡	7.13E-01(3.01E-04)	1.16E-01(5.77E-06)‡	7.11E-01(3.63E-02)	6.50E-01(3.84E-02)
	200	6.21E-01(5.91E-01)‡	4.70E-01(3.94E-01)‡	7.50E-01(6.92E-01)‡	1.18E-01(1.11E-01)‡	7.61E-01(8.64E-01)	9.14E-01(5.48E-01)
+-=		44/4/4	38/8/6	46/1/5	20/31/1	22/18/12	—

TABLE 11
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR SOLUTIONS OBTAINED BY ALL COMPARED ALGORITHMS IN THE FIRST GENERATION RIGHT AFTER CHANGES ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.00E+00(0.00E+00)‡	9.72E-01(3.40E-04)	9.95E-01(1.00E-04)	9.28E-01(3.43E-04)†	1.00E+00(7.00E-08)	9.62E-01(5.00E-03)
	25	1.00E+00(3.93E-06)‡	9.04E-01(2.63E-04)†	1.00E+00(1.71E-07)‡	9.43E-01(3.67E-04)†	6.31E-01(2.27E-01)†	9.90E-01(5.30E-04)
	50	9.99E-01(1.14E-05)†	9.09E-01(1.96E-05)†	1.00E+00(6.42E-08)‡	9.42E-01(3.63E-04)†	9.48E-01(4.12E-04)†	9.99E-01(2.09E-06)
	200	9.49E-01(6.56E-05)†	9.09E-01(5.95E-07)†	9.96E-01(6.04E-05)†	9.46E-01(2.76E-04)†	9.16E-01(9.93E-05)†	1.00E+00(2.27E-07)
F2	5	9.46E-01(3.10E-04)†	9.93E-01(9.87E-06)†	9.93E-01(1.40E-05)†	9.01E-01(1.80E-03)†	9.84E-01(5.47E-05)†	9.96E-01(1.64E-05)
	25	9.52E-01(1.16E-05)†	9.69E-01(5.92E-06)†	9.97E-01(3.78E-06)	8.43E-01(7.93E-04)†	6.15E-01(2.15E-01)†	9.97E-01(1.36E-05)
	50	9.61E-01(6.63E-06)†	9.62E-01(4.08E-06)†	9.98E-01(2.19E-06)	7.50E-01(1.23E-03)†	9.48E-01(4.15E-06)†	9.98E-01(5.16E-06)
	200	9.65E-01(8.20E-06)†	9.49E-01(1.19E-06)†	9.97E-01(3.69E-06)†	6.33E-01(1.41E-03)†	9.45E-01(1.94E-06)†	9.99E-01(1.81E-06)
F3	5	1.00E+00(0.00E+00)‡	9.94E-01(8.04E-05)	1.00E+00(0.00E+00)‡	8.57E-01(1.06E-03)†	1.00E+00(8.39E-08)	9.45E-01(7.27E-03)
	25	1.00E+00(0.00E+00)‡	9.80E-01(4.91E-05)‡	1.00E+00(5.18E-11)‡	8.65E-01(5.19E-04)†	6.42E-01(2.34E-01)†	9.74E-01(1.61E-03)
	50	9.97E-01(2.14E-05)	9.52E-01(7.20E-06)†	1.00E+00(1.98E-09)‡	8.42E-01(4.86E-04)†	9.76E-01(1.22E-04)†	1.00E+00(5.77E-08)
	200	9.67E-01(2.56E-05)†	9.43E-01(3.63E-07)†	9.81E-01(2.47E-04)†	7.88E-01(1.74E-03)†	9.48E-01(4.56E-05)†	1.00E+00(4.74E-07)
F4	5	9.83E-01(1.30E-04)‡	9.24E-01(2.34E-04)‡	9.70E-01(1.71E-04)‡	9.40E-01(2.26E-04)‡	9.46E-01(5.91E-05)‡	8.94E-01(1.35E-03)
	25	9.22E-01(6.87E-05)‡	9.34E-01(1.30E-04)‡	9.67E-01(2.15E-04)‡	9.31E-01(1.64E-04)‡	6.07E-01(2.09E-01)†	8.77E-01(5.43E-04)
	50	9.45E-01(1.97E-05)‡	9.40E-01(2.19E-05)‡	9.72E-01(1.80E-04)‡	9.34E-01(6.69E-05)‡	9.42E-01(5.18E-12)‡	8.76E-01(3.82E-04)
	200	9.48E-01(2.56E-05)‡	9.42E-01(3.23E-16)‡	9.73E-01(1.65E-04)‡	9.35E-01(4.63E-05)‡	9.42E-01(3.91E-12)‡	8.78E-01(1.06E-03)
WFG1	5	8.18E-01(2.47E-04)†	5.84E-01(9.71E-04)†	7.66E-01(1.96E-04)†	4.37E-01(1.45E-04)†	7.70E-01(4.35E-04)†	8.59E-01(5.21E-04)
	25	7.90E-01(8.42E-05)†	5.14E-01(3.22E-04)†	8.07E-01(7.24E-05)†	4.52E-01(8.77E-05)†	4.87E-01(1.35E-01)†	9.05E-01(2.46E-04)
	50	8.27E-01(5.41E-05)†	4.83E-01(3.24E-04)†	8.52E-01(6.29E-05)†	4.58E-01(6.27E-05)†	7.83E-01(1.31E-04)†	9.39E-01(3.68E-05)
	200	8.83E-01(8.47E-06)†	4.79E-01(1.96E-04)†	9.17E-01(2.71E-05)†	4.58E-01(3.07E-05)†	8.69E-01(1.94E-05)†	9.57E-01(2.51E-05)
WFG2	5	7.69E-01(7.64E-05)†	5.12E-01(1.46E-03)†	8.48E-01(1.00E-04)†	1.83E-01(6.51E-06)†	8.16E-01(1.15E-04)†	9.57E-01(2.88E-04)
	25	8.57E-01(3.40E-05)†	4.70E-01(7.10E-04)†	9.08E-01(6.56E-05)†	1.86E-01(3.89E-06)†	5.48E-01(1.71E-01)†	9.77E-01(9.82E-05)
	50	8.70E-01(2.59E-05)†	4.78E-01(7.22E-04)†	9.13E-01(6.76E-05)†	1.85E-01(3.72E-06)†	8.60E-01(7.17E-05)†	9.77E-01(7.14E-05)
	200	8.75E-01(2.56E-05)†	4.91E-01(4.94E-04)†	9.18E-01(3.51E-05)†	1.87E-01(1.23E-06)†	8.62E-01(6.17E-05)†	9.77E-01(5.01E-05)
WFG3	5	8.42E-01(4.17E-04)‡	7.41E-01(3.96E-03)†	7.71E-01(2.54E-04)†	4.71E-01(4.42E-05)†	7.85E-01(5.02E-04)†	8.24E-01(7.82E-04)
	25	9.08E-01(2.21E-04)‡	8.68E-01(1.23E-03)	8.88E-01(1.62E-04)‡	4.70E-01(1.53E-05)†	5.58E-01(1.77E-01)†	8.70E-01(5.76E-04)
	50	9.18E-01(2.04E-04)‡	8.85E-01(9.60E-04)	9.00E-01(1.92E-04)‡	4.69E-01(1.10E-05)†	8.77E-01(2.92E-04)	8.83E-01(3.79E-04)
	200	9.17E-01(2.75E-04)‡	9.09E-01(4.50E-04)	9.04E-01(2.38E-04)	4.71E-01(1.92E-05)†	8.90E-01(2.58E-04)†	9.02E-01(2.23E-04)
WFG4	5	9.03E-01(7.52E-05)†	8.76E-01(7.51E-04)†	9.45E-01(3.41E-05)†	8.40E-01(2.88E-05)†	9.51E-01(5.92E-05)†	9.93E-01(8.74E-06)
	25	9.43E-01(6.92E-06)†	9.16E-01(3.44E-04)†	9.66E-01(2.62E-05)†	8.38E-01(7.80E-06)†	6.08E-01(2.10E-01)†	9.99E-01(9.29E-07)
	50	9.47E-01(1.01E-05)†	9.27E-01(1.17E-04)†	9.63E-01(1.85E-05)†	8.38E-01(7.81E-06)†	9.41E-01(3.94E-07)†	9.99E-01(4.80E-07)
	200	9.50E-01(1.11E-05)†	9.34E-01(9.40E-05)†	9.64E-01(1.43E-05)†	8.36E-01(1.87E-06)†	9.40E-01(3.61E-07)†	9.99E-01(4.29E-07)
WFG5	5	9.18E-01(1.03E-04)†	9.00E-01(3.35E-04)†	9.51E-01(1.92E-05)†	8.35E-01(2.12E-05)†	9.71E-01(1.79E-05)†	9.82E-01(7.17E-06)
	25	9.35E-01(1.47E-05)†	9.08E-01(1.30E-04)†	9.64E-01(1.10E-05)†	8.21E-01(5.82E-06)†	6.05E-01(2.08E-01)†	9.88E-01(2.28E-06)
	50	9.40E-01(2.19E-05)†	9.09E-01(9.22E-05)†	9.67E-01(5.68E-06)†	8.19E-01(9.54E-06)†	9.36E-01(3.86E-06)†	9.89E-01(7.59E-07)
	200	9.42E-01(1.65E-05)†	9.08E-01(1.27E-04)†	9.69E-01(9.92E-06)†	8.15E-01(7.20E-06)†	9.35E-01(1.81E-07)†	9.90E-01(5.74E-07)
WFG6	5	8.58E-01(1.53E-04)†	8.01E-01(8.74E-04)†	9.19E-01(2.74E-04)†	3.91E-01(9.84E-06)†	9.12E-01(4.02E-04)†	9.49E-01(5.78E-04)
	25	9.08E-01(2.34E-04)†	8.76E-01(3.38E-04)†	9.42E-01(2.22E-04)†	3.89E-01(1.92E-06)†	5.67E-01(1.83E-01)†	9.68E-01(4.66E-04)
	50	9.16E-01(2.84E-04)†	8.90E-01(2.94E-04)†	9.42E-01(2.28E-04)†	3.88E-01(1.97E-06)†	8.93E-01(3.92E-04)†	9.66E-01(4.21E-04)
	200	9.16E-01(2.90E-04)†	9.00E-01(2.82E-04)†	9.45E-01(2.34E-04)†	3.88E-01(1.11E-06)†	8.99E-01(4.08E-04)†	9.71E-01(3.04E-04)
WFG7	5	9.54E-01(4.39E-05)†	8.59E-01(1.36E-03)†	9.61E-01(3.04E-05)†	9.33E-01(3.98E-05)†	9.63E-01(2.40E-05)†	9.87E-01(8.06E-06)
	25	9.46E-01(1.47E-05)†	9.36E-01(9.15E-05)†	9.74E-01(1.65E-05)†	9.55E-01(4.97E-05)†	6.07E-01(2.09E-01)†	9.94E-01(2.47E-06)
	50	9.46E-01(1.35E-05)†	9.37E-01(8.20E-05)†	9.77E-01(1.94E-05)†	9.51E-01(2.91E-05)†	9.39E-01(2.18E-06)†	9.94E-01(3.26E-06)
	200	9.46E-01(9.65E-06)†	9.47E-01(5.28E-05)†	9.81E-01(7.68E-06)†	9.44E-01(6.81E-05)†	9.40E-01(7.95E-07)†	9.95E-01(2.88E-06)
WFG8	5	9.55E-01(1.74E-05)†	8.66E-01(4.93E-04)†	9.62E-01(2.12E-05)†	9.28E-01(5.81E-05)†	9.64E-01(2.89E-05)†	9.86E-01(1.37E-05)
	25	9.46E-01(1.47E-05)†	9.36E-01(9.15E-05)†	9.74E-01(1.65E-05)†	9.54E-01(3.65E-05)†	6.07E-01(2.09E-01)†	9.94E-01(3.54E-06)
	50	9.46E-01(1.00E-05)†	9.40E-01(7.89E-05)†	9.78E-01(1.73E-05)†	9.51E-01(4.30E-05)†	9.39E-01(1.23E-06)†	9.95E-01(1.86E-06)
	200	9.47E-01(7.13E-06)†	9.47E-01(6.55E-05)†	9.80E-01(1.12E-05)†	9.45E-01(5.48E-05)†	9.40E-01(7.76E-07)†	9.94E-01(4.67E-06)
WFG9	5	9.45E-01(7.51E-05)‡	8.21E-01(8.50E-04)†	9.45E-01(1.18E-04)‡	9.56E-01(3.33E-05)‡	9.05E-01(1.07E-03)	9.15E-01(1.03E-03)
	25	9.46E-01(1.47E-05)	9.36E-01(9.15E-05)	9.74E-01(1.65E-05)	9.58E-01(2.93E-05)	5.92E-01(2.00E-01)†	9.44E-01(1.80E-03)
	50	9.53E-01(6.75E-05)	9.19E-01(7.20E-04)	9.67E-01(4.49E-05)	9.57E-01(6.62E-05)	9.01E-01(1.54E-03)†	9.42E-01(1.59E-03)
	200	9.55E-01(6.76E-05)‡	9.31E-01(7.23E-04)	9.73E-01(3.14E-05)‡	9.51E-01(6.47E-05)‡	8.93E-01(1.62E-03)†	9.28E-01(1.38E-03)
+-=		35/14/3	40/4/8	34/12/6	45/5/2	46/2/4	—

TABLE 12
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER OPTIMIZATION ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	9.21E-01(3.60E-04)†	8.86E-01(3.70E-04)†	9.26E-01(4.64E-04)†	1.37E-02(4.54E-04)†	9.71E-01(3.44E-04)†	9.96E-01(2.39E-11)
	25	6.08E-01(2.07E-03)†	9.88E-01(5.08E-05)†	5.87E-01(9.39E-04)†	8.64E-02(3.34E-04)†	9.75E-01(9.87E-04)†	9.96E-01(9.75E-10)
	50	5.44E-01(1.08E-02)†	9.96E-01(3.76E-09)†	4.76E-01(2.17E-03)†	1.09E-01(3.98E-04)†	9.92E-01(1.43E-04)†	9.96E-01(1.07E-07)
	200	5.96E-01(1.93E-02)†	9.96E-01(1.47E-12)‡	4.22E-01(1.66E-03)†	2.16E-01(2.32E-03)†	9.96E-01(3.57E-09)†	9.96E-01(5.56E-10)
F2	5	8.81E-01(5.64E-05)†	9.23E-01(1.58E-05)†	9.36E-01(3.67E-06)†	3.94E-01(7.92E-03)†	9.47E-01(3.57E-06)†	9.58E-01(2.91E-07)
	25	9.38E-01(3.44E-06)†	9.53E-01(6.22E-07)†	9.33E-01(1.67E-05)†	2.80E-01(5.38E-04)†	9.58E-01(6.69E-08)†	9.58E-01(1.15E-09)
	50	9.33E-01(1.66E-05)†	9.55E-01(1.04E-07)†	9.24E-01(1.65E-05)†	2.70E-01(1.19E-04)†	9.58E-01(1.21E-09)†	9.59E-01(2.68E-10)
	200	9.23E-01(5.36E-05)†	9.58E-01(9.94E-09)†	9.17E-01(5.28E-05)†	2.72E-01(2.84E-04)†	9.59E-01(3.37E-10)†	9.59E-01(6.51E-11)
F3	5	7.74E-01(2.33E-04)†	7.49E-01(4.18E-04)†	7.36E-01(3.08E-04)†	3.94E-01(7.92E-03)†	8.40E-01(7.00E-04)†	9.58E-01(2.07E-07)
	25	5.71E-01(6.49E-04)†	9.27E-01(6.77E-05)†	5.54E-01(5.72E-04)†	2.08E-02(1.82E-04)†	8.86E-01(3.76E-03)†	9.56E-01(1.58E-06)
	50	4.61E-01(1.88E-03)†	9.53E-01(1.60E-06)†	4.16E-01(9.24E-04)†	8.53E-02(1.30E-04)†	9.24E-01(2.30E-03)†	9.55E-01(2.12E-04)
	200	4.53E-01(2.72E-03)†	9.57E-01(5.36E-08)‡	3.96E-01(1.42E-03)†	1.45E-01(1.31E-03)†	9.57E-01(8.99E-07)‡	9.56E-01(2.08E-04)
F4	5	8.69E-01(1.37E-04)	8.69E-01(3.12E-04)	9.12E-01(9.36E-05)†	8.97E-01(6.40E-05)†	9.41E-01(2.14E-05)‡	8.29E-01(5.24E-03)
	25	9.10E-01(1.07E-04)†	9.36E-01(1.02E-04)†	8.95E-01(7.57E-05)	9.39E-01(1.24E-05)†	9.58E-01(3.12E-08)‡	8.89E-01(4.17E-04)
	50	8.81E-01(1.28E-04)	9.50E-01(4.41E-05)†	8.83E-01(3.13E-05)	9.44E-01(2.77E-05)†	9.58E-01(7.78E-10)‡	8.86E-01(9.96E-04)
	200	8.65E-01(3.68E-05)	9.58E-01(2.58E-08)†	8.61E-01(9.69E-06)	9.53E-01(1.21E-05)†	9.59E-01(2.36E-10)‡	8.46E-01(3.53E-03)
WFG1	5	9.25E-01(4.37E-05)†	8.42E-01(5.71E-05)†	9.16E-01(7.24E-05)†	7.99E-01(4.05E-04)†	9.25E-01(3.94E-05)†	9.68E-01(2.02E-06)
	25	9.51E-01(1.14E-05)†	8.86E-01(2.85E-05)†	9.47E-01(1.14E-05)†	8.10E-01(1.74E-08)†	9.54E-01(1.21E-05)†	9.70E-01(1.18E-06)
	50	9.59E-01(2.15E-06)†	9.05E-01(2.05E-05)†	9.57E-01(2.65E-06)†	8.10E-01(1.92E-08)†	9.63E-01(2.93E-06)†	9.70E-01(6.52E-07)
	200	9.68E-01(1.42E-07)†	9.30E-01(7.70E-06)†	9.68E-01(1.21E-07)†	8.10E-01(3.44E-08)†	9.71E-01(1.01E-07)‡	9.70E-01(3.50E-07)
WFG2	5	9.33E-01(4.41E-05)†	8.76E-01(3.84E-05)†	9.49E-01(2.43E-06)†	2.41E-01(9.24E-08)†	9.55E-01(1.49E-06)†	9.68E-01(7.02E-09)
	25	9.63E-01(5.44E-07)†	9.28E-01(5.60E-06)†	9.63E-01(1.76E-07)†	2.42E-01(2.11E-09)†	9.67E-01(2.07E-08)†	9.68E-01(2.36E-09)
	50	9.65E-01(6.51E-08)†	9.38E-01(2.35E-06)†	9.65E-01(5.54E-08)†	2.42E-01(1.38E-09)†	9.68E-01(2.64E-09)†	9.68E-01(1.28E-09)
	200	9.65E-01(3.23E-08)†	9.50E-01(4.80E-07)†	9.65E-01(1.53E-08)†	2.42E-01(7.11E-10)†	9.68E-01(2.59E-10)‡	9.68E-01(3.41E-10)
WFG3	5	6.91E-01(1.50E-07)†	6.33E-01(4.28E-05)†	6.83E-01(1.20E-05)†	2.50E-01(1.75E-07)†	6.88E-01(4.64E-05)†	6.99E-01(7.94E-06)
	25	7.03E-01(1.49E-05)‡	6.84E-01(1.10E-05)†	7.11E-01(1.15E-06)‡	2.53E-01(1.65E-08)†	6.94E-01(1.06E-05)‡	6.89E-01(7.10E-04)
	50	7.10E-01(4.63E-06)‡	6.93E-01(7.56E-06)†	7.13E-01(9.10E-07)‡	2.54E-01(9.14E-09)†	6.97E-01(6.42E-06)‡	6.94E-01(4.66E-04)
	200	7.15E-01(7.91E-07)‡	7.03E-01(3.23E-06)‡	7.16E-01(6.77E-07)‡	2.54E-01(2.02E-09)†	6.99E-01(1.52E-06)	6.99E-01(1.88E-06)
WFG4	5	6.45E-01(2.84E-04)†	6.18E-01(1.64E-04)†	6.71E-01(4.74E-05)†	2.92E-01(1.38E-04)†	7.50E-01(3.79E-05)†	8.20E-01(8.99E-07)
	25	7.45E-01(2.25E-05)†	7.00E-01(2.49E-05)†	7.21E-01(3.57E-05)†	3.47E-01(2.85E-05)†	8.28E-01(5.53E-07)†	8.30E-01(2.10E-07)
	50	7.49E-01(2.17E-05)†	7.25E-01(1.48E-05)†	7.31E-01(2.86E-05)†	3.48E-01(9.82E-06)†	8.32E-01(1.89E-08)†	8.32E-01(2.32E-08)
	200	7.63E-01(3.69E-05)†	7.61E-01(6.02E-06)†	7.52E-01(1.58E-05)†	3.47E-01(1.05E-06)†	8.32E-01(7.75E-09)†	8.32E-01(1.28E-08)
WFG5	5	5.76E-01(2.71E-04)†	6.19E-01(3.95E-05)†	6.60E-01(3.54E-05)†	5.15E-01(1.57E-05)†	7.30E-01(1.89E-05)†	7.67E-01(3.91E-06)
	25	7.05E-01(3.01E-05)†	7.00E-01(1.23E-05)†	7.00E-01(2.56E-05)†	5.35E-01(3.14E-06)†	7.85E-01(9.78E-07)†	7.86E-01(1.48E-06)
	50	7.14E-01(7.86E-06)†	7.16E-01(5.54E-06)†	7.08E-01(1.76E-05)†	5.32E-01(2.28E-06)†	7.93E-01(5.47E-07)‡	7.90E-01(4.27E-07)
	200	7.19E-01(1.27E-05)†	7.42E-01(1.40E-06)†	7.21E-01(1.54E-05)†	5.30E-01(1.35E-06)†	7.99E-01(2.88E-08)‡	7.91E-01(1.79E-08)
WFG6	5	5.26E-01(3.36E-04)†	5.17E-01(3.26E-04)†	6.24E-01(5.36E-04)†	1.43E-01(2.46E-06)†	6.71E-01(3.94E-04)†	7.46E-01(5.79E-04)
	25	6.90E-01(1.63E-04)†	6.85E-01(1.95E-05)†	7.11E-01(1.71E-04)†	1.46E-01(1.65E-05)†	7.56E-01(1.77E-03)†	7.61E-01(4.48E-04)
	50	7.25E-01(7.31E-05)†	7.16E-01(1.23E-05)†	7.30E-01(1.04E-04)†	1.48E-01(1.13E-05)†	7.57E-01(1.54E-03)‡	7.37E-01(8.33E-04)
	200	7.51E-01(4.16E-05)†	7.60E-01(5.11E-06)†	7.51E-01(2.74E-05)†	1.49E-01(1.02E-05)†	7.89E-01(9.68E-04)‡	7.71E-01(4.10E-04)
WFG7	5	7.37E-01(5.68E-05)†	5.14E-01(2.37E-04)†	7.16E-01(5.59E-05)†	5.59E-01(2.07E-04)†	7.84E-01(1.42E-05)†	8.24E-01(6.34E-07)
	25	7.66E-01(1.56E-05)†	6.82E-01(2.69E-05)†	7.59E-01(7.21E-06)†	7.23E-01(3.10E-05)†	8.31E-01(1.01E-07)‡	8.27E-01(3.03E-04)
	50	7.73E-01(5.30E-06)†	7.22E-01(1.15E-05)†	7.72E-01(4.30E-06)†	7.50E-01(1.87E-05)†	8.32E-01(1.58E-08)†	8.32E-01(1.73E-08)
	200	7.83E-01(1.16E-06)†	7.73E-01(2.33E-06)†	7.83E-01(2.00E-06)†	7.73E-01(6.17E-06)†	8.33E-01(3.51E-09)†	8.33E-01(1.55E-09)
WFG8	5	7.37E-01(6.29E-05)†	5.05E-01(3.22E-04)†	7.16E-01(3.51E-05)†	5.59E-01(1.78E-04)†	7.85E-01(1.85E-05)†	8.24E-01(9.40E-07)
	25	7.66E-01(1.37E-05)†	6.83E-01(3.27E-05)†	7.60E-01(1.09E-05)†	7.21E-01(3.49E-05)†	8.31E-01(6.00E-08)‡	8.28E-01(2.09E-04)
	50	7.74E-01(6.88E-06)†	7.22E-01(1.99E-05)†	7.72E-01(4.96E-06)†	7.46E-01(1.84E-05)†	8.32E-01(1.69E-08)†	8.32E-01(1.05E-08)
	200	7.83E-01(1.51E-06)†	7.73E-01(3.88E-06)†	7.83E-01(1.35E-06)†	7.73E-01(5.69E-06)†	8.33E-01(1.94E-09)†	8.33E-01(7.29E-10)
WFG9	5	3.56E-01(2.80E-03)†	3.45E-01(4.99E-04)†	4.40E-01(2.57E-05)	5.62E-01(1.35E-02)‡	4.69E-01(6.63E-05)‡	4.44E-01(6.20E-04)
	25	4.24E-01(7.02E-04)	4.10E-01(8.64E-05)‡	5.47E-01(4.91E-03)‡	7.01E-01(6.71E-03)‡	4.92E-01(6.23E-05)‡	4.34E-01(1.31E-03)
	50	4.43E-01(1.19E-03)	4.27E-01(5.03E-04)†	6.27E-01(1.57E-04)‡	6.95E-01(7.71E-03)‡	4.98E-01(6.26E-05)‡	4.37E-01(1.26E-03)
	200	5.03E-01(6.47E-03)‡	4.86E-01(5.21E-03)‡	6.58E-01(1.67E-03)‡	7.16E-01(4.18E-03)‡	5.08E-01(1.12E-04)‡	4.75E-01(2.57E-04)
+-=		43/4/5	46/5/1	42/6/4	48/4/0	33/18/1	9.25E-01(3.02E-03)

TABLE 13
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMPARED ALGORITHMS AT THE LAST GENERATION OF ALL CHANGES ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	3.39E+00(2.13E+00)†	6.28E+00(1.04E+00)†	5.46E+00(1.49E+01)†	3.53E+02(1.73E+03)†	9.26E-01(1.03E+00)†	1.50E-02(1.14E-04)
	25	2.60E+01(3.49E+01)†	7.03E-01(6.81E-03)†	3.14E+01(3.93E+01)†	7.05E+02(1.24E+03)†	1.04E+00(6.01E-01)†	4.34E-02(2.29E-03)
	50	6.46E+01(8.49E+01)†	6.98E-01(4.52E-03)†	7.15E+01(6.59E+01)†	7.79E+02(1.58E+03)†	2.30E-01(3.67E-02)†	2.32E-02(5.63E-04)
	200	1.10E+02(1.25E+02)†	7.71E-01(6.15E-01)†	1.13E+02(1.18E+02)†	8.71E+02(8.01E+02)†	1.96E-02(4.43E-02)‡	2.48E-02(1.26E-01)
F2	5	6.25E-02(2.51E-06)†	1.60E-01(7.52E-05)†	1.60E-01(1.80E-04)†	3.32E+00(1.32E-01)†	7.82E-02(3.20E-05)†	3.96E-02(3.49E-07)
	25	1.86E-01(2.06E-04)†	8.82E-02(4.06E-06)†	2.79E-01(4.13E-04)†	6.21E+00(1.00E-01)†	3.89E-02(6.02E-07)†	3.38E-02(2.22E-07)
	50	2.68E-01(1.73E-04)†	7.08E-02(2.99E-06)†	3.16E-01(1.84E-04)†	6.48E+00(1.08E-01)†	3.35E-02(2.83E-07)†	3.20E-02(9.27E-08)
	200	3.42E-01(3.60E-01)†	4.62E-02(4.61E-02)†	3.53E-01(3.46E-01)†	6.81E+00(6.80E+00)†	3.19E-02(3.25E-02)‡	3.26E-02(3.26E-02)
F3	5	4.30E+00(3.79E+00)†	1.63E+01(7.59E+00)†	9.90E+00(3.24E+01)†	4.99E+02(1.78E+03)†	1.79E+00(3.20E+00)†	8.35E-02(5.89E-03)
	25	4.03E+01(8.69E+01)†	2.60E+00(1.51E-01)†	5.51E+01(2.69E+02)†	8.83E+02(2.56E+03)†	4.19E+00(8.22E+00)†	3.00E-01(1.37E-01)
	50	1.17E+02(3.04E+02)†	2.58E+00(7.76E-02)†	1.33E+02(1.70E+02)†	9.81E+02(1.56E+03)†	5.40E-01(2.01E-01)†	8.62E-02(7.98E-03)
	200	1.99E+02(2.14E+02)†	2.51E+00(2.36E+00)†	2.42E+02(2.71E+02)†	1.10E+03(1.03E+03)†	1.42E-01(3.40E-02)†	3.68E-02(3.14E-02)
F4	5	5.27E-02(4.92E-05)†	5.15E-02(1.10E-04)†	2.27E-01(4.20E-04)†	4.09E-01(7.19E-04)†	7.69E-02(1.37E-04)†	2.09E-02(9.38E-05)
	25	2.89E-01(6.77E-04)†	5.39E-02(2.98E-05)†	4.02E-01(2.79E-04)†	3.90E-01(9.98E-05)†	3.37E-02(5.80E-07)†	2.31E-02(3.55E-06)
	50	4.06E-01(3.20E-04)†	5.57E-02(1.54E-05)†	4.35E-01(1.41E-04)†	3.96E-01(9.39E-05)†	3.09E-02(1.07E-07)†	2.33E-02(1.16E-05)
	200	4.61E-01(4.54E-01)†	4.38E-02(4.42E-02)†	4.62E-01(4.58E-01)†	4.01E-01(4.06E-01)†	3.38E-02(3.36E-02)†	2.53E-02(2.21E-02)
WFG1	5	2.16E-01(1.87E-04)†	4.18E-01(1.66E-04)†	2.16E-01(3.08E-04)†	1.70E+00(1.06E-02)†	2.13E-01(1.59E-04)†	1.93E-01(3.91E-05)
	25	2.71E-01(5.36E-05)†	3.50E-01(8.82E-05)†	2.83E-01(4.29E-05)†	2.00E+00(2.99E-03)†	2.24E-01(2.83E-05)†	1.81E-01(2.00E-05)
	50	2.78E-01(3.18E-05)†	2.94E-01(4.58E-05)†	2.82E-01(2.86E-05)†	2.05E+00(1.29E-03)†	2.02E-01(2.28E-05)†	1.74E-01(1.42E-05)
	200	2.81E-01(2.78E-01)†	2.29E-01(2.23E-01)†	2.82E-01(2.79E-01)†	2.11E+00(2.12E+00)†	1.65E-01(1.65E-01)‡	1.75E-01(1.69E-01)
WFG2	5	5.92E-01(1.98E-04)†	4.25E-01(2.92E-04)‡	6.12E-01(3.75E-04)†	7.10E-01(2.43E-06)†	5.14E-01(2.61E-04)†	5.20E-01(2.39E-04)
	25	6.84E-01(3.58E-04)†	3.12E-01(9.84E-06)‡	6.79E-01(4.56E-04)†	7.11E-01(7.43E-07)†	4.46E-01(5.24E-05)‡	4.54E-01(3.96E-05)
	50	7.18E-01(6.81E-04)†	3.06E-01(9.39E-06)‡	7.05E-01(3.69E-04)†	7.13E-01(6.32E-07)†	4.47E-01(3.00E-05)†	4.42E-01(1.83E-05)
	200	7.32E-01(7.13E-01)†	3.04E-01(2.98E-01)‡	7.35E-01(7.57E-01)†	7.14E-01(7.14E-01)†	4.38E-01(4.36E-01)	4.33E-01(4.34E-01)
WFG3	5	1.48E-02(4.31E-04)‡	1.84E+00(1.61E-02)†	1.49E+00(4.87E-03)†	7.39E-01(2.84E-05)	1.28E+00(2.66E-03)†	7.35E-01(2.34E-02)
	25	1.12E+00(4.49E-02)‡	2.26E+00(2.83E-05)†	1.89E+00(8.36E-04)†	7.52E-01(4.16E-06)‡	1.58E+00(9.13E-04)†	1.48E+00(5.12E-03)
	50	1.62E+00(1.30E-02)†	2.28E+00(7.97E-06)†	1.95E+00(1.99E-04)†	7.57E-01(4.76E-06)‡	1.68E+00(4.45E-04)†	1.55E+00(4.07E-03)
	200	1.95E+00(1.96E+00)†	2.29E+00(2.29E+00)†	1.99E+00(2.00E+00)†	7.61E-01(7.59E-01)‡	1.72E+00(1.72E+00)†	1.66E+00(1.65E+00)
WFG4	5	3.96E-01(7.32E-05)†	4.72E-01(4.56E-04)†	5.36E-01(9.44E-05)†	7.34E-01(3.60E-04)†	3.52E-01(1.12E-04)†	2.88E-01(5.65E-05)
	25	4.58E-01(7.77E-05)†	2.96E-01(2.34E-05)†	5.10E-01(9.25E-05)†	6.79E-01(2.59E-04)†	2.24E-01(1.04E-05)	2.24E-01(9.45E-06)
	50	4.78E-01(4.13E-05)†	2.68E-01(1.15E-05)†	5.04E-01(6.86E-05)†	6.61E-01(1.19E-04)†	2.08E-01(6.93E-06)‡	2.13E-01(3.17E-06)
	200	4.92E-01(4.75E-01)†	2.37E-01(2.33E-01)†	4.77E-01(4.86E-01)†	6.89E-01(6.94E-01)†	2.19E-01(2.18E-01)†	2.12E-01(2.13E-01)
WFG5	5	4.21E-01(8.09E-05)†	5.50E-01(2.85E-04)†	6.05E-01(1.30E-04)†	1.33E+00(2.40E-04)†	3.99E-01(4.97E-05)†	3.31E-01(4.01E-05)
	25	4.67E-01(1.18E-04)†	3.49E-01(5.70E-05)†	5.29E-01(7.95E-05)†	1.29E+00(8.98E-05)†	2.81E-01(1.06E-05)†	2.74E-01(1.06E-05)
	50	4.80E-01(8.30E-05)†	3.03E-01(2.26E-05)†	5.10E-01(3.82E-05)†	1.28E+00(2.37E-04)†	2.58E-01(8.89E-06)‡	2.62E-01(7.01E-06)
	200	4.87E-01(5.00E-01)†	2.61E-01(2.60E-01)†	4.93E-01(4.89E-01)†	1.26E+00(1.26E+00)†	2.49E-01(2.50E-01)‡	2.56E-01(2.57E-01)
WFG6	5	4.83E-01(2.05E-03)†	6.26E-01(1.85E-03)†	6.68E-01(2.13E-03)†	1.26E+00(1.17E-04)†	5.19E-01(1.75E-03)†	3.66E-01(1.20E-03)
	25	5.08E-01(5.82E-04)†	3.13E-01(3.14E-05)	5.34E-01(6.67E-04)†	1.26E+00(3.02E-04)†	3.42E-01(7.66E-03)	3.12E-01(1.36E-03)
	50	4.99E-01(1.87E-04)†	2.70E-01(2.38E-05)‡	5.09E-01(4.06E-04)†	1.26E+00(1.76E-04)†	3.32E-01(6.08E-03)†	3.05E-01(1.20E-03)
	200	4.89E-01(4.94E-01)†	2.31E-01(2.22E-01)‡	5.04E-01(4.81E-01)†	1.27E+00(1.27E+00)†	2.56E-01(2.76E-01)†	3.24E-01(3.78E-01)
WFG7	5	4.77E-01(1.15E-04)†	6.81E-01(1.68E-03)†	5.56E-01(2.33E-04)†	7.91E-01(9.25E-04)†	3.27E-01(6.74E-05)†	2.55E-01(1.36E-05)
	25	5.16E-01(6.90E-05)†	3.61E-01(4.13E-05)†	5.34E-01(3.07E-05)†	6.53E-01(7.00E-04)†	2.09E-01(3.98E-06)†	2.05E-01(1.06E-05)
	50	5.13E-01(2.76E-05)†	3.23E-01(6.00E-05)†	5.18E-01(4.50E-05)†	7.06E-01(3.81E-04)†	2.00E-01(5.23E-06)‡	2.03E-01(6.24E-06)
	200	5.04E-01(4.99E-01)†	2.64E-01(2.75E-01)†	5.03E-01(5.05E-01)†	4.84E-01(6.37E-01)†	2.31E-01(2.26E-01)†	2.31E-01(2.28E-01)
WFG8	5	4.79E-01(1.69E-04)†	7.07E-01(2.73E-03)†	5.56E-01(1.91E-04)†	7.81E-01(1.22E-03)†	3.27E-01(9.38E-05)†	2.53E-01(4.19E-05)
	25	5.12E-01(5.47E-05)†	3.59E-01(1.08E-04)†	5.32E-01(9.50E-05)†	6.50E-01(5.64E-04)†	2.09E-01(6.16E-06)†	2.05E-01(5.90E-06)
	50	5.15E-01(4.31E-05)†	3.25E-01(5.71E-05)†	5.18E-01(3.82E-05)†	7.00E-01(3.03E-04)†	2.00E-01(5.78E-06)	2.03E-01(5.58E-06)
	200	4.97E-01(4.95E-01)†	2.78E-01(2.74E-01)†	5.04E-01(4.99E-01)†	5.36E-01(5.37E-01)‡	2.27E-01(2.26E-01)†	2.35E-01(2.33E-01)
WFG9	5	9.07E-01(1.04E-02)	8.38E-01(4.19E-04)‡	1.11E+00(2.00E-04)†	9.00E-01(2.84E-03)‡	9.74E-01(2.26E-04)†	9.25E-01(3.02E-03)
	25	1.05E+00(7.24E-03)†	8.46E-01(1.10E-04)‡	9.54E-01(1.70E-02)†	8.49E-01(5.64E-04)	9.23E-01(3.52E-04)†	8.70E-01(2.34E-03)
	50	1.07E+00(6.78E-03)†	8.37E-01(1.56E-03)‡	8.06E-01(4.32E-04)‡	8.56E-01(3.78E-04)	8.98E-01(2.22E-04)†	8.67E-01(1.14E-03)
	200	1.13E+00(7.76E-01)†	8.47E-01(8.37E-01)‡	7.70E-01(7.11E-01)‡	7.51E-01(7.28E-01)‡	8.72E-01(9.14E-01)‡	9.35E-01(8.70E-01)
+-=		49/2/1	41/10/1	50/2/0	44/5/3	38/9/5	—

TABLE 14
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMPARED ALGORITHMS AT THE LAST GENERATION OF ALL CHANGES ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	7.62E-01(4.79E-04)†	8.44E-01(2.29E-04)†	7.53E-01(6.87E-04)†	9.50E-01(2.96E-04)†	8.19E-01(7.65E-04)†	1.00E+00(7.69E-11)
	25	9.53E-01(1.47E-04)†	9.82E-01(1.68E-05)†	9.56E-01(1.29E-04)†	9.61E-01(2.91E-04)†	9.84E-01(4.23E-05)†	9.96E-01(1.99E-05)
	50	9.93E-01(2.97E-05)†	9.95E-01(3.93E-06)†	9.94E-01(2.06E-05)†	9.85E-01(1.96E-04)†	9.96E-01(7.37E-06)†	1.00E+00(9.79E-07)
	200	1.00E+00(6.93E-10)†	1.00E+00(3.86E-11)‡	1.00E+00(3.41E-09)†	9.99E-01(7.00E-06)†	9.99E-01(1.22E-06)†	1.00E+00(2.39E-08)
F2	5	9.10E-01(1.08E-04)†	9.99E-01(1.06E-06)†	9.99E-01(1.26E-06)†	9.20E-01(2.32E-03)†	9.99E-01(9.23E-07)†	9.99E-01(6.29E-06)
	25	9.99E-01(9.38E-07)†	1.00E+00(0.00E+00)‡	1.00E+00(3.55E-11)	8.35E-01(4.90E-04)†	1.00E+00(3.61E-12)	1.00E+00(5.12E-08)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(1.37E-12)	7.49E-01(1.26E-03)†	1.00E+00(3.43E-12)†	1.00E+00(7.74E-14)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	5.89E-01(7.80E-04)†	1.00E+00(5.06E-12)	1.00E+00(4.14E-12)
F3	5	8.65E-01(1.73E-04)†	9.51E-01(9.82E-05)†	8.44E-01(3.20E-04)†	9.04E-01(7.74E-04)†	9.09E-01(7.89E-04)†	9.99E-01(8.16E-06)
	25	9.84E-01(3.59E-05)†	1.00E+00(3.07E-08)‡	9.83E-01(3.01E-05)†	8.70E-01(4.89E-04)†	9.98E-01(3.35E-06)	9.98E-01(2.87E-06)
	50	9.98E-01(1.89E-06)‡	1.00E+00(0.00E+00)‡	9.98E-01(3.92E-06)‡	8.92E-01(1.09E-03)†	1.00E+00(1.64E-07)‡	9.97E-01(3.30E-04)
	200	1.00E+00(1.48E-10)‡	1.00E+00(0.00E+00)‡	1.00E+00(3.38E-12)‡	8.12E-01(1.28E-03)†	1.00E+00(4.05E-08)‡	9.97E-01(3.23E-04)
F4	5	8.21E-01(3.46E-04)‡	8.37E-01(1.11E-03)‡	9.69E-01(2.58E-04)‡	9.45E-01(3.21E-04)‡	9.97E-01(1.65E-05)‡	7.48E-01(6.87E-03)
	25	9.76E-01(9.00E-05)‡	9.62E-01(4.15E-04)‡	9.92E-01(1.09E-04)‡	9.71E-01(4.45E-05)‡	9.99E-01(6.21E-06)‡	7.17E-01(8.45E-04)
	50	9.99E-01(1.09E-05)‡	9.90E-01(1.29E-04)‡	1.00E+00(2.28E-12)‡	9.75E-01(7.13E-05)‡	1.00E+00(2.51E-12)‡	7.19E-01(1.97E-03)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.79E-01(2.65E-05)‡	1.00E+00(2.12E-12)‡	7.71E-01(6.92E-03)
WFG1	5	6.71E-01(3.67E-04)†	6.27E-01(2.85E-04)†	6.16E-01(3.62E-04)†	4.64E-01(3.15E-04)†	6.92E-01(2.99E-04)†	9.39E-01(1.82E-04)
	25	8.26E-01(1.37E-04)†	6.05E-01(6.46E-04)†	8.18E-01(1.91E-04)†	5.12E-01(2.60E-04)†	7.88E-01(3.69E-04)†	9.55E-01(3.01E-05)
	50	8.91E-01(7.17E-05)†	5.70E-01(9.17E-04)†	8.84E-01(1.09E-04)†	5.30E-01(1.08E-04)†	8.67E-01(1.60E-04)†	9.72E-01(1.90E-05)
	200	9.71E-01(8.17E-06)†	5.42E-01(5.45E-05)†	9.71E-01(1.26E-05)†	5.31E-01(3.30E-05)†	9.60E-01(1.50E-05)†	9.75E-01(1.72E-05)
WFG2	5	7.60E-01(2.19E-04)†	6.29E-01(2.33E-04)†	8.19E-01(2.03E-04)†	1.82E-01(3.11E-06)†	8.53E-01(1.89E-04)†	9.95E-01(3.37E-05)
	25	9.43E-01(6.74E-05)†	5.65E-01(1.36E-04)†	9.65E-01(2.06E-05)†	1.87E-01(1.40E-07)†	9.58E-01(1.84E-05)†	9.84E-01(7.96E-06)
	50	9.80E-01(1.17E-05)	5.64E-01(3.81E-05)†	9.83E-01(6.13E-06)‡	1.88E-01(1.25E-07)†	9.82E-01(2.02E-06)‡	9.54E-01(1.97E-02)
	200	9.96E-01(3.92E-07)‡	5.70E-01(1.39E-05)†	9.95E-01(3.45E-07)‡	1.88E-01(6.74E-07)†	9.76E-01(2.65E-07)‡	9.74E-01(3.13E-07)
WFG3	5	9.99E-01(5.43E-07)‡	9.71E-01(1.93E-04)†	9.47E-01(8.61E-05)†	4.77E-01(8.18E-06)†	9.91E-01(8.26E-05)†	9.98E-01(2.30E-05)
	25	9.97E-01(3.79E-06)‡	9.85E-01(1.49E-04)	9.87E-01(7.69E-06)	4.79E-01(1.20E-06)†	9.90E-01(6.51E-05)†	9.74E-01(1.39E-03)
	50	9.97E-01(8.93E-07)‡	9.87E-01(1.21E-04)†	9.93E-01(2.17E-06)‡	4.79E-01(6.80E-07)†	9.95E-01(1.76E-05)‡	9.89E-01(8.96E-04)
	200	9.99E-01(5.83E-08)‡	9.94E-01(2.66E-05)‡	9.98E-01(1.10E-07)‡	4.81E-01(2.19E-07)†	9.34E-01(6.21E-02)†	9.92E-01(1.29E-03)
WFG4	5	9.22E-01(2.84E-04)†	9.63E-01(1.55E-04)†	9.82E-01(9.76E-06)†	8.46E-01(5.30E-05)†	9.92E-01(8.82E-06)†	1.00E+00(6.82E-08)
	25	1.00E+00(8.80E-08)†	9.58E-01(3.78E-05)†	9.95E-01(2.09E-07)†	8.55E-01(7.27E-07)†	1.00E+00(6.68E-08)†	1.00E+00(3.18E-08)
	50	1.00E+00(6.37E-08)†	9.65E-01(2.76E-05)†	9.97E-01(1.27E-07)†	8.57E-01(5.23E-07)†	1.00E+00(3.75E-10)†	1.00E+00(8.66E-12)
	200	1.00E+00(9.75E-09)†	9.75E-01(8.59E-06)†	9.99E-01(1.33E-08)†	8.57E-01(2.18E-07)†	1.00E+00(1.23E-09)†	1.00E+00(7.27E-12)
WFG5	5	8.89E-01(1.24E-04)†	9.60E-01(7.27E-05)†	9.72E-01(4.18E-06)†	8.37E-01(2.89E-05)†	9.84E-01(3.58E-06)†	9.86E-01(9.88E-07)
	25	9.86E-01(7.21E-07)	9.56E-01(1.84E-05)†	9.82E-01(2.43E-06)†	8.47E-01(3.40E-06)†	9.87E-01(7.13E-07)‡	9.86E-01(6.81E-07)
	50	9.87E-01(3.37E-09)‡	9.59E-01(1.29E-05)†	9.84E-01(2.14E-06)†	8.48E-01(6.46E-06)†	9.88E-01(4.61E-07)‡	9.87E-01(1.44E-07)
	200	9.88E-01(6.56E-08)‡	9.67E-01(5.71E-06)†	9.87E-01(1.00E-07)†	8.52E-01(5.69E-06)†	9.90E-01(4.70E-08)‡	9.87E-01(6.54E-08)
WFG6	5	8.90E-01(1.54E-04)†	9.16E-01(1.76E-04)†	9.68E-01(6.05E-05)†	3.83E-01(4.15E-06)†	9.69E-01(5.24E-05)†	9.75E-01(8.72E-05)
	25	9.85E-01(1.61E-05)‡	9.47E-01(1.16E-05)†	9.87E-01(1.61E-05)‡	3.90E-01(3.37E-06)†	9.78E-01(1.79E-04)	9.74E-01(5.22E-04)
	50	9.91E-01(4.94E-06)‡	9.56E-01(1.60E-05)	9.91E-01(8.12E-06)‡	3.91E-01(1.22E-06)†	9.79E-01(1.45E-04)‡	9.36E-01(2.33E-03)
	200	9.96E-01(2.55E-06)‡	9.68E-01(6.94E-06)†	9.95E-01(2.91E-06)‡	3.90E-01(2.91E-07)†	9.87E-01(8.90E-05)‡	9.81E-01(3.60E-05)
WFG7	5	9.97E-01(3.34E-06)†	9.56E-01(6.06E-05)†	9.89E-01(3.26E-06)†	9.90E-01(2.02E-05)†	9.99E-01(8.04E-07)‡	9.98E-01(1.23E-06)
	25	1.00E+00(1.91E-07)†	9.74E-01(9.32E-06)†	9.97E-01(1.50E-07)†	9.94E-01(2.08E-06)†	1.00E+00(1.77E-08)‡	9.90E-01(9.03E-04)
	50	1.00E+00(4.30E-08)†	9.77E-01(1.07E-05)†	9.99E-01(4.36E-08)†	9.96E-01(2.43E-06)†	1.00E+00(4.77E-10)†	1.00E+00(2.65E-12)
	200	1.00E+00(1.99E-10)†	9.85E-01(7.19E-06)†	1.00E+00(8.89E-10)†	9.92E-01(9.48E-06)†	1.00E+00(1.80E-09)†	1.00E+00(3.07E-12)
WFG8	5	9.97E-01(4.52E-06)†	9.59E-01(6.27E-05)†	9.89E-01(5.11E-06)†	9.89E-01(4.37E-05)†	9.99E-01(1.65E-06)	9.99E-01(1.16E-06)
	25	9.99E-01(1.75E-07)†	9.73E-01(1.21E-05)†	9.97E-01(1.92E-07)†	9.93E-01(3.07E-06)†	1.00E+00(2.03E-08)‡	9.94E-01(6.24E-04)
	50	1.00E+00(3.86E-08)†	9.77E-01(5.63E-06)†	9.99E-01(5.48E-08)†	9.95E-01(2.42E-06)†	1.00E+00(5.92E-08)†	1.00E+00(1.87E-12)
	200	1.00E+00(3.60E-10)†	9.85E-01(7.09E-06)†	1.00E+00(1.07E-09)†	9.92E-01(1.08E-05)†	1.00E+00(9.93E-10)†	1.00E+00(3.18E-12)
WFG9	5	7.26E-01(8.41E-03)†	8.13E-01(1.25E-03)†	8.80E-01(6.64E-06)‡	9.42E-01(1.52E-03)‡	8.83E-01(1.34E-05)‡	8.34E-01(2.50E-03)
	25	8.29E-01(3.05E-03)‡	8.53E-01(1.40E-04)‡	9.28E-01(7.84E-04)‡	9.74E-01(6.27E-04)‡	8.87E-01(1.49E-05)‡	7.92E-01(3.56E-03)
	50	8.51E-01(2.17E-03)‡	8.60E-01(1.82E-04)‡	9.53E-01(6.16E-06)‡	9.72E-01(5.50E-04)‡	8.89E-01(1.24E-05)‡	7.97E-01(3.31E-03)
	200	8.96E-01(1.10E-03)‡	8.82E-01(7.34E-04)‡	9.57E-01(1.78E-04)‡	9.79E-01(4.02E-04)‡	8.92E-01(1.87E-05)‡	8.58E-01(5.17E-04)
+-=		29/21/2	35/15/2	44/8/0	48/4/0	26/21/5	—

TABLE 15
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMPARED ALGORITHMS AT THE LAST GENERATION OF ALL CHANGES ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	0.00E+00(0.00E+00)†	5.55E-01(3.14E-03)‡	0.00E+00(0.00E+00)†	1.37E-02(4.54E-04)†	3.66E-01(3.80E-03)	3.60E-01(1.38E-02)
	25	1.28E-01(1.92E-02)†	9.88E-01(2.40E-05)‡	4.98E-02(8.67E-03)†	0.00E+00(0.00E+00)†	7.62E-01(4.80E-03)†	8.14E-01(5.04E-03)
	50	4.05E-01(7.48E-03)†	9.96E-01(2.90E-08)‡	3.90E-01(4.57E-03)†	0.00E+00(0.00E+00)†	9.82E-01(2.69E-04)†	9.95E-01(1.06E-05)
	200	6.30E-01(4.99E-03)†	9.96E-01(2.29E-12)‡	4.46E-01(2.42E-03)†	6.54E-02(1.65E-03)†	9.96E-01(4.44E-09)‡	9.96E-01(1.54E-07)
F2	5	8.63E-01(5.29E-04)†	9.28E-01(2.09E-05)†	9.13E-01(2.06E-05)†	2.78E-01(3.77E-03)†	9.48E-01(1.25E-06)†	9.54E-01(1.08E-06)
	25	9.20E-01(1.02E-04)†	9.53E-01(6.17E-07)†	9.28E-01(2.68E-05)†	2.95E-01(6.94E-04)†	9.58E-01(3.95E-09)†	9.58E-01(1.32E-08)
	50	9.25E-01(7.13E-05)†	9.55E-01(7.03E-08)†	9.23E-01(2.63E-05)†	2.72E-01(2.38E-04)†	9.58E-01(1.41E-09)†	9.58E-01(9.93E-10)
	200	9.21E-01(9.92E-05)†	9.58E-01(1.32E-08)†	9.16E-01(5.86E-05)†	2.67E-01(5.88E-05)†	9.59E-01(3.39E-10)†	9.59E-01(3.27E-10)
F3	5	0.00E+00(0.00E+00)†	3.79E-01(2.61E-03)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	1.72E-01(3.67E-03)	1.64E-01(1.35E-02)
	25	1.28E-02(1.48E-03)†	9.14E-01(1.41E-04)‡	1.85E-02(2.52E-03)†	0.00E+00(0.00E+00)†	4.97E-01(8.85E-03)	4.98E-01(2.03E-02)
	50	3.51E-01(3.99E-03)†	9.51E-01(4.08E-06)	3.33E-01(5.48E-03)†	0.00E+00(0.00E+00)†	7.36E-01(1.87E-02)†	9.21E-01(4.63E-03)
	200	4.32E-01(2.20E-03)†	9.57E-01(3.23E-08)†	3.98E-01(1.65E-03)†	3.71E-02(1.75E-03)†	9.57E-01(8.00E-07)†	9.58E-01(6.20E-07)
F4	5	5.96E-01(2.45E-04)†	9.23E-01(2.53E-05)	8.71E-01(7.99E-05)†	9.00E-01(6.83E-05)†	9.34E-01(1.44E-05)‡	9.13E-01(7.25E-04)
	25	8.38E-01(4.48E-05)†	9.50E-01(2.20E-05)‡	8.90E-01(5.87E-05)†	9.46E-01(3.71E-05)‡	9.58E-01(3.55E-08)‡	8.91E-01(2.32E-03)
	50	8.66E-01(2.38E-05)†	9.55E-01(9.45E-06)‡	8.82E-01(1.91E-05)†	9.51E-01(1.69E-05)‡	9.58E-01(3.50E-09)‡	9.09E-01(2.16E-04)
	200	8.63E-01(2.59E-05)†	9.58E-01(2.07E-08)‡	8.60E-01(1.12E-05)†	9.54E-01(2.74E-07)‡	9.59E-01(2.69E-10)‡	9.08E-01(5.07E-04)
WFG1	5	8.58E-01(8.92E-05)†	7.42E-01(7.79E-05)†	8.40E-01(9.80E-05)†	8.07E-01(2.70E-06)†	8.48E-01(6.14E-05)†	8.71E-01(3.34E-05)
	25	9.29E-01(1.87E-05)†	8.43E-01(2.45E-05)†	9.26E-01(1.85E-05)†	8.10E-01(1.95E-08)†	9.32E-01(1.83E-05)†	9.45E-01(9.73E-06)
	50	9.52E-01(4.20E-06)†	8.78E-01(1.40E-05)†	9.51E-01(4.47E-06)†	8.10E-01(9.22E-09)†	9.58E-01(2.70E-06)†	9.62E-01(1.22E-06)
	200	9.68E-01(1.19E-07)†	9.21E-01(7.92E-06)†	9.68E-01(5.49E-08)†	8.10E-01(4.83E-08)†	9.71E-01(4.92E-08)	9.71E-01(7.19E-08)
WFG2	5	9.05E-01(1.32E-04)†	8.32E-01(6.70E-05)†	9.26E-01(1.68E-05)†	2.39E-01(9.44E-07)†	9.34E-01(1.37E-05)†	9.51E-01(4.80E-06)
	25	9.61E-01(6.50E-07)†	9.23E-01(2.60E-06)†	9.62E-01(2.73E-07)†	2.42E-01(7.66E-09)†	9.66E-01(5.96E-08)†	9.67E-01(3.26E-08)
	50	9.65E-01(6.74E-08)†	9.35E-01(1.17E-06)†	9.64E-01(6.21E-08)†	2.42E-01(1.44E-09)†	9.68E-01(4.79E-09)†	9.68E-01(3.60E-09)
	200	9.65E-01(2.18E-08)†	9.48E-01(3.60E-07)†	9.65E-01(2.86E-08)†	2.42E-01(9.66E-10)†	9.68E-01(1.85E-10)	9.68E-01(2.77E-10)
WFG3	5	6.45E-01(5.06E-05)‡	5.58E-01(2.24E-04)†	6.37E-01(3.03E-05)	2.46E-01(7.24E-06)†	6.19E-01(5.36E-05)†	6.35E-01(4.68E-05)
	25	7.00E-01(8.43E-06)‡	6.66E-01(1.82E-05)†	7.07E-01(2.56E-06)‡	2.53E-01(2.16E-08)†	6.79E-01(8.94E-06)	6.79E-01(2.45E-05)
	50	7.09E-01(5.92E-06)‡	6.80E-01(4.45E-06)†	7.13E-01(1.04E-06)‡	2.53E-01(8.06E-09)†	6.89E-01(9.13E-06)	6.88E-01(1.97E-05)
	200	7.16E-01(9.98E-07)‡	6.94E-01(1.42E-06)†	7.16E-01(5.32E-07)‡	2.54E-01(1.82E-09)†	7.00E-01(2.58E-06)‡	6.97E-01(4.97E-06)
WFG4	5	6.57E-01(1.12E-04)†	5.83E-01(2.82E-04)†	6.62E-01(5.36E-05)†	3.09E-01(6.43E-05)†	7.48E-01(4.35E-05)†	8.08E-01(9.49E-06)
	25	7.46E-01(2.78E-05)†	6.91E-01(5.76E-05)†	7.25E-01(2.48E-05)†	3.49E-01(1.89E-05)†	8.27E-01(3.08E-06)†	8.30E-01(6.27E-08)
	50	7.51E-01(2.01E-05)†	7.18E-01(1.74E-05)†	7.32E-01(2.04E-05)†	3.50E-01(2.05E-05)†	8.32E-01(6.62E-08)†	8.32E-01(4.07E-08)
	200	7.65E-01(1.67E-05)†	7.55E-01(9.14E-06)†	7.54E-01(3.71E-05)†	3.48E-01(1.66E-06)†	8.32E-01(1.08E-08)†	8.32E-01(8.23E-09)
WFG5	5	6.67E-01(3.04E-04)†	6.07E-01(7.81E-05)†	6.47E-01(4.89E-05)†	5.29E-01(5.17E-06)†	7.77E-01(1.28E-05)†	7.79E-01(1.04E-05)
	25	7.17E-01(3.26E-05)†	6.93E-01(8.21E-06)†	7.01E-01(2.17E-05)†	5.36E-01(2.30E-06)†	8.02E-01(2.72E-07)†	8.03E-01(1.60E-06)
	50	7.21E-01(1.81E-05)†	7.11E-01(4.69E-06)†	7.11E-01(2.58E-05)†	5.33E-01(1.75E-06)†	8.04E-01(4.02E-08)†	8.04E-01(6.46E-08)
	200	7.28E-01(2.02E-05)†	7.39E-01(2.18E-06)†	7.23E-01(1.69E-05)†	5.32E-01(1.52E-06)†	8.04E-01(1.88E-08)†	8.04E-01(2.64E-08)
WFG6	5	5.79E-01(1.90E-04)†	4.96E-01(2.17E-04)†	6.21E-01(1.26E-04)†	1.46E-01(2.67E-06)†	6.80E-01(2.14E-04)†	7.66E-01(1.83E-04)
	25	7.14E-01(5.63E-05)†	6.77E-01(1.25E-05)†	7.31E-01(1.99E-05)†	1.53E-01(3.33E-07)†	8.16E-01(6.02E-06)†	8.24E-01(2.18E-06)
	50	7.43E-01(1.30E-05)†	7.10E-01(1.30E-05)†	7.45E-01(1.68E-05)†	1.54E-01(2.22E-08)†	8.29E-01(3.79E-07)†	8.30E-01(2.22E-07)
	200	7.61E-01(1.53E-05)†	7.56E-01(5.90E-06)†	7.60E-01(1.31E-05)†	1.55E-01(1.56E-08)†	8.32E-01(2.49E-08)†	8.32E-01(5.14E-08)
WFG7	5	7.14E-01(5.28E-05)†	4.72E-01(2.58E-04)†	6.81E-01(4.98E-05)†	5.79E-01(7.21E-05)†	7.67E-01(1.84E-05)†	8.01E-01(5.14E-06)
	25	7.65E-01(1.25E-05)†	6.58E-01(6.81E-05)†	7.58E-01(1.46E-05)†	7.29E-01(1.26E-05)†	8.29E-01(1.56E-07)†	8.30E-01(7.57E-08)
	50	7.74E-01(4.37E-06)†	7.11E-01(2.03E-05)†	7.71E-01(5.70E-06)†	7.49E-01(2.89E-05)†	8.32E-01(3.90E-08)†	8.32E-01(2.89E-08)
	200	7.84E-01(2.02E-06)†	7.68E-01(4.32E-06)†	7.83E-01(1.05E-06)†	7.72E-01(9.54E-06)†	8.33E-01(1.85E-09)†	8.33E-01(2.46E-09)
WFG8	5	7.11E-01(4.50E-05)†	4.73E-01(1.96E-04)†	6.81E-01(4.83E-05)†	5.75E-01(1.69E-04)†	7.70E-01(1.27E-05)†	8.01E-01(6.09E-06)
	25	7.65E-01(1.25E-05)†	6.58E-01(6.81E-05)†	7.58E-01(1.46E-05)†	7.28E-01(2.73E-05)†	8.29E-01(9.57E-08)†	8.30E-01(1.80E-07)
	50	7.75E-01(3.40E-06)†	7.12E-01(1.63E-05)†	7.71E-01(5.73E-06)†	7.49E-01(2.40E-05)†	8.32E-01(2.68E-08)†	8.32E-01(2.65E-08)
	200	7.84E-01(1.87E-06)†	7.68E-01(4.94E-06)†	7.84E-01(9.69E-07)†	7.72E-01(7.30E-06)†	8.33E-01(3.56E-09)†	8.33E-01(2.17E-09)
WFG9	5	7.13E-01(8.80E-05)‡	4.00E-01(1.63E-03)†	6.52E-01(4.33E-04)‡	6.48E-01(1.77E-04)‡	6.02E-01(1.33E-02)	6.06E-01(1.03E-02)
	25	7.65E-01(1.25E-05)	6.58E-01(6.81E-05)	7.58E-01(1.46E-05)	7.50E-01(1.03E-05)	7.11E-01(1.55E-02)	6.93E-01(1.60E-02)
	50	7.64E-01(1.02E-05)	7.09E-01(7.41E-03)	7.66E-01(8.58E-06)	7.57E-01(1.26E-05)	6.56E-01(1.37E-02)	6.76E-01(1.62E-02)
	200	7.78E-01(7.26E-06)‡	7.57E-01(6.08E-03)‡	7.81E-01(2.62E-06)‡	7.55E-01(9.93E-06)‡	6.65E-01(1.49E-02)‡	6.42E-01(1.41E-02)
+-=		44/6/2	38/10/4	44/5/3	45/5/2	35/7/10	—

TABLE 16
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMPARED ALGORITHMS AT THE LAST GENERATION OF ALL CHANGES ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.91E+02(8.26E+01)†	1.17E+01(4.57E+00)‡	2.03E+02(8.19E+01)†	5.79E+02(3.58E+03)†	3.21E+01(1.06E+01)‡	3.73E+01(7.85E+01)
	25	9.29E+01(5.06E+01)†	1.89E+00(3.46E-01)‡	1.17E+02(4.25E+02)†	7.27E+02(3.15E+03)†	5.98E+00(2.32E+00)†	3.27E+00(1.57E+00)
	50	8.08E+01(8.68E+01)†	1.78E+00(3.64E-01)†	9.10E+01(5.14E+01)†	7.93E+02(9.04E+02)†	7.28E-01(1.48E-01)†	2.11E-01(2.76E-02)
	200	1.12E+02(1.20E+02)†	1.78E+00(1.93E+00)†	1.09E+02(1.28E+02)†	8.69E+02(8.73E+02)†	4.69E-02(3.44E-02)†	1.31E-02(1.36E-02)
F2	5	3.81E-01(3.26E-03)†	1.72E-01(5.96E-05)†	3.22E-01(3.10E-04)†	3.96E+00(2.44E-01)†	1.03E-01(2.65E-05)†	7.54E-02(1.12E-05)
	25	2.59E-01(4.72E-04)†	8.75E-02(9.81E-06)†	2.95E-01(2.47E-04)†	6.10E+00(7.08E-02)†	4.44E-02(1.96E-06)†	4.18E-02(1.38E-06)
	50	2.86E-01(2.63E-04)†	7.14E-02(6.72E-06)†	3.22E-01(1.84E-04)†	6.53E+00(9.92E-02)†	3.58E-02(4.83E-07)†	3.53E-02(3.95E-07)
	200	3.18E-01(3.32E-01)†	4.63E-02(4.51E-02)†	3.63E-01(3.63E-01)†	6.70E+00(6.47E+00)†	3.25E-02(3.24E-02)	3.24E-02(3.15E-02)
F3	5	4.07E+02(3.96E+02)†	2.71E+01(1.74E+01)‡	4.32E+02(6.44E+02)†	7.91E+02(2.79E+03)†	8.14E+01(8.46E+01)‡	9.13E+01(5.38E+02)
	25	1.97E+02(1.94E+02)†	3.92E+00(3.28E+00)‡	2.27E+02(6.93E+02)†	9.33E+02(2.90E+03)†	1.71E+01(1.82E+01)†	1.25E+01(2.41E+01)
	50	1.60E+02(1.19E+02)†	4.02E+00(2.05E+00)†	1.64E+02(1.58E+02)†	1.03E+03(2.65E+03)†	3.55E+00(3.33E+00)†	8.47E-01(3.97E-01)
	200	2.52E+02(2.38E+02)†	2.94E+00(2.57E+00)†	2.38E+02(2.61E+02)†	1.11E+03(1.06E+03)†	1.47E-01(5.48E-02)†	9.65E-02(3.34E-01)
F4	5	9.24E-01(1.55E-03)†	1.02E-01(1.23E-04)	4.98E-01(4.35E-04)†	1.08E-01(1.48E-03)	1.67E-01(1.28E-04)†	9.93E-02(2.42E-04)
	25	4.12E-01(2.25E-04)†	5.93E-02(3.22E-05)†	4.12E-01(2.56E-04)†	1.54E-02(1.13E-05)‡	4.06E-02(1.86E-06)†	3.20E-02(1.42E-05)
	50	4.22E-01(2.35E-04)†	5.69E-02(9.84E-06)†	4.34E-01(1.16E-04)†	1.28E-02(3.06E-06)‡	3.24E-02(3.77E-07)†	2.77E-02(1.96E-06)
	200	4.50E-01(4.46E-01)†	4.20E-02(4.53E-02)†	4.66E-01(4.80E-01)†	1.08E-02(1.04E-02)‡	3.31E-02(3.36E-02)†	2.78E-02(2.64E-02)
WFG1	5	4.82E-01(2.93E-04)†	6.41E-01(1.47E-03)†	5.14E-01(3.43E-04)†	1.25E+00(1.97E-03)†	4.30E-01(1.49E-04)†	3.81E-01(9.24E-05)
	25	3.23E-01(1.08E-04)†	3.87E-01(1.82E-04)†	3.30E-01(1.33E-04)†	1.24E+00(4.16E-04)†	2.55E-01(9.73E-05)†	2.05E-01(2.22E-03)
	50	2.89E-01(3.96E-05)†	3.13E-01(8.66E-05)†	2.94E-01(5.53E-05)†	1.26E+00(1.58E-04)†	2.05E-01(2.58E-05)†	1.44E-01(4.22E-03)
	200	2.80E-01(2.78E-01)†	2.33E-01(2.28E-01)†	2.85E-01(2.88E-01)†	1.28E+00(1.26E+00)†	1.70E-01(1.59E-01)‡	1.73E-01(1.67E-01)
WFG2	5	7.20E-01(1.18E-03)†	4.69E-01(4.17E-04)‡	6.81E-01(3.64E-04)†	3.12E-01(1.44E-05)‡	5.64E-01(5.22E-04)†	5.11E-01(2.30E-04)
	25	6.63E-01(4.82E-04)†	3.11E-01(2.33E-05)‡	6.67E-01(5.33E-04)†	3.08E-01(2.20E-07)‡	4.47E-01(9.41E-05)‡	4.61E-01(6.93E-05)
	50	7.05E-01(3.83E-04)†	3.03E-01(3.14E-05)‡	7.09E-01(3.98E-04)†	3.08E-01(3.29E-07)‡	4.50E-01(3.53E-05)	4.52E-01(4.09E-05)
	200	7.16E-01(7.39E-01)†	3.01E-01(2.95E-01)‡	7.19E-01(7.06E-01)†	3.07E-01(3.08E-01)‡	4.32E-01(4.35E-01)	4.27E-01(4.33E-01)
WFG3	5	1.42E+00(9.10E-03)	2.20E+00(1.17E-03)†	1.81E+00(3.31E-03)†	1.30E+00(3.79E-04)‡	1.57E+00(8.32E-04)†	1.39E+00(9.49E-03)
	25	1.34E+00(3.45E-02)‡	2.26E+00(3.55E-04)†	1.92E+00(6.87E-04)†	1.24E+00(1.51E-05)‡	1.61E+00(6.16E-04)†	1.55E+00(7.80E-03)
	50	1.65E+00(1.31E-02)	2.28E+00(4.13E-04)†	1.96E+00(5.61E-04)†	1.23E+00(7.80E-06)‡	1.68E+00(4.86E-04)†	1.61E+00(3.70E-03)
	200	1.95E+00(1.98E+00)†	2.29E+00(2.27E+00)†	2.00E+00(2.03E+00)†	1.23E+00(1.23E+00)‡	1.72E+00(1.70E+00)†	1.68E+00(1.70E+00)
WFG4	5	4.86E-01(1.22E-04)†	4.89E-01(3.12E-04)†	5.80E-01(1.45E-04)†	4.38E-01(2.49E-04)†	3.43E-01(6.43E-05)†	2.92E-01(3.71E-05)
	25	4.61E-01(6.27E-05)†	2.99E-01(2.79E-05)†	5.03E-01(7.70E-05)†	3.98E-01(1.33E-04)†	2.24E-01(1.28E-05)†	2.19E-01(6.61E-06)
	50	4.71E-01(4.04E-05)†	2.70E-01(1.56E-05)†	5.01E-01(4.56E-05)†	4.17E-01(1.63E-04)†	2.09E-01(5.78E-06)	2.09E-01(6.39E-06)
	200	4.71E-01(4.70E-01)†	2.34E-01(2.36E-01)†	4.74E-01(4.70E-01)†	4.11E-01(4.10E-01)†	2.19E-01(2.14E-01)†	2.15E-01(2.17E-01)
WFG5	5	5.13E-01(2.29E-04)†	5.08E-01(2.58E-04)†	6.38E-01(1.86E-04)†	7.22E-02(1.13E-05)‡	3.42E-01(8.28E-05)†	3.38E-01(7.80E-05)
	25	4.78E-01(8.03E-05)†	3.45E-01(4.54E-05)†	5.28E-01(9.40E-05)†	5.87E-02(5.34E-06)‡	2.46E-01(6.64E-06)	2.47E-01(8.31E-06)
	50	4.82E-01(8.83E-05)†	3.02E-01(2.17E-05)†	5.10E-01(7.13E-05)†	6.13E-02(6.00E-06)‡	2.38E-01(4.64E-06)	2.40E-01(7.22E-06)
	200	4.88E-01(4.77E-01)†	2.59E-01(2.57E-01)†	4.85E-01(5.04E-01)†	5.96E-02(6.01E-02)‡	2.37E-01(2.39E-01)	2.41E-01(2.42E-01)
WFG6	5	5.69E-01(4.39E-04)†	6.32E-01(5.34E-04)†	7.20E-01(8.31E-04)†	1.14E-01(1.71E-05)‡	5.55E-01(1.42E-03)†	3.96E-01(9.29E-04)
	25	4.76E-01(8.12E-05)†	3.16E-01(5.33E-05)†	5.06E-01(7.75E-05)†	1.14E-01(1.12E-06)‡	2.48E-01(2.10E-05)†	2.33E-01(1.11E-05)
	50	4.72E-01(4.44E-05)†	2.74E-01(2.20E-05)†	4.85E-01(4.68E-05)†	1.14E-01(7.95E-07)‡	2.19E-01(4.43E-06)†	2.18E-01(7.16E-06)
	200	4.68E-01(4.72E-01)†	2.32E-01(2.26E-01)†	4.77E-01(4.69E-01)†	1.21E-01(1.20E-01)‡	2.11E-01(2.15E-01)‡	2.16E-01(2.12E-01)
WFG7	5	5.73E-01(8.87E-05)†	6.32E-01(2.69E-03)†	6.54E-01(1.90E-04)†	2.51E-01(1.21E-04)‡	3.65E-01(7.46E-05)†	3.01E-01(4.34E-05)
	25	5.19E-01(4.64E-05)†	3.82E-01(1.84E-04)†	5.34E-01(5.94E-05)†	8.91E-02(1.59E-05)‡	2.15E-01(4.20E-06)†	2.12E-01(6.68E-06)
	50	5.12E-01(3.76E-05)†	3.31E-01(7.90E-05)†	5.21E-01(4.54E-05)†	6.54E-02(3.41E-06)‡	2.04E-01(5.71E-06)	2.05E-01(4.46E-06)
	200	4.98E-01(5.13E-01)†	2.71E-01(2.64E-01)†	5.11E-01(5.06E-01)†	5.51E-02(5.38E-02)‡	2.29E-01(2.25E-01)‡	2.30E-01(2.30E-01)
WFG8	5	5.76E-01(1.36E-04)†	6.45E-01(1.30E-03)†	6.55E-01(1.87E-04)†	2.51E-01(1.82E-04)‡	3.63E-01(7.22E-05)†	3.02E-01(2.04E-05)
	25	5.19E-01(4.64E-05)†	3.82E-01(1.84E-04)†	5.34E-01(5.94E-05)†	8.93E-02(1.19E-05)‡	2.14E-01(4.43E-06)†	2.12E-01(4.51E-06)
	50	5.12E-01(3.22E-05)†	3.32E-01(6.67E-05)†	5.20E-01(3.42E-05)†	6.51E-02(3.01E-06)‡	2.03E-01(6.16E-06)	2.04E-01(7.01E-06)
	200	5.11E-01(5.03E-01)†	2.69E-01(2.72E-01)†	5.07E-01(4.96E-01)†	5.43E-02(5.35E-02)‡	2.29E-01(2.23E-01)	2.31E-01(2.29E-01)
WFG9	5	6.07E-01(5.82E-04)‡	8.16E-01(8.13E-03)†	7.84E-01(3.16E-03)	1.50E-01(5.77E-05)‡	7.67E-01(5.12E-02)†	7.11E-01(3.47E-02)
	25	5.19E-01(4.64E-05)	3.82E-01(1.84E-04)	5.34E-01(5.94E-05)	8.61E-02(2.53E-06)‡	4.50E-01(5.72E-02)	4.79E-01(5.66E-02)
	50	5.32E-01(3.18E-05)	3.39E-01(2.08E-02)	5.37E-01(4.43E-05)	7.65E-02(2.53E-06)‡	5.42E-01(4.90E-02)	5.03E-01(5.85E-02)
	200	5.21E-01(5.27E-01)‡	2.43E-01(2.40E-01)‡	5.20E-01(5.05E-01)‡	6.55E-02(6.22E-02)‡	6.20E-01(6.88E-01)	7.49E-01(4.45E-01)
+-=		45/3/4	40/9/3	48/1/3	20/31/1	33/6/13	—

TABLE 17
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMPARED ALGORITHMS AT THE LAST GENERATION OF ALL CHANGES ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.00E+00(0.00E+00)‡	9.61E-01(2.41E-04)	9.99E-01(2.74E-06)‡	9.36E-01(4.39E-04)	9.99E-01(3.55E-06)‡	9.36E-01(9.97E-03)
	25	1.00E+00(0.00E+00)‡	9.78E-01(2.18E-05)‡	1.00E+00(6.75E-06)‡	9.72E-01(2.24E-04)‡	6.39E-01(2.32E-01)†	9.02E-01(3.88E-04)
	50	1.00E+00(3.66E-07)‡	9.94E-01(4.11E-06)‡	1.00E+00(2.50E-07)‡	9.70E-01(1.03E-04)†	9.97E-01(5.72E-06)‡	9.89E-01(8.92E-04)
	200	1.00E+00(1.54E-09)‡	1.00E+00(1.28E-09)‡	1.00E+00(1.54E-09)‡	9.63E-01(1.50E-04)†	9.99E-01(6.19E-07)‡	9.96E-01(3.22E-04)
F2	5	9.65E-01(1.95E-04)†	1.00E+00(3.52E-08)‡	1.00E+00(1.01E-06)	9.36E-01(1.40E-03)†	9.99E-01(1.11E-06)	9.98E-01(6.01E-06)
	25	9.99E-01(1.35E-06)†	1.00E+00(0.00E+00)‡	1.00E+00(2.36E-11)‡	8.55E-01(9.51E-04)†	6.45E-01(2.37E-01)†	1.00E+00(1.07E-07)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(5.53E-12)	7.45E-01(1.27E-03)†	1.00E+00(5.65E-12)†	1.00E+00(2.43E-12)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	5.34E-01(1.81E-04)†	1.00E+00(3.47E-12)	1.00E+00(4.03E-12)
F3	5	1.00E+00(0.00E+00)‡	9.94E-01(8.92E-06)	1.00E+00(0.00E+00)‡	8.99E-01(8.45E-04)	1.00E+00(9.81E-09)	9.06E-01(1.40E-02)
	25	1.00E+00(0.00E+00)‡	1.00E+00(3.03E-07)‡	1.00E+00(0.00E+00)‡	9.13E-01(3.39E-04)‡	6.44E-01(2.36E-01)	8.77E-01(1.63E-03)
	50	1.00E+00(8.19E-08)‡	1.00E+00(1.25E-11)‡	1.00E+00(0.00E+00)‡	9.06E-01(2.89E-04)†	1.00E+00(5.95E-07)	9.96E-01(3.23E-04)
	200	1.00E+00(2.78E-14)‡	1.00E+00(0.00E+00)‡	1.00E+00(2.77E-11)‡	7.65E-01(1.68E-03)†	1.00E+00(1.31E-07)	9.97E-01(3.22E-04)
F4	5	9.95E-01(5.29E-05)‡	9.58E-01(2.31E-04)‡	9.87E-01(1.04E-04)‡	9.89E-01(2.48E-04)‡	9.95E-01(2.27E-05)‡	8.91E-01(1.28E-03)
	25	9.76E-01(8.00E-05)‡	9.90E-01(1.67E-04)‡	9.92E-01(1.11E-04)‡	9.84E-01(1.49E-04)‡	6.45E-01(2.36E-01)‡	8.50E-01(2.31E-03)
	50	1.00E+00(7.94E-10)‡	9.98E-01(2.91E-05)‡	1.00E+00(1.08E-11)‡	9.87E-01(3.37E-05)‡	1.00E+00(1.77E-06)‡	8.38E-01(1.83E-03)
	200	1.00E+00(0.00E+00)‡	1.00E+00(3.23E-16)‡	1.00E+00(0.00E+00)‡	9.82E-01(1.40E-05)‡	1.00E+00(1.96E-12)‡	8.42E-01(2.67E-03)
WFG1	5	8.31E-01(2.95E-04)†	6.29E-01(8.15E-04)†	7.79E-01(2.31E-04)†	4.47E-01(2.50E-04)†	7.87E-01(5.45E-04)†	8.51E-01(4.75E-04)
	25	8.34E-01(1.35E-04)†	5.52E-01(3.69E-04)†	8.20E-01(1.32E-04)†	4.83E-01(1.10E-04)†	5.13E-01(1.50E-01)†	8.83E-01(1.97E-04)
	50	8.85E-01(9.55E-05)†	5.22E-01(1.77E-04)†	8.84E-01(9.32E-05)†	4.89E-01(7.80E-05)†	8.47E-01(1.46E-04)†	9.15E-01(6.05E-05)
	200	9.71E-01(1.22E-05)‡	5.20E-01(1.25E-04)†	9.70E-01(1.14E-05)‡	4.91E-01(2.23E-05)†	9.61E-01(1.53E-05)†	9.67E-01(1.44E-05)
WFG2	5	8.02E-01(1.90E-04)†	5.61E-01(8.99E-04)†	8.59E-01(2.00E-04)†	1.83E-01(4.75E-06)†	8.76E-01(1.47E-04)†	9.45E-01(2.85E-04)
	25	9.38E-01(6.02E-05)†	5.33E-01(2.69E-04)†	9.63E-01(1.39E-05)†	1.88E-01(1.35E-07)†	6.14E-01(2.14E-01)†	9.72E-01(3.17E-04)
	50	9.79E-01(5.35E-06)†	5.39E-01(2.54E-04)†	9.82E-01(3.25E-06)	1.88E-01(1.34E-07)†	9.80E-01(6.87E-06)	9.81E-01(4.57E-06)
	200	9.95E-01(2.15E-07)‡	5.47E-01(2.17E-04)†	9.95E-01(2.81E-07)‡	1.87E-01(5.19E-07)†	9.76E-01(3.40E-07)‡	9.76E-01(1.69E-07)
WFG3	5	8.89E-01(2.95E-04)‡	7.50E-01(4.04E-03)†	8.35E-01(2.70E-04)†	4.76E-01(2.38E-05)†	8.20E-01(4.40E-04)†	8.57E-01(6.63E-04)
	25	9.84E-01(1.36E-05)‡	9.02E-01(8.45E-04)†	9.75E-01(2.44E-05)†	4.78E-01(8.08E-07)†	6.01E-01(2.05E-01)†	9.23E-01(9.19E-04)
	50	9.94E-01(2.29E-06)‡	9.31E-01(4.76E-04)†	9.90E-01(3.19E-06)‡	4.79E-01(1.49E-06)†	9.54E-01(2.40E-04)	9.47E-01(6.09E-04)
	200	9.99E-01(6.98E-08)‡	9.73E-01(5.07E-05)†	9.98E-01(1.00E-07)‡	4.80E-01(3.72E-07)†	9.87E-01(3.90E-05)	9.80E-01(2.17E-04)
WFG4	5	9.38E-01(9.66E-05)†	8.95E-01(4.74E-04)†	9.77E-01(8.49E-06)†	8.43E-01(2.15E-05)†	9.83E-01(2.04E-05)†	9.95E-01(4.46E-06)
	25	9.97E-01(2.18E-07)†	9.37E-01(7.76E-05)†	9.95E-01(2.31E-07)†	8.54E-01(2.58E-06)†	6.44E-01(2.36E-01)†	9.99E-01(3.19E-07)
	50	9.99E-01(8.26E-08)†	9.48E-01(4.17E-05)†	9.97E-01(1.88E-07)†	8.57E-01(1.13E-06)†	1.00E+00(2.77E-08)†	1.00E+00(3.40E-08)
	200	1.00E+00(8.16E-09)†	9.61E-01(2.07E-05)†	9.99E-01(2.03E-08)†	8.57E-01(1.24E-07)†	1.00E+00(1.14E-08)†	1.00E+00(4.48E-09)
WFG5	5	9.56E-01(1.20E-04)†	9.21E-01(1.07E-04)†	9.67E-01(5.03E-06)†	8.42E-01(8.65E-06)†	9.85E-01(2.86E-06)†	9.85E-01(3.81E-06)
	25	9.86E-01(3.73E-07)†	9.39E-01(2.14E-05)†	9.82E-01(2.94E-06)†	8.46E-01(4.96E-06)†	6.39E-01(2.32E-01)†	9.91E-01(1.05E-06)
	50	9.87E-01(1.80E-07)†	9.45E-01(1.70E-05)†	9.85E-01(1.90E-06)†	8.47E-01(3.15E-06)†	9.91E-01(3.13E-07)	9.91E-01(1.53E-07)
	200	9.88E-01(3.42E-07)†	9.55E-01(1.83E-05)†	9.87E-01(1.06E-07)†	8.51E-01(4.86E-06)†	9.92E-01(1.43E-08)	9.92E-01(2.61E-08)
WFG6	5	9.15E-01(7.35E-05)†	8.31E-01(6.82E-04)†	9.65E-01(2.05E-05)†	3.93E-01(5.72E-06)†	9.68E-01(2.92E-05)†	9.83E-01(1.86E-05)
	25	9.92E-01(5.42E-06)†	9.26E-01(3.93E-05)†	9.93E-01(1.10E-06)†	3.91E-01(1.12E-06)†	6.43E-01(2.35E-01)†	9.97E-01(1.53E-06)
	50	9.97E-01(3.94E-07)†	9.40E-01(3.42E-05)†	9.96E-01(4.57E-07)†	3.91E-01(1.06E-07)†	9.99E-01(1.54E-07)†	9.99E-01(3.97E-07)
	200	9.99E-01(1.49E-07)†	9.56E-01(1.55E-05)†	9.99E-01(6.64E-08)†	3.90E-01(3.46E-08)†	1.00E+00(1.32E-08)	1.00E+00(1.11E-08)
WFG7	5	9.86E-01(3.33E-06)†	8.64E-01(1.07E-03)†	9.78E-01(9.31E-06)†	9.53E-01(2.61E-05)†	9.86E-01(5.10E-06)†	9.92E-01(3.71E-06)
	25	9.98E-01(1.58E-07)†	9.45E-01(4.43E-05)†	9.97E-01(2.28E-07)†	9.91E-01(5.30E-06)†	6.44E-01(2.36E-01)†	9.99E-01(2.34E-07)
	50	9.99E-01(2.29E-08)†	9.58E-01(2.73E-05)†	9.99E-01(4.51E-08)†	9.96E-01(1.96E-06)†	1.00E+00(1.19E-07)	1.00E+00(2.39E-07)
	200	1.00E+00(4.46E-10)†	9.74E-01(1.84E-05)†	1.00E+00(5.95E-10)†	9.94E-01(6.24E-06)†	1.00E+00(6.16E-10)	1.00E+00(1.92E-09)
WFG8	5	9.86E-01(4.49E-06)†	8.69E-01(3.12E-04)†	9.78E-01(8.55E-06)†	9.49E-01(2.04E-05)†	9.87E-01(5.33E-06)†	9.92E-01(2.49E-06)
	25	9.98E-01(1.58E-07)†	9.45E-01(4.43E-05)†	9.97E-01(2.28E-07)†	9.92E-01(2.69E-06)†	6.44E-01(2.36E-01)†	9.99E-01(5.22E-07)
	50	9.99E-01(2.55E-08)†	9.61E-01(1.74E-05)†	9.99E-01(4.85E-08)†	9.95E-01(2.74E-06)†	1.00E+00(6.57E-08)†	1.00E+00(1.00E-07)
	200	1.00E+00(3.17E-10)†	9.75E-01(1.42E-05)†	1.00E+00(6.85E-10)†	9.94E-01(8.15E-06)†	1.00E+00(1.57E-09)†	1.00E+00(1.12E-09)
WFG9	5	9.89E-01(5.30E-06)‡	8.44E-01(5.45E-04)†	9.73E-01(6.49E-05)‡	9.67E-01(2.45E-05)‡	9.35E-01(1.65E-03)†	9.29E-01(1.19E-03)
	25	9.98E-01(1.58E-07)	9.45E-01(4.43E-05)	9.97E-01(2.28E-07)	9.87E-01(4.33E-06)	6.20E-01(2.20E-01)†	9.55E-01(1.67E-03)
	50	9.98E-01(1.55E-07)	9.50E-01(9.11E-04)	9.98E-01(6.71E-08)	9.88E-01(4.94E-06)	9.43E-01(1.44E-03)	9.50E-01(1.69E-03)
	200	9.99E-01(6.61E-08)‡	9.64E-01(6.39E-04)‡	9.99E-01(3.60E-08)‡	9.91E-01(6.01E-06)‡	9.46E-01(1.57E-03)	9.38E-01(1.49E-03)
+-=		28/22/2	33/15/4	27/20/5	40/8/4	28/8/16	—

TABLE 18
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 2 TO 3 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	9.70E-01(5.17E-11)†	9.70E-01(2.04E-31)†	9.68E-01(1.40E-06)†	5.64E-03(7.87E-04)†	9.70E-01(1.26E-09)†	9.97E-01(4.89E-09)
	25	9.70E-01(5.85E-11)†	9.70E-01(2.04E-31)†	9.68E-01(8.85E-07)†	2.26E-04(1.58E-06)†	9.70E-01(3.05E-10)†	9.97E-01(6.81E-08)
	50	9.70E-01(2.02E-11)†	9.70E-01(2.04E-31)†	9.68E-01(1.05E-06)†	8.10E-03(1.06E-03)†	9.70E-01(1.47E-10)†	9.97E-01(2.68E-09)
	200	9.70E-01(1.95E-11)†	9.70E-01(2.04E-31)†	9.68E-01(6.19E-07)†	7.53E-03(8.00E-04)†	9.70E-01(3.64E-10)†	9.97E-01(4.08E-09)
F2	5	7.64E-01(9.62E-08)†	7.64E-01(1.48E-10)†	8.00E-01(1.33E-04)†	7.61E-01(1.51E-06)†	7.64E-01(2.54E-07)†	9.28E-01(1.12E-06)
	25	7.64E-01(1.34E-07)†	7.64E-01(4.20E-11)†	7.94E-01(1.61E-04)†	7.60E-01(1.40E-06)†	7.64E-01(2.05E-08)†	9.28E-01(1.10E-06)
	50	7.64E-01(1.46E-07)†	7.64E-01(3.55E-10)†	7.98E-01(1.22E-04)†	7.60E-01(3.00E-06)†	7.64E-01(8.99E-08)†	9.28E-01(3.27E-06)
	200	7.64E-01(1.36E-07)†	7.64E-01(5.38E-11)†	7.97E-01(1.40E-04)†	7.60E-01(1.44E-06)†	7.64E-01(9.72E-08)†	9.28E-01(1.97E-06)
F3	5	7.64E-01(6.43E-10)†	7.64E-01(7.33E-13)†	7.58E-01(9.87E-06)†	7.61E-01(1.51E-06)†	7.64E-01(1.13E-09)†	9.28E-01(2.49E-07)
	25	7.64E-01(9.52E-10)†	7.64E-01(1.33E-12)†	7.58E-01(7.06E-06)†	0.00E+00(0.00E+00)†	7.64E-01(1.23E-09)†	9.28E-01(2.56E-06)
	50	7.64E-01(9.57E-10)†	7.64E-01(1.04E-12)†	7.59E-01(8.22E-06)†	0.00E+00(0.00E+00)†	7.64E-01(4.35E-10)†	9.28E-01(2.39E-07)
	200	7.64E-01(4.57E-10)†	7.64E-01(1.01E-12)†	7.58E-01(1.35E-05)†	0.00E+00(0.00E+00)†	7.64E-01(1.34E-09)†	9.28E-01(5.30E-07)
F4	5	8.03E-01(5.92E-11)†	8.03E-01(6.24E-14)†	8.07E-01(2.39E-04)	7.77E-01(1.43E-04)†	7.93E-01(2.96E-03)†	8.06E-01(8.06E-04)
	25	8.03E-01(9.98E-11)‡	8.03E-01(3.23E-14)‡	8.06E-01(9.63E-05)	7.79E-01(1.74E-04)†	8.03E-01(2.56E-09)‡	7.99E-01(3.47E-05)
	50	8.03E-01(7.34E-11)‡	8.03E-01(1.15E-31)‡	8.03E-01(6.91E-05)	7.79E-01(1.59E-04)†	8.03E-01(2.51E-09)‡	7.97E-01(1.04E-04)
	200	8.03E-01(8.00E-11)‡	8.03E-01(6.24E-14)‡	8.03E-01(6.16E-05)	7.80E-01(8.56E-05)†	8.03E-01(2.07E-09)‡	8.00E-01(4.17E-05)
WFG1	5	8.41E-01(5.06E-06)†	8.34E-01(4.92E-07)†	8.40E-01(7.85E-06)†	3.38E-01(9.25E-06)†	8.41E-01(5.95E-06)†	9.51E-01(2.52E-05)
	25	8.41E-01(6.11E-06)†	8.33E-01(1.08E-06)†	8.40E-01(1.03E-05)†	3.37E-01(1.20E-05)†	8.41E-01(1.63E-06)†	9.50E-01(2.51E-05)
	50	8.41E-01(5.20E-06)†	8.34E-01(8.49E-07)†	8.41E-01(1.28E-06)†	3.37E-01(1.32E-05)†	8.41E-01(4.16E-06)†	9.51E-01(1.77E-05)
	200	8.41E-01(6.64E-06)†	8.34E-01(9.40E-07)†	8.41E-01(5.25E-06)†	3.38E-01(6.80E-06)†	8.42E-01(1.94E-06)†	9.50E-01(1.64E-05)
WFG2	5	8.28E-01(3.08E-10)†	8.24E-01(5.25E-06)†	8.38E-01(2.18E-05)†	2.73E-01(4.97E-08)†	8.28E-01(2.04E-09)†	9.61E-01(5.62E-07)
	25	8.28E-01(3.91E-10)†	8.25E-01(3.98E-06)†	8.37E-01(5.72E-05)†	2.73E-01(5.50E-08)†	8.28E-01(1.76E-07)†	9.61E-01(8.00E-07)
	50	8.28E-01(6.35E-10)†	8.24E-01(2.19E-06)†	8.36E-01(5.35E-05)†	2.73E-01(5.05E-08)†	8.28E-01(2.67E-09)†	9.61E-01(1.79E-06)
	200	7.84E-01(3.29E-03)†	8.24E-01(9.22E-06)†	8.36E-01(4.80E-05)†	2.73E-01(2.94E-08)†	7.62E-01(3.21E-03)†	9.60E-01(5.88E-07)
WFG3	5	7.23E-01(2.34E-09)‡	7.22E-01(1.83E-09)‡	7.20E-01(2.95E-06)†	2.84E-01(6.25E-08)†	7.19E-01(4.18E-04)†	7.21E-01(3.77E-07)
	25	7.23E-01(1.02E-09)‡	7.22E-01(1.54E-09)‡	7.20E-01(2.76E-06)†	2.84E-01(1.02E-07)†	7.23E-01(5.29E-09)‡	7.21E-01(2.06E-07)
	50	7.23E-01(1.81E-09)‡	7.22E-01(1.45E-09)‡	7.21E-01(1.81E-06)	2.84E-01(1.34E-07)†	7.23E-01(4.04E-10)‡	7.21E-01(3.65E-07)
	200	7.23E-01(1.18E-09)‡	7.22E-01(9.52E-10)‡	7.20E-01(3.13E-06)	2.83E-01(1.15E-07)†	7.23E-01(6.67E-09)‡	7.21E-01(4.59E-07)
WFG4	5	4.60E-01(5.49E-10)†	4.54E-01(8.09E-07)†	5.19E-01(3.98E-04)†	2.38E-01(6.31E-07)†	4.60E-01(4.81E-11)†	7.36E-01(2.19E-06)
	25	4.60E-01(4.66E-10)†	4.54E-01(9.40E-07)†	5.21E-01(4.01E-04)†	2.37E-01(1.35E-06)†	4.60E-01(7.76E-10)†	7.36E-01(2.47E-06)
	50	4.60E-01(4.22E-10)†	4.54E-01(1.05E-06)†	5.26E-01(3.13E-04)†	2.37E-01(8.25E-07)†	4.60E-01(3.42E-11)†	7.36E-01(2.26E-06)
	200	4.60E-01(4.82E-10)†	4.54E-01(7.32E-07)†	5.17E-01(4.97E-04)†	2.37E-01(1.05E-06)†	4.60E-01(4.16E-11)†	7.36E-01(2.36E-06)
WFG5	5	4.27E-01(1.24E-09)†	4.24E-01(1.17E-05)†	5.23E-01(7.90E-05)†	4.41E-01(1.13E-05)†	4.25E-01(9.50E-07)†	6.85E-01(1.49E-05)
	25	4.27E-01(1.53E-09)†	4.23E-01(1.88E-05)†	5.19E-01(7.61E-05)†	4.40E-01(1.07E-05)†	4.25E-01(3.37E-06)†	6.85E-01(1.44E-05)
	50	4.27E-01(9.78E-10)†	4.24E-01(1.18E-05)†	5.17E-01(7.79E-05)†	4.40E-01(7.61E-06)†	4.25E-01(1.91E-06)†	6.86E-01(1.20E-05)
	200	4.27E-01(1.23E-09)†	4.23E-01(1.64E-05)†	5.19E-01(1.26E-04)†	4.41E-01(1.89E-05)†	4.25E-01(3.02E-06)†	6.84E-01(1.51E-05)
WFG6	5	4.20E-01(1.07E-04)†	4.41E-01(4.18E-09)†	4.61E-01(1.44E-04)†	1.79E-01(7.14E-08)†	4.17E-01(5.85E-05)†	6.76E-01(4.74E-04)
	25	4.19E-01(6.87E-05)†	4.41E-01(8.36E-09)†	4.62E-01(1.27E-04)†	1.79E-01(3.77E-06)†	4.12E-01(4.32E-04)†	6.67E-01(4.30E-03)
	50	4.21E-01(6.04E-05)†	4.41E-01(3.74E-09)†	4.65E-01(2.43E-04)†	1.79E-01(1.32E-07)†	4.09E-01(4.46E-04)†	6.32E-01(2.39E-02)
	200	4.23E-01(8.64E-05)†	4.41E-01(4.56E-09)†	4.65E-01(1.56E-04)†	1.79E-01(7.16E-08)†	4.11E-01(4.15E-04)†	6.94E-01(2.18E-04)
WFG7	5	4.41E-01(5.83E-10)†	4.41E-01(9.04E-09)†	4.65E-01(9.71E-06)†	4.33E-01(4.64E-07)†	4.41E-01(7.34E-11)†	7.29E-01(6.16E-06)
	25	4.41E-01(3.26E-09)†	4.41E-01(9.19E-09)†	4.67E-01(2.91E-05)†	4.33E-01(3.96E-07)†	4.41E-01(1.84E-11)†	7.29E-01(1.39E-05)
	50	4.41E-01(2.07E-08)†	4.41E-01(8.90E-09)†	4.67E-01(5.50E-05)†	4.34E-01(8.12E-07)†	4.41E-01(5.62E-11)†	7.30E-01(6.46E-06)
	200	4.41E-01(2.85E-09)†	4.41E-01(8.37E-09)†	4.67E-01(1.70E-05)†	4.33E-01(5.82E-07)†	4.41E-01(3.88E-11)†	7.29E-01(8.90E-06)
WFG8	5	4.41E-01(1.29E-09)†	4.41E-01(7.18E-09)†	4.68E-01(3.13E-05)†	4.33E-01(8.48E-07)†	4.41E-01(2.89E-11)†	7.29E-01(7.01E-06)
	25	4.41E-01(2.71E-09)†	4.41E-01(9.79E-09)†	4.66E-01(1.16E-05)†	4.33E-01(7.95E-07)†	4.41E-01(6.68E-11)†	7.29E-01(9.44E-06)
	50	4.41E-01(2.37E-09)†	4.41E-01(3.15E-09)†	4.66E-01(3.31E-05)†	4.33E-01(8.62E-07)†	4.41E-01(3.74E-11)†	7.30E-01(8.56E-06)
	200	4.41E-01(1.73E-09)†	4.41E-01(8.53E-09)†	4.67E-01(1.43E-05)†	4.33E-01(4.29E-07)†	4.41E-01(7.66E-11)†	7.31E-01(4.04E-06)
WFG9	5	3.45E-01(1.04E-03)†	4.39E-01(1.58E-04)†	4.09E-01(3.66E-04)†	5.12E-01(2.25E-02)‡	3.65E-01(4.58E-03)†	4.77E-01(1.87E-04)
	25	3.67E-01(2.03E-03)†	4.37E-01(8.77E-04)†	4.08E-01(4.35E-04)†	4.94E-01(2.36E-02)‡	3.99E-01(2.68E-03)†	4.79E-01(2.93E-04)
	50	3.68E-01(2.36E-03)†	4.43E-01(8.93E-05)†	4.03E-01(4.74E-04)†	4.25E-01(2.63E-02)	3.95E-01(2.89E-03)†	4.83E-01(1.09E-04)
	200	3.65E-01(2.26E-03)†	4.43E-01(1.34E-04)†	4.02E-01(3.54E-04)†	4.35E-01(2.99E-02)	4.03E-01(2.67E-03)†	4.80E-01(2.29E-04)

TABLE 19
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 3 TO 4 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	9.73E-01(2.12E-06)†	9.76E-01(3.46E-06)†	9.70E-01(2.11E-06)†	1.22E-02(1.34E-03)†	9.73E-01(1.92E-06)†	1.00E+00(8.74E-11)
	25	9.84E-01(1.85E-05)†	9.97E-01(1.28E-09)†	9.82E-01(1.09E-05)†	3.34E-02(8.36E-03)†	9.96E-01(1.32E-06)†	1.00E+00(2.23E-08)
	50	9.95E-01(4.79E-06)†	9.97E-01(3.63E-10)†	9.92E-01(8.07E-06)†	2.12E-02(1.63E-03)†	9.97E-01(2.51E-07)†	1.00E+00(2.86E-10)
	200	9.97E-01(3.75E-09)†	9.97E-01(3.05E-11)†	9.96E-01(4.20E-07)†	3.64E-02(4.94E-03)†	9.97E-01(4.10E-08)†	1.00E+00(5.60E-10)
F2	5	7.79E-01(1.31E-04)†	8.86E-01(2.74E-04)†	8.77E-01(2.05E-04)†	8.96E-01(2.61E-04)†	8.92E-01(1.27E-04)†	9.70E-01(1.74E-05)
	25	8.92E-01(1.51E-04)†	9.16E-01(2.64E-06)†	9.05E-01(2.66E-05)†	9.00E-01(1.48E-03)†	9.15E-01(6.76E-07)†	9.71E-01(3.43E-06)
	50	9.11E-01(4.15E-06)†	9.16E-01(9.09E-07)†	9.06E-01(2.01E-05)†	9.16E-01(3.48E-05)†	9.15E-01(4.19E-07)†	9.71E-01(6.47E-06)
	200	9.12E-01(3.81E-06)†	9.15E-01(7.71E-08)†	9.06E-01(5.00E-05)†	9.11E-01(4.16E-07)†	9.15E-01(1.67E-07)†	9.72E-01(3.62E-06)
F3	5	7.60E-01(8.87E-05)†	7.86E-01(5.21E-04)†	7.37E-01(2.60E-04)†	8.96E-01(2.61E-04)†	7.66E-01(1.99E-04)†	9.73E-01(8.16E-08)
	25	8.29E-01(5.07E-04)†	9.13E-01(5.42E-07)†	8.13E-01(3.75E-04)†	0.00E+00(0.00E+00)†	9.06E-01(5.32E-05)†	9.70E-01(5.52E-06)
	50	8.85E-01(2.93E-04)†	9.14E-01(1.87E-07)†	8.67E-01(3.16E-04)†	0.00E+00(0.00E+00)†	9.13E-01(6.97E-06)†	9.72E-01(6.00E-06)
	200	9.11E-01(6.01E-07)†	9.15E-01(2.37E-08)†	8.95E-01(3.74E-05)†	0.00E+00(0.00E+00)†	9.12E-01(6.25E-05)†	9.73E-01(1.18E-06)
F4	5	8.03E-01(3.67E-10)†	8.02E-01(6.72E-09)†	8.15E-01(3.11E-04)	7.99E-01(2.66E-07)†	8.58E-01(6.05E-04)‡	8.34E-01(2.54E-03)
	25	8.14E-01(8.57E-04)	8.18E-01(1.56E-03)	8.85E-01(2.69E-03)‡	8.08E-01(7.74E-04)‡	9.29E-01(2.11E-08)‡	8.44E-01(2.64E-03)
	50	9.23E-01(4.83E-04)‡	8.70E-01(3.64E-03)‡	9.23E-01(2.51E-05)‡	8.36E-01(2.61E-03)†	9.30E-01(6.17E-09)‡	8.51E-01(2.89E-03)
	200	9.27E-01(3.40E-07)‡	9.29E-01(5.86E-08)‡	9.22E-01(2.70E-05)‡	9.13E-01(1.08E-03)‡	9.30E-01(3.96E-09)‡	8.55E-01(3.27E-03)
WFG1	5	8.86E-01(1.02E-04)†	8.50E-01(1.97E-04)†	8.78E-01(8.78E-05)†	4.64E-01(8.63E-04)†	8.85E-01(6.25E-05)†	9.86E-01(4.75E-06)
	25	9.53E-01(1.18E-04)†	8.89E-01(1.24E-04)†	9.56E-01(4.56E-05)†	3.79E-01(5.75E-04)†	9.58E-01(1.70E-05)†	9.86E-01(2.18E-06)
	50	9.67E-01(1.04E-05)†	9.16E-01(8.12E-05)†	9.66E-01(4.84E-06)†	3.85E-01(4.34E-04)†	9.70E-01(7.85E-06)†	9.86E-01(5.05E-06)
	200	9.70E-01(6.04E-06)†	9.46E-01(2.91E-05)†	9.70E-01(1.54E-06)†	3.78E-01(3.85E-04)†	9.73E-01(6.16E-07)†	9.86E-01(4.17E-06)
WFG2	5	8.92E-01(2.05E-04)†	8.94E-01(2.71E-04)†	9.16E-01(2.51E-04)†	2.55E-01(3.71E-08)†	9.53E-01(3.33E-05)†	9.93E-01(2.14E-07)
	25	9.65E-01(2.45E-05)†	9.37E-01(1.01E-05)†	9.68E-01(7.95E-07)†	2.56E-01(2.16E-08)†	9.72E-01(8.55E-08)†	9.94E-01(2.41E-07)
	50	9.70E-01(1.76E-07)†	9.46E-01(9.13E-06)†	9.69E-01(4.32E-07)†	2.57E-01(2.18E-09)†	9.72E-01(2.27E-08)†	9.94E-01(8.04E-08)
	200	9.70E-01(1.93E-07)†	9.60E-01(1.33E-06)†	9.69E-01(3.03E-07)†	2.57E-01(1.59E-10)†	9.73E-01(3.64E-09)†	9.94E-01(7.04E-08)
WFG3	5	6.99E-01(1.83E-09)	6.80E-01(9.18E-06)†	7.03E-01(1.04E-05)‡	2.65E-01(3.55E-07)†	7.07E-01(7.25E-06)‡	7.00E-01(1.75E-05)
	25	6.99E-01(1.20E-09)†	7.08E-01(5.60E-06)	7.08E-01(2.27E-05)	2.68E-01(2.79E-07)†	7.13E-01(2.06E-06)‡	7.06E-01(3.99E-05)
	50	6.99E-01(1.25E-09)†	7.09E-01(7.53E-06)	7.11E-01(8.27E-06)	2.69E-01(7.42E-08)†	7.13E-01(4.92E-06)‡	7.08E-01(2.39E-05)
	200	7.00E-01(1.42E-05)†	7.11E-01(5.94E-06)	7.11E-01(1.52E-05)	2.70E-01(1.82E-08)†	7.11E-01(4.47E-06)	7.11E-01(1.51E-05)
WFG4	5	4.58E-01(1.56E-03)†	6.66E-01(2.31E-03)†	5.95E-01(2.14E-04)†	2.24E-01(9.14E-04)†	6.05E-01(3.06E-04)†	8.18E-01(5.44E-06)
	25	6.43E-01(1.39E-05)†	6.77E-01(1.15E-03)†	6.33E-01(1.03E-04)†	3.29E-01(3.80E-04)†	6.56E-01(3.27E-07)†	8.16E-01(2.65E-05)
	50	6.44E-01(1.58E-06)†	6.69E-01(1.26E-03)†	6.30E-01(4.92E-05)†	3.18E-01(6.66E-05)†	6.58E-01(2.87E-08)†	8.20E-01(3.49E-06)
	200	6.44E-01(2.12E-06)†	6.49E-01(3.10E-04)†	6.29E-01(5.02E-05)†	3.10E-01(1.09E-05)†	6.60E-01(1.48E-09)†	8.21E-01(3.41E-06)
WFG5	5	4.15E-01(3.58E-04)†	6.36E-01(8.96E-04)†	6.02E-01(1.60E-04)†	4.83E-01(8.88E-04)†	5.88E-01(3.03E-04)†	7.56E-01(4.62E-05)
	25	5.89E-01(1.90E-04)†	6.51E-01(7.82E-04)†	6.10E-01(7.73E-05)†	5.44E-01(2.15E-05)†	6.06E-01(4.96E-06)†	7.62E-01(2.97E-05)
	50	5.97E-01(4.37E-06)†	6.26E-01(7.83E-04)†	6.10E-01(1.13E-04)†	5.42E-01(3.60E-05)†	6.14E-01(9.54E-06)†	7.64E-01(2.40E-05)
	200	6.00E-01(1.83E-05)†	6.06E-01(5.70E-05)†	6.11E-01(1.35E-04)†	5.45E-01(2.42E-05)†	6.19E-01(1.21E-08)†	7.66E-01(1.36E-05)
WFG6	5	3.93E-01(3.84E-04)†	5.26E-01(1.46E-03)†	5.01E-01(1.02E-03)†	1.44E-01(6.35E-08)†	5.25E-01(3.15E-04)†	7.37E-01(1.62E-03)
	25	5.48E-01(4.98E-04)†	6.24E-01(1.05E-04)†	5.85E-01(2.52E-04)†	1.47E-01(7.38E-06)†	5.85E-01(1.06E-03)†	7.61E-01(4.94E-04)
	50	5.89E-01(2.25E-04)†	6.22E-01(4.34E-05)†	5.86E-01(2.01E-04)†	1.48E-01(3.18E-07)†	5.77E-01(1.47E-03)†	7.45E-01(1.15E-03)
	200	5.95E-01(2.42E-04)†	6.25E-01(1.15E-05)†	5.81E-01(1.78E-04)†	1.47E-01(1.39E-07)†	5.82E-01(1.29E-03)†	7.62E-01(5.45E-04)
WFG7	5	5.84E-01(2.30E-04)†	6.07E-01(6.68E-04)†	5.66E-01(5.79E-04)†	5.58E-01(5.32E-04)†	6.10E-01(6.75E-04)†	8.21E-01(9.89E-06)
	25	6.33E-01(6.85E-05)†	6.52E-01(3.80E-04)†	6.27E-01(2.79E-05)†	5.99E-01(1.18E-04)†	6.38E-01(1.58E-06)†	8.22E-01(1.13E-05)
	50	6.34E-01(3.54E-05)†	6.55E-01(6.76E-04)†	6.30E-01(2.38E-05)†	5.94E-01(2.72E-05)†	6.39E-01(4.35E-08)†	8.25E-01(5.92E-06)
	200	6.33E-01(1.26E-05)†	6.60E-01(6.75E-04)†	6.29E-01(1.85E-05)†	6.00E-01(9.23E-06)†	6.40E-01(2.21E-09)†	8.25E-01(2.88E-06)
WFG8	5	5.89E-01(3.01E-04)†	6.03E-01(8.03E-04)†	5.58E-01(4.39E-04)†	5.54E-01(7.15E-04)†	6.23E-01(1.32E-03)†	8.21E-01(6.47E-06)
	25	6.31E-01(1.01E-05)†	6.57E-01(4.88E-04)†	6.26E-01(3.88E-05)†	6.01E-01(2.27E-04)†	6.38E-01(1.52E-06)†	8.23E-01(8.32E-06)
	50	6.33E-01(5.03E-05)†	6.59E-01(8.20E-04)†	6.28E-01(2.59E-05)†	5.92E-01(2.35E-05)†	6.39E-01(3.32E-08)†	8.25E-01(2.24E-06)
	200	6.35E-01(1.31E-05)†	6.52E-01(2.77E-04)†	6.31E-01(3.45E-05)†	6.00E-01(7.26E-06)†	6.40E-01(7.15E-10)†	8.25E-01(3.44E-06)
WFG9	5	3.38E-01(2.69E-03)†	4.43E-01(4.30E-04)	4.37E-01(2.05E-04)†	5.94E-01(2.23E-02)‡	4.39E-01(7.17E-04)†	4.56E-01(9.34E-04)
	25	4.07E-01(2.53E-03)†	4.66E-01(3.30E-04)†	4.46E-01(2.31E-04)†	5.96E-01(1.82E-02)‡	4.59E-01(7.40E-04)†	4.85E-01(1.28E-03)
	50	4.15E-01(3.09E-03)†	4.60E-01(5.13E-04)	4.40E-01(2.87E-04)†	5.33E-01(2.37E-02)	4.57E-01(5.95E-04)	4.64E-01(1.30E-03)
	200	4.16E-01(1.19E-03)†	4.67E-01(5.86E-04)	4.45E-01(1.85E-04)	5.12E-01(3.38E-02)	4.51E-01(7.39E-04)	4.59E-01(1.25E-03)
+-=		49/2/1	41/10/1	50/2/0	44/5/3	38/9/5	—

TABLE 20
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 4 TO 5 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	9.77E-01(4.88E-06)†	9.88E-01(1.58E-05)†	9.71E-01(2.77E-06)†	3.14E-02(3.46E-03)†	9.79E-01(1.98E-05)†	1.00E+00(5.32E-11)
	25	9.96E-01(2.82E-06)†	1.00E+00(5.71E-10)†	9.93E-01(6.27E-06)†	1.34E-02(5.35E-03)†	9.99E-01(7.40E-08)†	1.00E+00(1.41E-09)
	50	9.99E-01(3.14E-07)†	1.00E+00(4.25E-11)†	9.98E-01(6.23E-07)†	7.98E-03(1.70E-03)†	1.00E+00(5.23E-09)†	1.00E+00(8.05E-11)
	200	9.99E-01(3.85E-08)†	1.00E+00(3.78E-12)†	9.99E-01(1.62E-07)†	8.13E-02(2.23E-02)†	1.00E+00(3.79E-09)†	1.00E+00(1.28E-10)
F2	5	8.04E-01(2.51E-04)†	9.57E-01(6.70E-05)†	9.26E-01(1.17E-04)†	7.41E-01(1.76E-02)†	9.50E-01(3.26E-05)†	9.86E-01(1.34E-05)
	25	9.42E-01(9.66E-05)†	9.67E-01(1.95E-06)†	9.58E-01(2.29E-05)†	9.61E-02(2.45E-02)†	9.69E-01(6.12E-07)†	9.86E-01(4.71E-06)
	50	9.60E-01(9.02E-06)†	9.68E-01(6.24E-07)†	9.58E-01(1.72E-05)†	1.10E-02(3.65E-03)†	9.69E-01(9.85E-08)†	9.85E-01(7.53E-06)
	200	9.64E-01(4.45E-06)†	9.69E-01(2.80E-08)†	9.59E-01(1.71E-05)†	0.00E+00(0.00E+00)†	9.70E-01(6.90E-08)†	9.86E-01(5.86E-06)
F3	5	7.69E-01(1.81E-04)†	8.72E-01(6.12E-04)†	7.35E-01(1.68E-04)†	7.41E-01(1.76E-02)†	7.79E-01(5.01E-04)†	9.89E-01(1.11E-07)
	25	8.99E-01(4.39E-04)†	9.66E-01(5.88E-07)†	8.77E-01(5.29E-04)†	0.00E+00(0.00E+00)†	9.61E-01(2.94E-05)†	9.85E-01(7.22E-06)
	50	9.39E-01(1.00E-04)†	9.67E-01(3.50E-07)†	9.23E-01(1.20E-04)†	0.00E+00(0.00E+00)†	9.67E-01(7.63E-06)†	9.88E-01(3.20E-06)
	200	9.62E-01(3.86E-06)†	9.69E-01(4.10E-08)†	9.52E-01(4.35E-05)†	0.00E+00(0.00E+00)†	9.68E-01(1.07E-06)†	9.89E-01(1.04E-06)
F4	5	8.03E-01(4.20E-10)	8.13E-01(1.08E-03)†	8.57E-01(1.75E-03)	8.38E-01(2.14E-03)†	9.34E-01(3.10E-04)‡	8.74E-01(3.22E-03)
	25	9.47E-01(3.62E-04)‡	9.22E-01(3.31E-03)‡	9.58E-01(3.17E-04)‡	9.54E-01(2.15E-04)‡	9.74E-01(1.62E-08)‡	8.93E-01(2.15E-03)
	50	9.70E-01(8.88E-07)‡	9.69E-01(1.17E-04)‡	9.70E-01(9.10E-06)‡	9.65E-01(6.15E-05)‡	9.75E-01(1.06E-08)‡	8.76E-01(3.11E-03)
	200	9.70E-01(6.33E-07)‡	9.74E-01(1.38E-08)‡	9.68E-01(1.13E-05)‡	9.70E-01(8.52E-08)‡	9.75E-01(9.33E-10)‡	8.85E-01(3.36E-03)
WFG1	5	9.24E-01(2.28E-04)†	8.75E-01(1.37E-04)†	9.08E-01(1.20E-04)†	3.25E-01(3.62E-03)†	9.25E-01(9.29E-05)†	9.93E-01(2.94E-06)
	25	9.80E-01(2.47E-05)†	9.21E-01(9.30E-05)†	9.79E-01(2.40E-05)†	3.29E-01(3.09E-03)†	9.83E-01(7.26E-06)†	9.94E-01(1.51E-06)
	50	9.86E-01(8.31E-06)†	9.43E-01(6.43E-05)†	9.85E-01(5.15E-06)†	3.59E-01(3.75E-03)†	9.90E-01(8.61E-06)†	9.94E-01(8.60E-07)
	200	9.90E-01(6.05E-07)†	9.59E-01(2.03E-05)†	9.90E-01(3.42E-07)†	3.94E-01(3.07E-03)†	9.93E-01(3.24E-07)†	9.94E-01(2.06E-06)
WFG2	5	9.24E-01(3.50E-04)†	9.16E-01(6.04E-05)†	9.60E-01(9.01E-05)†	2.08E-01(1.37E-06)†	9.79E-01(1.11E-05)†	9.98E-01(7.65E-08)
	25	9.88E-01(7.24E-06)†	9.54E-01(1.42E-05)†	9.90E-01(2.77E-06)†	2.09E-01(1.65E-06)†	9.95E-01(1.58E-08)†	9.98E-01(3.11E-08)
	50	9.92E-01(4.75E-07)†	9.65E-01(5.19E-06)†	9.91E-01(5.66E-07)†	2.08E-01(4.38E-07)†	9.96E-01(9.48E-09)†	9.99E-01(4.07E-08)
	200	9.92E-01(3.91E-07)†	9.80E-01(1.75E-06)†	9.91E-01(4.08E-07)†	2.08E-01(3.92E-09)†	9.96E-01(4.10E-10)†	9.98E-01(4.93E-08)
WFG3	5	6.79E-01(2.84E-09)†	6.75E-01(8.23E-05)†	6.97E-01(7.29E-06)‡	2.19E-01(5.72E-07)†	6.96E-01(5.81E-06)‡	6.82E-01(7.93E-05)
	25	6.79E-01(2.20E-07)†	7.03E-01(8.60E-06)‡	7.04E-01(1.80E-05)‡	2.22E-01(1.04E-07)†	7.04E-01(8.22E-06)‡	6.92E-01(6.94E-05)
	50	6.80E-01(2.14E-05)†	7.05E-01(7.41E-06)‡	7.06E-01(2.15E-05)‡	2.22E-01(2.93E-08)†	7.04E-01(9.23E-06)‡	6.94E-01(3.82E-05)
	200	7.04E-01(5.41E-05)‡	7.08E-01(4.37E-06)‡	7.05E-01(1.88E-05)‡	2.23E-01(3.86E-09)†	7.03E-01(9.51E-06)	7.00E-01(4.95E-05)
WFG4	5	5.28E-01(2.19E-03)†	7.13E-01(6.64E-04)†	6.54E-01(2.09E-04)†	2.80E-01(9.49E-04)†	6.79E-01(2.86E-04)†	8.61E-01(1.42E-05)
	25	7.19E-01(6.08E-05)†	7.43E-01(3.77E-04)†	6.94E-01(6.12E-05)†	2.98E-01(1.76E-04)†	7.73E-01(5.91E-07)†	8.58E-01(3.82E-05)
	50	7.21E-01(2.45E-05)†	7.54E-01(1.73E-04)†	6.94E-01(7.47E-05)†	2.94E-01(1.12E-04)†	7.76E-01(2.26E-07)†	8.68E-01(5.52E-06)
	200	7.28E-01(3.43E-05)†	7.62E-01(1.66E-04)†	6.91E-01(5.42E-05)†	2.84E-01(2.28E-05)†	7.80E-01(1.71E-08)†	8.66E-01(7.75E-06)
WFG5	5	4.48E-01(9.49E-04)†	6.75E-01(1.21E-03)†	6.64E-01(2.62E-04)†	4.97E-01(4.97E-05)†	6.68E-01(1.47E-04)†	7.93E-01(1.13E-04)
	25	6.57E-01(3.60E-04)†	7.18E-01(4.32E-04)†	6.66E-01(4.35E-05)†	5.17E-01(6.58E-05)†	7.20E-01(4.90E-06)†	8.13E-01(1.32E-05)
	50	6.82E-01(1.83E-05)†	7.17E-01(2.07E-04)†	6.67E-01(6.82E-05)†	5.20E-01(6.82E-05)†	7.30E-01(2.98E-06)†	8.17E-01(1.54E-05)
	200	6.85E-01(2.65E-05)†	7.17E-01(1.42E-04)†	6.69E-01(5.60E-05)†	5.27E-01(3.69E-05)†	7.32E-01(1.45E-07)†	8.22E-01(1.24E-05)
WFG6	5	3.87E-01(4.40E-04)†	6.15E-01(9.14E-04)†	5.60E-01(4.26E-04)†	1.19E-01(4.28E-07)†	6.08E-01(7.55E-04)†	7.79E-01(1.15E-03)
	25	6.04E-01(6.49E-04)†	7.05E-01(8.01E-05)†	6.44E-01(4.65E-04)†	1.22E-01(4.65E-06)†	6.87E-01(2.03E-03)†	7.96E-01(4.63E-04)
	50	6.57E-01(4.00E-04)†	7.16E-01(3.74E-05)†	6.47E-01(3.52E-04)†	1.22E-01(2.67E-08)†	6.75E-01(3.22E-03)†	7.98E-01(3.93E-04)
	200	6.75E-01(4.24E-04)†	7.36E-01(8.39E-06)†	6.45E-01(4.21E-04)†	1.21E-01(1.19E-08)†	6.79E-01(2.74E-03)†	8.04E-01(4.70E-04)
WFG7	5	6.90E-01(4.30E-04)†	6.03E-01(6.58E-04)†	6.61E-01(3.79E-04)†	5.41E-01(4.04E-04)†	7.09E-01(4.19E-04)†	8.74E-01(1.58E-05)
	25	7.35E-01(7.29E-05)†	7.03E-01(3.70E-04)†	7.10E-01(1.08E-04)†	6.26E-01(3.51E-04)†	7.60E-01(1.28E-06)†	8.75E-01(1.11E-05)
	50	7.33E-01(4.64E-05)†	7.30E-01(1.69E-04)†	7.08E-01(8.95E-05)†	6.29E-01(1.14E-04)†	7.62E-01(2.21E-07)†	8.79E-01(3.49E-06)
	200	7.34E-01(6.45E-05)†	7.61E-01(1.30E-04)†	7.07E-01(2.30E-04)†	6.33E-01(7.97E-05)†	7.65E-01(1.08E-08)†	8.79E-01(2.21E-06)
WFG8	5	6.93E-01(5.61E-04)†	6.00E-01(7.17E-04)†	6.65E-01(7.04E-04)†	5.44E-01(3.99E-04)†	7.07E-01(3.25E-04)†	8.75E-01(6.05E-06)
	25	7.37E-01(1.06E-04)†	7.04E-01(2.55E-04)†	7.10E-01(1.61E-04)†	6.31E-01(3.98E-04)†	7.60E-01(2.28E-06)†	8.76E-01(6.89E-06)
	50	7.33E-01(5.09E-05)†	7.29E-01(2.16E-04)†	7.10E-01(8.69E-05)†	6.29E-01(1.15E-04)†	7.62E-01(1.44E-06)†	8.79E-01(2.93E-06)
	200	7.33E-01(7.53E-05)†	7.56E-01(7.27E-05)†	7.09E-01(1.23E-04)†	6.33E-01(7.11E-05)†	7.65E-01(1.06E-08)†	8.79E-01(3.31E-06)
WFG9	5	3.20E-01(3.99E-03)†	4.35E-01(5.63E-04)†	4.38E-01(6.64E-05)†	5.92E-01(3.06E-02)‡	4.51E-01(1.71E-04)	4.46E-01(1.11E-03)
	25	3.93E-01(3.00E-03)†	4.62E-01(2.38E-04)	4.36E-01(9.21E-05)†	6.27E-01(3.08E-02)‡	4.63E-01(1.94E-04)	4.52E-01(2.32E-03)
	50	4.05E-01(1.50E-03)†	4.65E-01(2.22E-04)‡	4.31E-01(6.37E-05)†	5.64E-01(3.32E-02)	4.64E-01(1.66E-04)‡	4.40E-01(1.90E-03)
	200	4.28E-01(6.27E-04)†	4.76E-01(1.83E-04)‡	4.34E-01(5.08E-05)†	5.65E-01(3.98E-02)	4.61E-01(1.84E-04)	4.48E-01(1.50E-03)

TABLE 21
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 5 TO 6 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	9.81E-01(6.69E-06)†	9.94E-01(6.54E-06)†	9.74E-01(6.30E-06)†	9.16E-02(1.73E-02)†	9.83E-01(9.20E-05)†	1.00E+00(5.08E-11)
	25	9.99E-01(1.99E-07)†	1.00E+00(4.71E-10)†	9.98E-01(7.26E-07)†	0.00E+00(0.00E+00)†	1.00E+00(2.40E-09)†	1.00E+00(4.85E-10)
	50	1.00E+00(8.29E-09)†	1.00E+00(5.34E-12)†	1.00E+00(1.02E-07)†	0.00E+00(0.00E+00)†	1.00E+00(3.42E-10)†	1.00E+00(2.91E-11)
	200	7.30E-01(1.37E-01)†	1.00E+00(3.06E-13)†	2.71E-01(1.31E-01)†	0.00E+00(0.00E+00)†	1.00E+00(3.59E-10)†	1.00E+00(1.38E-10)
F2	5	8.42E-01(4.79E-04)†	9.78E-01(9.12E-06)†	9.57E-01(2.98E-05)†	2.72E-01(6.19E-02)†	9.76E-01(9.01E-06)†	9.93E-01(5.19E-06)
	25	9.68E-01(1.98E-05)†	9.86E-01(5.38E-07)†	9.81E-01(5.77E-06)†	0.00E+00(0.00E+00)†	9.88E-01(8.55E-08)†	9.92E-01(3.25E-06)
	50	9.78E-01(6.66E-06)†	9.87E-01(1.30E-07)†	9.81E-01(9.50E-06)†	0.00E+00(0.00E+00)†	9.88E-01(1.72E-08)†	9.94E-01(2.58E-06)
	200	9.80E-01(1.23E-05)†	9.88E-01(2.52E-08)†	9.76E-01(2.86E-05)†	0.00E+00(0.00E+00)†	9.89E-01(4.81E-09)†	9.94E-01(3.33E-06)
F3	5	7.86E-01(3.51E-04)†	9.32E-01(2.47E-04)†	7.44E-01(2.35E-04)†	2.72E-01(6.19E-02)†	8.20E-01(7.44E-04)†	9.95E-01(1.02E-06)
	25	9.41E-01(1.28E-04)†	9.85E-01(3.50E-07)†	9.18E-01(1.28E-04)†	0.00E+00(0.00E+00)†	9.83E-01(9.95E-06)†	9.89E-01(2.54E-05)
	50	9.68E-01(2.43E-05)†	9.86E-01(2.39E-07)†	9.52E-01(7.86E-05)†	0.00E+00(0.00E+00)†	9.87E-01(2.47E-06)†	9.94E-01(5.91E-06)
	200	7.27E-01(7.26E-02)†	9.87E-01(2.97E-08)†	3.21E-01(1.32E-01)†	0.00E+00(0.00E+00)†	9.87E-01(4.20E-06)†	9.92E-01(2.76E-04)
F4	5	8.13E-01(8.86E-04)†	8.37E-01(2.82E-03)†	9.19E-01(1.92E-03)	9.28E-01(1.30E-03)‡	9.73E-01(3.02E-05)‡	9.08E-01(2.34E-03)
	25	9.84E-01(1.19E-05)‡	9.76E-01(1.21E-03)‡	9.82E-01(5.25E-06)‡	9.82E-01(4.00E-06)‡	9.90E-01(2.08E-08)‡	9.22E-01(1.38E-03)
	50	9.85E-01(2.45E-06)‡	9.89E-01(8.94E-06)‡	9.75E-01(1.22E-05)‡	9.85E-01(1.11E-05)‡	9.91E-01(3.94E-09)‡	9.11E-01(2.51E-03)
	200	9.66E-01(5.12E-05)‡	9.90E-01(4.96E-09)‡	9.60E-01(5.68E-05)	9.87E-01(8.00E-08)‡	9.91E-01(2.19E-10)‡	9.26E-01(2.82E-03)
WFG1	5	9.52E-01(1.38E-04)†	9.01E-01(2.05E-04)†	9.34E-01(1.15E-04)†	3.95E-01(6.29E-03)†	9.51E-01(1.02E-04)†	9.94E-01(4.64E-06)
	25	9.86E-01(1.34E-05)†	9.33E-01(1.19E-04)†	9.85E-01(2.24E-05)†	4.58E-01(1.23E-03)†	9.89E-01(6.54E-06)†	9.95E-01(2.27E-06)
	50	9.90E-01(7.66E-06)†	9.44E-01(7.39E-05)†	9.89E-01(2.56E-06)†	4.34E-01(8.16E-03)†	9.93E-01(7.55E-06)†	9.95E-01(1.14E-06)
	200	9.94E-01(2.54E-07)†	9.57E-01(1.54E-05)†	9.94E-01(3.41E-07)†	3.20E-01(1.54E-02)†	9.96E-01(2.99E-07)‡	9.95E-01(4.26E-07)
WFG2	5	9.50E-01(2.76E-04)†	9.28E-01(1.09E-04)†	9.81E-01(3.25E-05)†	2.05E-01(1.96E-06)†	9.90E-01(2.18E-06)†	9.99E-01(1.59E-08)
	25	9.94E-01(1.45E-06)†	9.63E-01(1.33E-05)†	9.95E-01(8.27E-07)†	2.06E-01(2.85E-06)†	9.99E-01(3.38E-09)†	9.99E-01(2.80E-08)
	50	9.96E-01(2.91E-07)†	9.73E-01(4.60E-06)†	9.96E-01(4.64E-07)†	2.04E-01(1.33E-09)†	9.99E-01(1.35E-09)†	9.99E-01(1.50E-08)
	200	9.96E-01(2.09E-07)†	9.85E-01(1.29E-06)†	9.96E-01(3.34E-07)†	2.04E-01(8.44E-10)†	9.99E-01(2.42E-10)†	9.99E-01(1.99E-08)
WFG3	5	6.64E-01(1.89E-09)†	6.72E-01(6.31E-05)†	6.98E-01(1.10E-05)‡	2.17E-01(3.29E-07)†	6.88E-01(7.28E-06)‡	6.81E-01(7.02E-05)
	25	6.66E-01(2.48E-05)†	6.83E-01(2.87E-05)	6.99E-01(4.83E-05)‡	2.19E-01(5.31E-08)†	6.93E-01(6.21E-06)‡	6.83E-01(1.75E-04)
	50	6.82E-01(1.26E-04)†	6.87E-01(2.59E-05)	6.98E-01(6.62E-05)‡	2.20E-01(2.97E-08)†	6.88E-01(4.33E-05)	6.89E-01(9.75E-05)
	200	7.02E-01(5.39E-05)†	6.95E-01(2.44E-05)	6.97E-01(8.94E-05)‡	2.20E-01(2.09E-08)†	6.86E-01(5.65E-05)	6.88E-01(1.45E-04)
WFG4	5	5.89E-01(1.33E-03)†	7.14E-01(1.95E-04)†	6.59E-01(2.24E-04)†	2.71E-01(4.74E-04)†	7.25E-01(2.26E-04)†	8.85E-01(7.41E-06)
	25	7.48E-01(9.08E-05)†	7.51E-01(3.25E-04)†	7.07E-01(2.14E-04)†	2.85E-01(1.07E-04)†	8.44E-01(1.94E-06)†	8.85E-01(8.05E-05)
	50	7.54E-01(8.05E-05)†	7.70E-01(7.55E-05)†	7.11E-01(2.08E-04)†	2.87E-01(9.80E-05)†	8.49E-01(4.82E-07)†	8.98E-01(6.48E-06)
	200	7.64E-01(1.01E-04)†	7.98E-01(6.50E-05)†	7.18E-01(1.50E-04)†	2.68E-01(2.23E-05)†	8.49E-01(1.30E-07)†	8.99E-01(8.65E-06)
WFG5	5	4.78E-01(1.19E-03)†	6.76E-01(6.99E-04)†	6.67E-01(1.69E-04)†	4.87E-01(2.14E-05)†	7.19E-01(1.75E-04)†	8.03E-01(1.10E-04)
	25	6.93E-01(1.80E-04)†	7.30E-01(4.12E-04)†	6.86E-01(1.52E-04)†	4.97E-01(2.78E-05)†	7.88E-01(2.66E-06)†	8.22E-01(2.22E-04)
	50	7.14E-01(4.55E-05)†	7.37E-01(2.03E-04)†	6.88E-01(1.37E-04)†	4.93E-01(3.19E-05)†	7.96E-01(7.66E-06)†	8.34E-01(1.34E-04)
	200	7.19E-01(1.11E-04)†	7.57E-01(4.35E-05)†	6.93E-01(8.94E-05)†	4.94E-01(3.64E-05)†	8.00E-01(4.25E-07)†	8.42E-01(1.16E-04)
WFG6	5	3.98E-01(5.57E-04)†	6.12E-01(5.06E-04)†	5.97E-01(6.08E-04)†	9.94E-02(2.89E-06)†	6.55E-01(6.14E-04)†	7.89E-01(1.04E-03)
	25	6.37E-01(6.19E-04)†	7.02E-01(3.28E-04)†	6.63E-01(5.87E-04)†	1.02E-01(1.23E-05)†	7.44E-01(3.08E-03)†	8.03E-01(1.04E-03)
	50	6.81E-01(5.44E-04)†	7.29E-01(2.43E-04)†	6.68E-01(4.48E-04)†	1.00E-01(2.26E-06)†	7.28E-01(5.05E-03)†	8.11E-01(7.20E-04)
	200	7.28E-01(2.31E-04)†	7.79E-01(9.92E-05)†	6.95E-01(2.25E-04)†	1.01E-01(1.61E-05)†	7.31E-01(4.44E-03)†	8.12E-01(8.84E-04)
WFG7	5	7.55E-01(3.61E-04)†	5.76E-01(1.06E-03)†	7.22E-01(4.29E-04)†	5.31E-01(6.89E-04)†	7.82E-01(2.28E-04)†	9.04E-01(1.05E-05)
	25	7.72E-01(9.71E-05)†	6.98E-01(4.77E-04)†	7.28E-01(2.43E-04)†	6.82E-01(3.00E-04)†	8.37E-01(1.08E-06)†	9.06E-01(7.62E-06)
	50	7.68E-01(6.84E-05)†	7.36E-01(2.66E-04)†	7.28E-01(9.38E-05)†	6.92E-01(2.18E-04)†	8.38E-01(4.60E-07)†	9.11E-01(4.21E-06)
	200	7.70E-01(5.13E-05)†	7.95E-01(2.37E-04)†	7.22E-01(1.24E-04)†	7.29E-01(5.62E-05)†	8.40E-01(4.45E-08)†	9.12E-01(2.82E-06)
WFG8	5	7.50E-01(2.76E-04)†	5.54E-01(1.49E-03)†	7.22E-01(4.67E-04)†	5.23E-01(7.54E-04)†	7.89E-01(4.02E-04)†	9.05E-01(2.30E-05)
	25	7.70E-01(8.24E-05)†	6.98E-01(7.24E-04)†	7.29E-01(2.36E-04)†	6.79E-01(4.99E-04)†	8.37E-01(2.00E-06)†	9.06E-01(7.35E-06)
	50	7.67E-01(6.71E-05)†	7.39E-01(2.40E-04)†	7.28E-01(2.90E-04)†	6.90E-01(2.36E-04)†	8.38E-01(3.04E-07)†	9.11E-01(3.17E-06)
	200	7.75E-01(6.09E-05)†	7.98E-01(1.05E-04)†	7.24E-01(2.17E-04)†	7.32E-01(7.65E-05)†	8.39E-01(4.75E-08)†	9.13E-01(3.94E-06)
WFG9	5	2.94E-01(4.27E-03)†	3.36E-01(1.91E-03)†	4.08E-01(5.55E-05)	5.78E-01(2.93E-02)‡	4.31E-01(9.00E-05)‡	4.01E-01(1.51E-03)
	25	3.65E-01(2.38E-03)†	4.01E-01(9.71E-04)	4.06E-01(6.25E-05)	6.53E-01(3.05E-02)‡	4.44E-01(1.15E-04)‡	4.00E-01(2.38E-03)
	50	3.81E-01(1.87E-03)	4.21E-01(2.13E-04)‡	4.06E-01(6.03E-05)	5.80E-01(3.75E-02)‡	4.45E-01(1.25E-04)‡	3.95E-01(2.28E-03)
	200	4.05E-01(4.96E-04)	4.38E-01(1.15E-04)‡	4.09E-01(3.67E-05)	6.21E-01(3.40E-02)‡	4.53E-01(2.42E-04)‡	4.08E-01(1.97E-03)
+-=		44/6/2	38/10/4	44/5/3	45/5/2	35/7/10	—

TABLE 22
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 6 TO 7 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	9.85E-01(1.00E-05)†	9.96E-01(4.04E-06)†	9.77E-01(1.17E-05)†	7.28E-02(1.51E-02)†	9.89E-01(3.55E-05)†	1.00E+00(3.57E-11)
	25	1.00E+00(1.05E-08)†	1.00E+00(1.21E-10)	9.99E-01(2.28E-07)†	0.00E+00(0.00E+00)†	1.00E+00(6.79E-09)†	1.00E+00(4.01E-10)
	50	1.00E+00(1.05E-06)†	1.00E+00(4.10E-13)	1.00E+00(1.85E-07)†	0.00E+00(0.00E+00)†	1.00E+00(4.12E-10)†	1.00E+00(8.08E-11)
	200	4.60E-01(1.34E-01)†	1.00E+00(3.12E-14)‡	4.92E-03(7.26E-04)†	0.00E+00(0.00E+00)†	1.00E+00(1.27E-10)†	1.00E+00(1.84E-11)
F2	5	8.78E-01(4.36E-04)†	9.90E-01(4.70E-06)‡	9.69E-01(1.55E-05)†	1.71E-01(4.50E-02)†	9.87E-01(1.30E-06)†	9.96E-01(1.65E-06)
	25	9.79E-01(1.38E-05)†	9.95E-01(1.07E-07)†	9.82E-01(1.25E-05)†	0.00E+00(0.00E+00)†	9.95E-01(1.53E-08)†	9.96E-01(1.32E-06)
	50	9.77E-01(3.11E-05)†	9.95E-01(2.64E-08)†	9.67E-01(4.64E-05)†	8.57E-03(2.21E-03)†	9.96E-01(7.39E-09)†	9.97E-01(5.78E-07)
	200	9.44E-01(1.12E-04)†	9.96E-01(3.70E-09)†	9.46E-01(1.20E-04)†	0.00E+00(0.00E+00)†	9.96E-01(5.91E-10)†	9.97E-01(1.21E-06)
F3	5	8.09E-01(4.61E-04)†	9.64E-01(6.47E-05)†	7.64E-01(4.03E-04)†	1.71E-01(4.50E-02)†	8.63E-01(4.77E-04)†	9.98E-01(2.71E-06)
	25	9.66E-01(2.32E-05)†	9.94E-01(4.82E-08)‡	9.49E-01(1.94E-04)†	0.00E+00(0.00E+00)†	9.91E-01(6.23E-06)	9.92E-01(7.29E-06)
	50	9.73E-01(8.78E-05)†	9.94E-01(2.61E-08)†	9.64E-01(2.16E-04)†	0.00E+00(0.00E+00)†	9.94E-01(7.55E-07)†	9.96E-01(8.52E-05)
	200	1.26E-01(3.57E-02)†	9.95E-01(3.88E-09)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	9.94E-01(8.41E-07)†	9.97E-01(2.72E-06)
F4	5	8.31E-01(2.03E-03)†	8.85E-01(3.69E-03)†	9.70E-01(3.40E-04)‡	9.65E-01(1.57E-04)‡	9.88E-01(7.53E-06)‡	9.22E-01(3.25E-03)
	25	9.90E-01(2.70E-06)‡	9.94E-01(5.95E-06)‡	9.71E-01(3.31E-05)‡	9.89E-01(9.84E-06)‡	9.96E-01(2.75E-06)‡	9.43E-01(1.11E-03)
	50	9.66E-01(1.67E-04)‡	9.96E-01(9.92E-07)‡	9.33E-01(1.87E-04)	9.91E-01(7.66E-06)‡	9.96E-01(6.66E-10)‡	9.30E-01(2.27E-03)
	200	8.51E-01(5.75E-04)†	9.96E-01(5.45E-10)‡	8.85E-01(2.34E-04)†	9.94E-01(5.90E-07)‡	9.97E-01(5.52E-11)‡	9.42E-01(2.68E-03)
WFG1	5	9.71E-01(4.29E-05)†	9.26E-01(1.03E-04)†	9.55E-01(9.36E-05)†	2.28E-01(3.32E-03)†	9.66E-01(6.67E-05)†	9.94E-01(2.07E-06)
	25	9.89E-01(1.57E-05)†	9.43E-01(5.09E-05)†	9.87E-01(2.78E-05)†	2.12E-01(1.76E-03)†	9.91E-01(6.56E-06)†	9.95E-01(3.51E-06)
	50	9.92E-01(3.21E-06)†	9.52E-01(5.85E-05)†	9.91E-01(1.83E-06)†	2.04E-01(1.62E-03)†	9.94E-01(5.17E-06)	9.95E-01(1.44E-06)
	200	9.96E-01(4.06E-07)	9.61E-01(1.93E-05)‡	9.95E-01(2.91E-07)	1.83E-01(1.66E-03)†	9.96E-01(3.45E-07)‡	9.95E-01(5.86E-07)
WFG2	5	9.68E-01(1.15E-04)†	9.37E-01(7.58E-05)†	9.88E-01(4.15E-06)†	1.70E-01(2.28E-06)†	9.94E-01(1.86E-06)†	1.00E+00(3.67E-08)
	25	9.96E-01(8.55E-07)†	9.70E-01(1.22E-05)†	9.96E-01(6.28E-07)†	1.67E-01(5.95E-09)†	1.00E+00(2.17E-09)†	1.00E+00(2.37E-09)
	50	9.97E-01(4.24E-07)†	9.78E-01(4.55E-06)†	9.97E-01(7.00E-07)†	1.67E-01(3.31E-09)†	1.00E+00(4.36E-10)†	1.00E+00(1.51E-09)
	200	9.98E-01(1.30E-07)†	9.89E-01(1.33E-06)†	9.97E-01(3.15E-07)†	1.67E-01(3.35E-09)†	1.00E+00(4.43E-11)‡	1.00E+00(1.07E-09)
WFG3	5	6.54E-01(5.02E-09)†	6.47E-01(2.72E-04)†	6.92E-01(2.23E-05)‡	1.79E-01(2.47E-07)†	6.87E-01(1.12E-05)‡	6.73E-01(1.20E-04)
	25	6.65E-01(1.11E-04)	6.60E-01(8.88E-05)	6.87E-01(5.12E-05)‡	1.81E-01(4.61E-08)†	6.80E-01(5.78E-05)‡	6.61E-01(2.67E-04)
	50	6.92E-01(9.92E-05)‡	6.68E-01(4.51E-05)	6.87E-01(3.85E-05)‡	1.81E-01(1.48E-08)†	6.73E-01(4.57E-05)‡	6.63E-01(2.99E-04)
	200	6.97E-01(5.33E-05)‡	6.79E-01(1.73E-05)‡	6.88E-01(3.79E-05)‡	1.82E-01(1.15E-08)†	6.70E-01(4.89E-05)‡	6.62E-01(1.49E-04)
WFG4	5	6.26E-01(8.07E-04)†	7.02E-01(3.03E-04)†	6.50E-01(2.04E-04)†	2.58E-01(3.78E-04)†	7.58E-01(1.98E-04)†	8.99E-01(2.06E-05)
	25	7.50E-01(2.13E-04)†	7.26E-01(5.05E-04)†	6.84E-01(3.19E-04)†	2.83E-01(1.42E-04)†	8.89E-01(2.74E-06)	8.91E-01(1.15E-04)
	50	7.52E-01(2.83E-04)†	7.43E-01(3.33E-04)†	6.87E-01(3.52E-04)†	2.75E-01(1.64E-04)†	8.95E-01(2.40E-07)†	9.18E-01(9.71E-06)
	200	7.63E-01(3.94E-04)†	7.91E-01(1.86E-04)†	7.02E-01(3.08E-04)†	2.59E-01(1.27E-05)†	8.92E-01(2.84E-07)†	9.22E-01(1.11E-05)
WFG5	5	5.19E-01(1.36E-03)†	6.73E-01(4.45E-04)†	6.44E-01(1.47E-04)†	4.64E-01(3.42E-05)†	7.51E-01(1.03E-04)†	7.96E-01(1.24E-04)
	25	7.04E-01(2.18E-04)†	6.86E-01(4.57E-04)†	6.72E-01(3.78E-04)†	4.65E-01(4.19E-05)†	8.29E-01(2.82E-06)†	8.49E-01(2.72E-04)
	50	7.12E-01(1.72E-04)†	7.00E-01(2.29E-04)†	6.74E-01(2.99E-04)†	4.59E-01(5.65E-05)†	8.36E-01(3.01E-06)†	8.67E-01(5.28E-05)
	200	7.25E-01(3.03E-04)†	7.35E-01(5.46E-05)†	6.89E-01(3.38E-04)†	4.56E-01(2.62E-05)†	8.43E-01(5.74E-07)†	8.75E-01(1.25E-05)
WFG6	5	4.14E-01(8.75E-04)†	5.92E-01(1.14E-03)†	5.91E-01(9.56E-04)†	8.36E-02(1.50E-05)†	6.70E-01(7.39E-04)†	7.79E-01(1.29E-03)
	25	6.44E-01(6.85E-04)†	6.60E-01(3.00E-04)†	6.61E-01(9.25E-04)†	8.42E-02(3.18E-05)†	7.75E-01(3.91E-03)	8.00E-01(1.33E-03)
	50	6.97E-01(5.19E-04)†	6.84E-01(3.23E-04)†	6.84E-01(5.86E-04)†	8.31E-02(2.87E-05)†	7.56E-01(6.61E-03)†	8.11E-01(8.86E-04)
	200	7.55E-01(2.25E-04)†	7.44E-01(3.24E-04)†	7.14E-01(2.40E-04)†	8.47E-02(3.77E-05)†	7.75E-01(4.26E-03)†	8.15E-01(1.11E-03)
WFG7	5	7.76E-01(3.01E-04)†	5.81E-01(1.59E-03)†	7.29E-01(3.98E-04)†	5.18E-01(1.01E-03)†	8.38E-01(1.94E-04)†	9.05E-01(1.94E-05)
	25	7.70E-01(2.20E-04)†	7.02E-01(7.45E-04)†	7.18E-01(1.91E-04)†	7.05E-01(4.81E-04)†	8.88E-01(1.06E-06)†	9.13E-01(8.16E-06)
	50	7.75E-01(8.46E-05)†	7.46E-01(5.11E-04)†	7.20E-01(1.58E-04)†	7.50E-01(3.08E-04)†	8.86E-01(2.38E-07)†	9.16E-01(9.35E-06)
	200	7.92E-01(9.20E-05)†	8.02E-01(2.58E-04)†	7.20E-01(1.81E-04)†	7.87E-01(1.13E-04)†	8.86E-01(7.53E-08)†	9.18E-01(9.63E-06)
WFG8	5	7.73E-01(1.85E-04)†	5.58E-01(3.21E-03)†	7.34E-01(4.14E-04)†	5.15E-01(1.26E-03)†	8.40E-01(1.52E-04)†	9.05E-01(1.76E-05)
	25	7.74E-01(1.96E-04)†	7.11E-01(6.19E-04)†	7.15E-01(3.65E-04)†	6.98E-01(5.20E-04)†	8.88E-01(1.23E-06)†	9.13E-01(6.10E-06)
	50	7.77E-01(1.81E-04)†	7.52E-01(5.12E-04)†	7.15E-01(4.74E-04)†	7.44E-01(5.19E-04)†	8.86E-01(6.78E-07)†	9.15E-01(1.21E-05)
	200	7.94E-01(5.85E-05)†	8.01E-01(1.78E-04)†	7.20E-01(5.01E-04)†	7.88E-01(1.41E-04)†	8.86E-01(6.48E-08)†	9.18E-01(9.60E-06)
WFG9	5	2.51E-01(3.46E-03)†	2.37E-01(1.58E-03)†	3.62E-01(4.27E-05)	5.70E-01(2.83E-02)‡	3.90E-01(8.51E-05)‡	3.42E-01(1.25E-03)
	25	3.27E-01(1.67E-03)†	2.94E-01(7.44E-04)†	3.61E-01(2.94E-05)	6.65E-01(2.28E-02)‡	4.07E-01(9.05E-05)‡	3.44E-01(2.24E-03)
	50	3.39E-01(8.11E-04)	3.16E-01(6.18E-04)†	3.60E-01(6.05E-05)	6.17E-01(2.82E-02)‡	4.15E-01(8.75E-05)‡	3.43E-01(2.01E-03)
	200	3.72E-01(6.84E-03)†	3.44E-01(1.66E-04)†	5.05E-01(2.89E-02)‡	6.62E-01(2.44E-02)‡	4.32E-01(3.28E-04)‡	3.74E-01(8.70E-04)
+-=		45/3/4	40/9/3	48/1/3	20/31/1	33/6/13	—

TABLE 23
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 7 TO 6 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	9.89E-01(1.36E-05)†	9.92E-01(1.28E-05)†	9.80E-01(1.34E-05)†	3.37E-03(3.41E-04)†	9.92E-01(1.96E-05)†	1.00E+00(3.71E-11)
	25	9.98E-01(1.10E-05)†	9.92E-01(1.90E-05)†	9.94E-01(5.37E-05)†	0.00E+00(0.00E+00)†	1.00E+00(4.78E-08)†	1.00E+00(6.18E-10)
	50	4.67E-01(1.75E-01)†	9.88E-01(7.09E-05)†	3.12E-02(2.29E-02)†	0.00E+00(0.00E+00)†	9.91E-01(1.64E-03)†	1.00E+00(4.15E-11)
	200	2.42E-02(1.76E-02)†	9.84E-01(1.69E-04)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	9.69E-01(4.05E-03)†	1.00E+00(2.65E-11)
F2	5	9.19E-01(1.88E-04)†	9.90E-01(5.69E-07)†	9.70E-01(1.83E-05)†	1.26E-01(2.55E-02)†	9.91E-01(7.29E-07)†	9.94E-01(1.21E-06)
	25	9.64E-01(3.76E-05)†	9.93E-01(8.19E-08)	9.25E-01(1.40E-04)†	9.44E-03(8.84E-04)†	9.95E-01(2.39E-08)‡	9.92E-01(1.66E-06)
	50	8.91E-01(5.33E-04)†	9.93E-01(9.83E-08)†	8.80E-01(1.88E-04)†	5.38E-02(1.11E-02)†	9.95E-01(1.10E-08)	9.95E-01(2.80E-07)
	200	8.32E-01(1.16E-03)†	9.94E-01(5.20E-08)†	8.68E-01(1.11E-04)†	1.97E-01(6.24E-02)†	9.95E-01(3.03E-08)	9.94E-01(5.26E-07)
F3	5	8.48E-01(5.32E-04)†	9.41E-01(3.22E-04)†	7.88E-01(5.62E-04)†	1.26E-01(2.55E-02)†	8.87E-01(5.60E-04)†	9.95E-01(1.72E-06)
	25	9.38E-01(4.09E-04)†	8.60E-01(3.37E-03)†	8.82E-01(1.78E-03)†	0.00E+00(0.00E+00)†	9.83E-01(9.98E-05)†	9.89E-01(1.01E-05)
	50	2.51E-01(6.41E-02)†	8.03E-01(1.12E-02)†	8.69E-02(3.43E-02)†	0.00E+00(0.00E+00)†	9.43E-01(2.78E-03)†	9.95E-01(6.10E-07)
	200	1.23E-02(4.54E-03)†	7.93E-01(5.28E-03)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	8.10E-01(3.59E-02)†	9.95E-01(2.87E-07)
F4	5	8.85E-01(3.06E-03)†	9.29E-01(1.99E-03)	9.81E-01(1.70E-05)‡	9.66E-01(1.01E-04)‡	9.92E-01(2.38E-06)‡	9.33E-01(2.50E-03)
	25	9.38E-01(3.01E-04)	9.96E-01(1.60E-07)‡	8.09E-01(6.72E-04)†	9.84E-01(5.23E-06)‡	9.96E-01(5.68E-08)‡	9.39E-01(1.13E-03)
	50	6.95E-01(2.10E-03)†	9.95E-01(1.03E-07)‡	7.50E-01(1.13E-03)†	9.84E-01(2.34E-05)‡	9.96E-01(1.74E-08)‡	9.40E-01(2.01E-03)
	200	6.01E-01(7.29E-04)†	9.95E-01(3.46E-08)‡	7.27E-01(2.36E-03)†	9.80E-01(1.79E-05)‡	9.95E-01(7.59E-08)‡	9.34E-01(3.09E-03)
WFG1	5	9.75E-01(3.78E-05)†	8.97E-01(1.19E-04)†	9.60E-01(1.17E-04)†	3.93E-01(8.82E-03)†	9.67E-01(6.75E-05)†	9.94E-01(4.62E-06)
	25	9.83E-01(1.03E-05)†	8.94E-01(1.41E-04)†	9.77E-01(2.79E-05)†	3.10E-01(1.47E-02)†	9.90E-01(5.10E-06)†	9.95E-01(2.16E-06)
	50	9.77E-01(4.03E-05)†	8.94E-01(1.44E-04)†	9.70E-01(5.41E-05)†	3.32E-01(1.43E-02)†	9.90E-01(9.45E-06)†	9.95E-01(1.11E-06)
	200	9.22E-01(2.26E-04)†	8.97E-01(4.38E-05)†	9.15E-01(2.31E-04)†	2.68E-01(8.59E-03)†	9.32E-01(1.98E-04)†	9.96E-01(4.90E-07)
WFG2	5	9.77E-01(5.47E-05)†	9.30E-01(5.78E-05)†	9.89E-01(3.47E-06)†	2.09E-01(2.41E-07)†	9.94E-01(1.25E-06)†	9.99E-01(3.36E-08)
	25	9.92E-01(4.26E-06)†	9.10E-01(2.30E-04)†	9.86E-01(1.98E-05)†	2.06E-01(4.05E-08)†	9.99E-01(1.21E-08)†	1.00E+00(2.34E-09)
	50	9.86E-01(2.74E-05)†	9.12E-01(1.83E-04)†	9.75E-01(5.82E-05)†	2.06E-01(1.03E-07)†	9.99E-01(8.24E-09)†	1.00E+00(2.12E-09)
	200	9.43E-01(2.37E-03)†	9.14E-01(1.37E-04)†	9.02E-01(2.88E-03)†	2.05E-01(7.47E-07)†	9.96E-01(1.93E-06)†	1.00E+00(8.06E-10)
WFG3	5	6.64E-01(4.00E-08)†	5.92E-01(5.00E-04)†	6.86E-01(5.29E-05)‡	2.17E-01(3.78E-07)†	6.77E-01(1.65E-05)	6.79E-01(3.57E-05)
	25	6.75E-01(1.34E-04)‡	6.12E-01(2.61E-04)†	6.62E-01(8.59E-05)	2.19E-01(3.73E-08)†	6.58E-01(1.41E-04)†	6.67E-01(1.60E-04)
	50	6.77E-01(2.21E-04)‡	6.19E-01(2.32E-04)†	6.49E-01(3.05E-04)†	2.19E-01(2.14E-07)†	6.41E-01(2.94E-04)†	6.66E-01(2.63E-04)
	200	6.47E-01(1.11E-03)	6.14E-01(4.25E-04)†	6.11E-01(6.54E-04)†	2.17E-01(1.98E-06)†	5.99E-01(3.91E-04)†	6.64E-01(1.06E-04)
WFG4	5	6.87E-01(6.95E-04)†	5.12E-01(2.13E-03)†	6.60E-01(2.25E-04)†	2.75E-01(4.90E-04)†	8.15E-01(1.28E-04)†	8.85E-01(1.56E-05)
	25	7.44E-01(2.18E-04)†	5.80E-01(6.78E-04)†	6.59E-01(4.76E-04)†	3.12E-01(1.45E-04)†	9.15E-01(1.15E-06)‡	8.85E-01(3.21E-05)
	50	7.37E-01(4.18E-04)†	6.00E-01(8.12E-04)†	6.48E-01(2.85E-04)†	2.96E-01(1.13E-04)†	9.16E-01(1.28E-06)‡	9.04E-01(7.08E-06)
	200	7.64E-01(5.67E-04)†	6.79E-01(3.71E-04)†	6.69E-01(3.47E-04)†	3.05E-01(2.06E-05)†	9.09E-01(2.81E-06)‡	9.07E-01(5.64E-06)
WFG5	5	5.86E-01(1.03E-03)†	5.77E-01(2.24E-03)†	6.41E-01(1.37E-04)†	4.83E-01(2.88E-05)†	8.07E-01(6.17E-05)†	8.20E-01(3.50E-05)
	25	7.08E-01(2.33E-04)†	5.85E-01(8.08E-04)†	6.41E-01(3.55E-04)†	4.85E-01(2.33E-05)†	8.53E-01(9.54E-06)‡	8.44E-01(2.29E-05)
	50	6.94E-01(2.69E-04)†	5.91E-01(5.17E-04)†	6.40E-01(2.47E-04)†	4.82E-01(3.77E-05)†	8.61E-01(7.80E-06)‡	8.60E-01(1.37E-05)
	200	6.90E-01(2.58E-04)†	6.53E-01(1.58E-04)†	6.49E-01(2.90E-04)†	4.77E-01(1.77E-05)†	8.70E-01(4.40E-06)‡	8.63E-01(3.45E-06)
WFG6	5	4.96E-01(7.56E-04)†	4.50E-01(2.33E-03)†	6.12E-01(9.41E-04)†	1.05E-01(1.55E-05)†	4.59E-01(5.34E-02)†	7.93E-01(9.78E-04)
	25	6.93E-01(5.07E-04)†	5.06E-01(1.03E-03)†	6.23E-01(4.57E-04)†	1.07E-01(3.36E-05)†	5.22E-01(6.82E-02)†	8.07E-01(1.06E-03)
	50	6.95E-01(6.15E-04)†	5.22E-01(4.74E-04)†	6.23E-01(9.95E-04)†	1.09E-01(2.43E-05)†	4.89E-01(6.34E-02)†	8.13E-01(6.38E-04)
	200	6.58E-01(7.32E-04)†	5.56E-01(5.56E-04)†	6.07E-01(6.62E-04)†	1.10E-01(1.76E-05)†	5.01E-01(5.75E-02)†	8.16E-01(7.81E-04)
WFG7	5	7.81E-01(3.20E-04)†	4.01E-01(1.17E-03)†	7.10E-01(2.96E-04)†	5.27E-01(7.63E-04)†	8.83E-01(3.26E-05)†	9.06E-01(1.44E-05)
	25	7.51E-01(3.63E-04)†	5.62E-01(3.66E-04)†	6.64E-01(3.67E-04)†	6.99E-01(6.67E-04)†	9.08E-01(2.49E-06)†	9.13E-01(7.74E-06)
	50	7.48E-01(2.86E-04)†	5.91E-01(7.04E-04)†	6.60E-01(7.93E-04)†	7.62E-01(5.52E-04)†	9.02E-01(3.97E-06)†	9.17E-01(3.07E-06)
	200	7.39E-01(3.55E-04)†	6.51E-01(2.22E-04)†	6.49E-01(3.37E-04)†	7.72E-01(1.10E-03)†	8.87E-01(1.26E-05)†	9.19E-01(2.66E-06)
WFG8	5	7.79E-01(2.27E-04)†	3.98E-01(1.53E-03)†	7.14E-01(3.26E-04)†	5.25E-01(8.14E-04)†	8.83E-01(3.10E-05)†	9.05E-01(1.78E-05)
	25	7.50E-01(3.35E-04)†	5.72E-01(3.73E-04)†	6.68E-01(4.05E-04)†	6.99E-01(5.11E-04)†	9.07E-01(3.27E-06)†	9.13E-01(9.85E-06)
	50	7.51E-01(2.87E-04)†	5.96E-01(2.96E-04)†	6.54E-01(5.15E-04)†	7.46E-01(3.33E-04)†	9.03E-01(2.76E-06)†	9.17E-01(1.57E-06)
	200	7.34E-01(5.75E-04)†	6.52E-01(2.95E-04)†	6.50E-01(3.88E-04)†	7.69E-01(9.23E-04)†	8.88E-01(1.05E-05)†	9.19E-01(3.18E-06)
WFG9	5	3.23E-01(4.69E-03)†	2.11E-01(9.85E-04)†	4.11E-01(2.36E-05)	5.63E-01(1.77E-02)‡	3.84E-01(1.61E-02)	4.06E-01(1.74E-03)
	25	3.80E-01(1.28E-03)†	2.55E-01(3.73E-04)†	4.35E-01(2.81E-03)	6.80E-01(1.22E-02)‡	4.11E-01(1.34E-02)	4.10E-01(2.86E-03)
	50	3.89E-01(1.01E-03)†	2.60E-01(6.22E-04)†	5.49E-01(3.14E-03)‡	6.69E-01(1.56E-02)‡	4.17E-01(1.46E-02)	4.13E-01(2.40E-03)
	200	4.45E-01(7.51E-03)†	3.09E-01(3.39E-03)†	5.85E-01(2.22E-03)‡	7.20E-01(9.43E-03)‡	3.64E-01(1.37E-02)	4.48E-01(9.09E-04)
+-=		28/22/2	33/15/4	27/20/5	40/8/4	28/8/16	—

TABLE 24
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 6 TO 5 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	9.91E-01(1.82E-05)†	9.36E-01(8.13E-04)†	9.78E-01(2.90E-05)†	0.00E+00(0.00E+00)†	9.93E-01(1.91E-05)†	1.00E+00(3.66E-11)
	25	4.52E-01(1.45E-01)†	9.25E-01(1.05E-03)†	1.56E-01(7.36E-02)†	0.00E+00(0.00E+00)†	9.74E-01(1.43E-03)†	1.00E+00(8.75E-10)
	50	4.77E-02(3.30E-02)†	9.44E-01(1.10E-03)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	9.22E-01(9.91E-03)†	1.00E+00(2.69E-11)
	200	0.00E+00(0.00E+00)†	9.77E-01(1.42E-04)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	8.34E-01(4.54E-02)†	1.00E+00(2.33E-11)
F2	5	9.48E-01(8.83E-05)†	9.77E-01(2.58E-06)†	9.55E-01(3.26E-05)†	1.01E-01(2.72E-02)†	9.85E-01(5.52E-07)†	9.87E-01(1.39E-05)
	25	9.14E-01(2.12E-04)†	9.81E-01(5.45E-07)†	8.71E-01(2.42E-04)†	9.57E-03(2.75E-03)†	9.87E-01(3.01E-07)‡	9.85E-01(3.50E-06)
	50	8.45E-01(1.22E-03)†	9.83E-01(6.34E-07)†	8.48E-01(2.50E-04)†	4.59E-02(1.28E-02)†	9.87E-01(2.02E-07)†	9.88E-01(8.66E-07)
	200	8.17E-01(2.28E-03)†	9.85E-01(2.10E-07)†	8.48E-01(3.68E-04)†	1.26E-01(4.59E-02)†	9.86E-01(1.78E-07)†	9.88E-01(8.24E-07)
F3	5	8.66E-01(4.61E-04)†	6.39E-01(8.90E-03)†	7.89E-01(5.97E-04)†	1.01E-01(2.72E-02)†	9.00E-01(7.09E-04)†	9.89E-01(2.46E-07)
	25	3.49E-01(4.43E-02)†	5.97E-01(1.07E-02)†	1.67E-01(3.69E-02)†	0.00E+00(0.00E+00)†	7.52E-01(3.38E-02)†	9.85E-01(2.29E-05)
	50	1.18E-02(4.18E-03)†	6.70E-01(1.14E-02)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	6.82E-01(3.32E-02)†	9.89E-01(2.08E-06)
	200	0.00E+00(0.00E+00)†	7.76E-01(1.20E-02)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	5.59E-01(7.44E-02)†	9.89E-01(3.29E-07)
F4	5	9.57E-01(4.03E-04)†	9.63E-01(6.08E-04)†	9.55E-01(8.59E-05)†	9.20E-01(6.00E-04)	9.86E-01(1.66E-06)‡	9.23E-01(2.64E-03)
	25	7.29E-01(2.71E-03)†	9.85E-01(4.29E-07)‡	6.59E-01(1.69E-03)†	9.70E-01(1.68E-04)‡	9.87E-01(2.63E-07)‡	9.26E-01(1.27E-03)
	50	4.49E-01(2.17E-03)†	9.84E-01(5.94E-07)‡	6.43E-01(1.90E-03)†	9.74E-01(4.49E-05)‡	9.87E-01(7.65E-07)‡	9.07E-01(3.76E-03)
	200	4.05E-01(7.06E-04)†	9.86E-01(2.85E-07)‡	6.24E-01(1.97E-03)†	9.76E-01(3.71E-05)‡	9.86E-01(7.21E-07)‡	9.04E-01(3.89E-03)
WFG1	5	9.69E-01(3.60E-05)†	8.61E-01(2.55E-04)†	9.50E-01(1.44E-04)†	2.55E-01(9.97E-03)†	9.61E-01(9.76E-05)†	9.93E-01(3.09E-06)
	25	9.57E-01(1.18E-04)†	8.69E-01(1.43E-04)†	9.41E-01(8.48E-05)†	2.71E-01(2.51E-03)†	9.66E-01(1.06E-04)†	9.95E-01(1.40E-06)
	50	9.39E-01(9.74E-05)†	8.79E-01(1.11E-04)†	9.26E-01(1.12E-04)†	2.80E-01(2.84E-03)†	9.25E-01(1.84E-04)†	9.95E-01(8.02E-07)
	200	9.11E-01(7.54E-05)†	8.97E-01(3.70E-05)†	9.10E-01(7.99E-05)†	2.92E-01(6.09E-03)†	9.08E-01(5.30E-06)†	9.95E-01(3.39E-07)
WFG2	5	8.73E-01(9.15E-03)†	7.83E-01(6.61E-03)†	8.80E-01(9.01E-03)†	2.12E-01(1.63E-07)†	8.88E-01(8.80E-03)†	9.98E-01(4.44E-08)
	25	8.91E-01(8.16E-03)†	8.14E-01(8.00E-03)†	8.43E-01(8.82E-03)†	2.11E-01(3.51E-07)†	9.05E-01(9.70E-03)†	9.99E-01(8.30E-09)
	50	8.38E-01(1.05E-02)†	8.22E-01(8.08E-03)†	8.08E-01(8.81E-03)†	2.10E-01(8.30E-07)†	9.14E-01(8.97E-03)†	9.99E-01(1.27E-08)
	200	7.84E-01(9.95E-03)†	8.30E-01(8.64E-03)†	7.87E-01(9.07E-03)†	2.10E-01(1.13E-06)†	8.82E-01(9.54E-03)†	9.99E-01(9.04E-09)
WFG3	5	5.97E-01(4.53E-03)†	5.30E-01(2.57E-03)†	6.20E-01(2.25E-03)†	2.19E-01(1.21E-06)†	6.28E-01(2.76E-03)†	6.85E-01(1.49E-05)
	25	6.40E-01(3.19E-03)†	5.77E-01(2.19E-03)†	5.99E-01(2.11E-03)†	2.20E-01(7.18E-07)†	5.99E-01(2.14E-03)†	6.86E-01(3.98E-05)
	50	6.30E-01(2.19E-03)†	5.83E-01(1.89E-03)†	5.92E-01(1.86E-03)†	2.19E-01(1.22E-06)†	5.95E-01(1.98E-03)†	6.87E-01(1.89E-05)
	200	6.04E-01(2.11E-03)†	5.90E-01(2.16E-03)†	5.76E-01(1.34E-03)†	2.18E-01(2.21E-06)†	5.87E-01(1.69E-03)†	6.85E-01(8.57E-05)
WFG4	5	7.45E-01(2.07E-04)†	4.82E-01(1.32E-03)†	6.56E-01(2.09E-04)†	2.84E-01(3.36E-04)†	8.34E-01(3.68E-05)†	8.58E-01(1.42E-05)
	25	7.43E-01(1.39E-04)†	5.36E-01(1.46E-03)†	6.69E-01(3.66E-04)†	3.06E-01(3.94E-04)†	8.78E-01(1.53E-06)‡	8.64E-01(1.86E-05)
	50	7.53E-01(3.00E-04)†	5.96E-01(1.04E-03)†	6.79E-01(2.85E-04)†	2.94E-01(1.29E-04)†	8.78E-01(9.51E-07)‡	8.72E-01(6.31E-06)
	200	7.65E-01(1.54E-04)†	6.82E-01(4.54E-04)†	6.94E-01(2.98E-04)†	3.14E-01(4.11E-05)†	8.73E-01(2.63E-06)†	8.75E-01(1.08E-05)
WFG5	5	6.66E-01(7.96E-04)†	4.83E-01(1.30E-03)†	6.35E-01(2.34E-04)†	5.05E-01(2.36E-05)†	7.94E-01(1.87E-05)†	8.04E-01(2.56E-05)
	25	7.06E-01(1.47E-04)†	5.58E-01(4.77E-04)†	6.54E-01(1.88E-04)†	5.07E-01(5.43E-05)†	8.29E-01(1.41E-05)‡	8.19E-01(1.70E-05)
	50	7.04E-01(8.61E-05)†	6.04E-01(3.19E-04)†	6.67E-01(2.22E-04)†	4.97E-01(8.90E-05)†	8.38E-01(2.20E-06)‡	8.31E-01(1.30E-05)
	200	7.14E-01(1.49E-04)†	6.79E-01(1.44E-04)†	6.77E-01(2.19E-04)†	5.05E-01(5.72E-05)†	8.49E-01(2.22E-06)‡	8.34E-01(2.77E-06)
WFG6	5	3.72E-01(3.91E-02)†	1.91E-01(2.05E-02)†	4.05E-01(3.26E-02)†	1.25E-01(1.03E-05)†	5.32E-01(4.94E-02)†	7.83E-01(8.74E-04)
	25	4.44E-01(4.30E-02)†	2.81E-01(3.00E-02)†	4.66E-01(3.09E-02)†	1.27E-01(2.55E-05)†	6.00E-01(5.48E-02)†	7.95E-01(5.26E-04)
	50	4.56E-01(4.56E-02)†	3.13E-01(3.75E-02)†	4.26E-01(3.77E-02)†	1.28E-01(2.17E-05)†	4.78E-01(5.57E-02)†	8.00E-01(4.31E-04)
	200	5.11E-01(4.55E-02)†	3.73E-01(4.93E-02)†	4.65E-01(3.61E-02)†	1.29E-01(1.55E-05)†	5.79E-01(5.27E-02)†	8.02E-01(4.98E-04)
WFG7	5	7.49E-01(1.89E-04)†	4.32E-01(7.15E-04)†	6.76E-01(2.97E-04)†	5.17E-01(7.85E-04)†	8.46E-01(2.48E-05)†	8.73E-01(6.27E-06)
	25	7.28E-01(2.92E-04)†	5.92E-01(3.27E-04)†	6.56E-01(2.23E-04)†	6.74E-01(4.16E-04)†	8.65E-01(7.22E-06)†	8.78E-01(6.49E-06)
	50	7.30E-01(2.60E-04)†	6.20E-01(2.71E-04)†	6.66E-01(2.96E-04)†	7.20E-01(2.95E-04)†	8.57E-01(9.74E-06)†	8.82E-01(3.93E-06)
	200	7.27E-01(1.78E-04)†	6.94E-01(1.44E-04)†	6.68E-01(2.78E-04)†	7.42E-01(2.57E-04)†	8.48E-01(1.27E-05)†	8.84E-01(3.76E-06)
WFG8	5	7.51E-01(1.65E-04)†	4.12E-01(8.06E-04)†	6.80E-01(2.41E-04)†	5.09E-01(5.81E-04)†	8.45E-01(3.71E-05)†	8.74E-01(8.49E-06)
	25	7.31E-01(2.25E-04)†	5.99E-01(2.45E-04)†	6.53E-01(2.65E-04)†	6.75E-01(4.81E-04)†	8.65E-01(8.18E-06)†	8.79E-01(1.32E-05)
	50	7.26E-01(1.96E-04)†	6.18E-01(3.29E-04)†	6.62E-01(3.51E-04)†	7.13E-01(4.06E-04)†	8.57E-01(8.37E-06)†	8.82E-01(3.32E-06)
	200	7.22E-01(2.20E-04)†	6.91E-01(1.53E-04)†	6.67E-01(3.29E-04)†	7.51E-01(2.32E-04)†	8.48E-01(1.29E-05)†	8.83E-01(5.66E-06)
WFG9	5	2.79E-01(2.05E-02)†	1.84E-01(1.19E-02)†	3.58E-01(1.06E-02)†	5.34E-01(1.23E-02)‡	4.59E-01(1.26E-02)‡	4.50E-01(1.13E-03)
	25	3.67E-01(1.21E-02)†	2.30E-01(1.29E-02)†	4.29E-01(1.46E-02)	6.74E-01(6.73E-03)‡	4.34E-01(1.81E-02)	4.60E-01(2.36E-03)
	50	3.95E-01(1.22E-02)†	2.48E-01(1.22E-02)†	5.43E-01(1.52E-02)‡	6.87E-01(1.02E-02)‡	4.69E-01(1.71E-02)‡	4.53E-01(2.02E-03)
	200	4.29E-01(1.78E-02)†	3.45E-01(2.30E-02)†	5.47E-01(1.76E-02)‡	7.21E-01(5.24E-03)‡	4.52E-01(2.12E-02)	4.70E-01(1.63E-03)
+-=		28/22/2	33/15/4	27/20/5	40/8/4	28/8/16	—

TABLE 25
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 5 TO 4 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	9.87E-01(2.50E-05)†	8.34E-01(2.24E-03)†	9.75E-01(3.41E-05)†	0.00E+00(0.00E+00)†	9.92E-01(7.37E-05)†	1.00E+00(9.44E-11)
	25	1.05E-03(3.30E-05)†	9.11E-01(1.64E-03)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	8.74E-01(2.61E-02)†	1.00E+00(2.26E-09)
	50	5.24E-03(8.24E-04)†	9.38E-01(6.42E-04)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	8.46E-01(2.20E-02)†	1.00E+00(1.26E-09)
	200	0.00E+00(0.00E+00)†	9.74E-01(1.73E-04)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	8.26E-01(8.31E-03)†	1.00E+00(8.88E-11)
F2	5	9.52E-01(3.23E-05)†	9.42E-01(2.52E-05)†	9.28E-01(3.19E-05)†	1.47E-01(3.39E-02)†	9.63E-01(3.41E-06)†	9.72E-01(1.63E-06)
	25	9.05E-01(2.09E-04)†	9.57E-01(1.82E-06)†	8.88E-01(2.24E-04)†	1.56E-02(3.24E-03)†	9.68E-01(8.42E-07)†	9.69E-01(2.41E-06)
	50	9.02E-01(3.52E-04)†	9.60E-01(1.44E-06)†	8.97E-01(1.16E-04)†	5.00E-02(9.48E-03)†	9.68E-01(4.97E-07)†	9.70E-01(2.82E-06)
	200	9.24E-01(1.69E-04)†	9.65E-01(6.04E-07)†	9.22E-01(5.27E-05)†	5.09E-01(4.69E-03)†	9.69E-01(4.04E-07)†	9.71E-01(2.20E-06)
F3	5	8.52E-01(7.34E-04)†	5.09E-01(6.76E-04)†	7.79E-01(7.09E-04)†	1.47E-01(3.39E-02)†	9.00E-01(7.65E-04)†	9.73E-01(6.45E-07)
	25	0.00E+00(0.00E+00)†	5.65E-01(4.51E-03)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	5.70E-01(6.94E-02)†	9.70E-01(3.78E-06)
	50	0.00E+00(0.00E+00)†	5.86E-01(4.63E-03)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	4.62E-01(8.55E-02)†	9.72E-01(6.46E-06)
	200	0.00E+00(0.00E+00)†	7.47E-01(6.45E-03)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	2.25E-01(7.10E-02)†	9.73E-01(8.85E-07)
F4	5	9.59E-01(8.30E-05)‡	9.57E-01(2.21E-04)‡	8.95E-01(2.66E-04)†	8.69E-01(7.42E-04)†	9.62E-01(9.66E-06)‡	8.99E-01(2.77E-03)
	25	6.39E-01(4.35E-03)†	9.56E-01(1.05E-05)‡	6.62E-01(1.10E-03)†	9.40E-01(2.17E-04)‡	9.65E-01(3.83E-06)‡	9.01E-01(2.03E-03)
	50	4.69E-01(4.48E-03)†	9.56E-01(8.31E-06)‡	7.25E-01(1.12E-03)†	9.44E-01(1.60E-04)‡	9.64E-01(6.85E-06)‡	8.97E-01(2.65E-03)
	200	7.27E-01(1.07E-03)†	9.62E-01(4.15E-06)‡	7.88E-01(6.34E-04)†	9.51E-01(8.43E-05)‡	9.62E-01(8.11E-06)‡	8.92E-01(4.51E-03)
WFG1	5	9.52E-01(6.62E-05)†	8.31E-01(1.54E-04)†	9.26E-01(3.04E-04)†	4.79E-01(7.83E-04)†	9.51E-01(1.22E-04)†	9.89E-01(3.17E-06)
	25	9.35E-01(1.41E-04)†	8.47E-01(1.48E-04)†	9.11E-01(3.47E-05)†	4.58E-01(3.65E-03)†	9.33E-01(1.66E-04)†	9.92E-01(9.13E-07)
	50	9.21E-01(3.06E-05)†	8.60E-01(8.47E-05)†	9.11E-01(3.08E-05)†	4.79E-01(9.11E-04)†	9.20E-01(2.26E-05)†	9.92E-01(6.42E-07)
	200	9.29E-01(2.78E-05)†	8.83E-01(3.64E-05)†	9.27E-01(2.29E-05)†	4.77E-01(1.68E-03)†	9.33E-01(5.38E-07)†	9.92E-01(1.45E-06)
WFG2	5	9.74E-01(2.13E-05)†	8.40E-01(1.83E-04)†	9.66E-01(3.70E-05)†	2.52E-01(3.92E-06)†	9.77E-01(1.65E-05)†	9.93E-01(1.63E-07)
	25	9.13E-01(5.83E-04)†	8.88E-01(8.55E-05)†	9.04E-01(3.04E-04)†	2.50E-01(3.07E-06)†	9.69E-01(1.04E-04)†	9.93E-01(1.19E-07)
	50	9.05E-01(5.03E-04)†	8.97E-01(7.70E-05)†	8.80E-01(4.27E-04)†	2.49E-01(1.78E-06)†	9.55E-01(1.35E-04)†	9.94E-01(9.55E-08)
	200	8.91E-01(5.91E-04)†	9.11E-01(7.73E-05)†	8.82E-01(6.50E-04)†	2.49E-01(8.17E-07)†	9.65E-01(5.21E-05)†	9.94E-01(1.04E-07)
WFG3	5	6.95E-01(1.79E-06)†	5.82E-01(2.81E-04)†	6.48E-01(2.29E-04)†	2.63E-01(2.26E-06)†	6.74E-01(1.58E-04)†	7.02E-01(1.15E-05)
	25	6.81E-01(2.05E-04)†	6.35E-01(1.96E-04)†	6.35E-01(3.93E-04)†	2.61E-01(1.03E-05)†	6.33E-01(5.59E-04)†	7.06E-01(1.50E-05)
	50	6.55E-01(4.56E-04)†	6.37E-01(1.03E-04)†	6.35E-01(3.96E-04)†	2.63E-01(4.67E-06)†	6.26E-01(8.34E-04)†	7.06E-01(2.11E-05)
	200	6.35E-01(5.41E-04)†	6.28E-01(1.22E-04)†	6.36E-01(4.95E-04)†	2.62E-01(7.13E-06)†	6.19E-01(3.41E-04)†	7.09E-01(1.66E-05)
WFG4	5	7.36E-01(6.38E-05)†	5.00E-01(1.66E-03)†	6.37E-01(1.14E-04)†	3.00E-01(2.59E-04)†	7.93E-01(1.64E-05)†	8.17E-01(5.77E-06)
	25	7.38E-01(1.05E-04)†	5.82E-01(8.60E-04)†	6.76E-01(9.25E-05)†	3.31E-01(1.10E-04)†	8.19E-01(2.36E-06)	8.19E-01(1.12E-05)
	50	7.47E-01(6.27E-05)†	6.33E-01(3.33E-04)†	6.91E-01(1.05E-04)†	3.36E-01(8.90E-05)†	8.20E-01(1.43E-06)†	8.25E-01(4.31E-06)
	200	7.47E-01(7.11E-05)†	7.10E-01(1.74E-04)†	7.04E-01(7.57E-05)†	3.36E-01(3.69E-05)†	8.18E-01(3.70E-06)†	8.26E-01(4.41E-06)
WFG5	5	6.93E-01(1.21E-04)†	5.26E-01(3.73E-04)†	6.15E-01(2.29E-04)†	5.49E-01(2.18E-05)†	7.46E-01(1.30E-05)†	7.66E-01(7.13E-06)
	25	7.03E-01(5.05E-05)†	6.30E-01(1.64E-04)†	6.60E-01(1.29E-04)†	5.58E-01(2.43E-05)†	7.81E-01(3.89E-06)‡	7.76E-01(2.24E-05)
	50	7.08E-01(3.63E-05)†	6.63E-01(1.52E-04)†	6.73E-01(9.87E-05)†	5.56E-01(4.08E-05)†	7.87E-01(5.38E-06)	7.86E-01(6.83E-06)
	200	7.13E-01(5.85E-05)†	7.07E-01(4.34E-05)†	6.83E-01(9.71E-05)†	5.59E-01(1.98E-05)†	7.98E-01(1.16E-06)‡	7.86E-01(2.90E-06)
WFG6	5	6.55E-01(5.01E-04)†	3.68E-01(4.94E-04)†	5.82E-01(7.13E-04)†	1.49E-01(5.09E-06)†	4.50E-01(4.02E-02)†	7.43E-01(1.31E-03)
	25	6.57E-01(3.37E-04)†	5.25E-01(6.57E-04)†	6.23E-01(2.58E-04)†	1.51E-01(2.04E-05)†	4.24E-01(4.59E-02)†	7.63E-01(3.35E-04)
	50	6.77E-01(2.74E-04)†	5.74E-01(1.85E-04)†	6.47E-01(2.00E-04)†	1.52E-01(1.34E-05)†	4.66E-01(4.83E-02)†	7.67E-01(2.38E-04)
	200	6.87E-01(2.02E-04)†	6.73E-01(1.59E-04)†	6.63E-01(2.17E-04)†	1.53E-01(1.02E-05)†	4.76E-01(5.29E-02)†	7.69E-01(3.11E-04)
WFG7	5	7.15E-01(1.79E-04)†	4.59E-01(8.01E-04)†	6.49E-01(1.29E-04)†	4.92E-01(2.42E-04)†	7.79E-01(3.21E-05)†	8.25E-01(6.11E-06)
	25	7.10E-01(1.92E-04)†	5.94E-01(1.54E-04)†	6.59E-01(3.20E-04)†	6.50E-01(3.63E-04)†	8.04E-01(1.53E-05)†	8.28E-01(8.69E-06)
	50	7.14E-01(1.04E-04)†	6.30E-01(1.24E-04)†	6.65E-01(1.69E-04)†	6.68E-01(2.54E-04)†	8.01E-01(7.04E-06)†	8.31E-01(2.84E-06)
	200	7.16E-01(1.61E-04)†	6.92E-01(5.31E-05)†	6.78E-01(1.76E-04)†	6.97E-01(1.74E-04)†	8.00E-01(1.08E-05)†	8.30E-01(2.77E-06)
WFG8	5	7.20E-01(1.54E-04)†	4.56E-01(7.44E-04)†	6.44E-01(3.52E-04)†	4.93E-01(3.52E-04)†	7.78E-01(4.53E-05)†	8.25E-01(4.00E-06)
	25	7.13E-01(1.62E-04)†	5.93E-01(6.74E-04)†	6.52E-01(2.04E-04)†	6.45E-01(4.51E-04)†	8.04E-01(1.29E-05)†	8.28E-01(7.97E-06)
	50	7.15E-01(1.06E-04)†	6.29E-01(3.30E-04)†	6.60E-01(1.03E-04)†	6.68E-01(2.60E-04)†	8.00E-01(2.28E-05)†	8.30E-01(2.58E-06)
	200	7.13E-01(1.08E-04)†	6.93E-01(1.10E-04)†	6.75E-01(1.72E-04)†	6.94E-01(7.73E-05)†	8.01E-01(7.98E-06)†	8.31E-01(4.01E-06)
WFG9	5	3.94E-01(4.57E-03)†	3.24E-01(1.26E-03)†	4.35E-01(3.56E-05)†	4.99E-01(4.59E-03)‡	3.83E-01(2.00E-02)	4.66E-01(1.20E-03)
	25	4.42E-01(8.49E-04)†	4.14E-01(1.39E-04)†	5.56E-01(8.49E-03)‡	6.65E-01(4.37E-03)‡	4.37E-01(1.91E-02)	4.89E-01(1.16E-03)
	50	4.68E-01(1.46E-03)	4.35E-01(8.44E-04)†	6.53E-01(4.21E-04)‡	6.74E-01(6.66E-03)‡	4.22E-01(1.96E-02)	4.77E-01(1.36E-03)
	200	5.28E-01(1.11E-02)	5.09E-01(6.91E-03)	6.57E-01(1.46E-03)‡	6.95E-01(3.89E-03)‡	4.20E-01(2.22E-02)	4.99E-01(1.44E-03)
+-=		28/22/2	33/15/4	27/20/5	40/8/4	28/8/16	—

TABLE 26
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 4 TO 3 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	9.66E-01(2.34E-04)†	7.82E-01(6.13E-05)†	9.48E-01(4.11E-04)†	0.00E+00(0.00E+00)†	9.72E-01(5.66E-04)†	9.97E-01(5.79E-10)
	25	0.00E+00(0.00E+00)†	8.97E-01(2.14E-03)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	6.98E-01(8.33E-02)†	9.97E-01(2.43E-08)
	50	0.00E+00(0.00E+00)†	9.17E-01(1.79E-03)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	6.55E-01(6.97E-02)†	9.97E-01(2.42E-09)
	200	8.49E-04(2.16E-05)†	9.72E-01(1.47E-04)†	2.20E-03(1.46E-04)†	0.00E+00(0.00E+00)†	7.80E-01(1.54E-02)†	9.97E-01(3.54E-09)
F2	5	9.12E-01(6.86E-06)†	8.81E-01(4.78E-05)†	8.85E-01(5.27E-05)†	4.65E-01(3.92E-03)†	9.12E-01(1.27E-05)†	9.28E-01(3.78E-07)
	25	9.00E-01(3.27E-05)†	9.04E-01(4.77E-06)†	8.94E-01(5.07E-05)†	3.95E-01(1.32E-03)†	9.19E-01(8.26E-07)†	9.27E-01(2.85E-06)
	50	9.07E-01(2.83E-05)†	9.09E-01(2.28E-06)†	9.03E-01(2.21E-05)†	4.19E-01(4.28E-03)†	9.20E-01(1.20E-06)†	9.28E-01(2.31E-06)
	200	9.11E-01(7.47E-06)†	9.17E-01(1.80E-06)†	9.05E-01(4.84E-05)†	7.56E-01(3.01E-05)†	9.22E-01(4.82E-07)†	9.29E-01(5.51E-07)
F3	5	7.95E-01(2.74E-03)†	5.01E-01(4.94E-07)†	7.04E-01(4.88E-03)†	4.65E-01(3.92E-03)†	8.17E-01(6.81E-03)†	9.29E-01(1.86E-07)
	25	0.00E+00(0.00E+00)†	5.54E-01(4.54E-03)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	3.89E-01(9.44E-02)†	9.27E-01(3.12E-06)
	50	0.00E+00(0.00E+00)†	5.89E-01(7.43E-03)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	2.66E-01(8.45E-02)†	9.29E-01(1.18E-06)
	200	0.00E+00(0.00E+00)†	7.85E-01(6.10E-03)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	2.57E-01(5.61E-02)†	9.29E-01(1.08E-06)
F4	5	8.92E-01(9.54E-05)	9.05E-01(3.54E-05)‡	8.28E-01(4.12E-04)†	8.04E-01(9.67E-04)†	9.09E-01(1.40E-05)‡	8.61E-01(2.88E-03)
	25	7.75E-01(1.09E-03)†	8.96E-01(3.68E-05)‡	8.17E-01(1.81E-04)	8.81E-01(2.17E-04)‡	9.10E-01(2.66E-05)‡	8.43E-01(2.01E-03)
	50	8.04E-01(3.78E-04)†	9.00E-01(3.69E-05)‡	8.45E-01(1.76E-05)†	8.74E-01(1.25E-03)	9.11E-01(2.50E-05)‡	8.72E-01(1.66E-03)
	200	8.57E-01(5.45E-06)†	9.09E-01(6.25E-06)‡	8.52E-01(8.14E-05)†	8.94E-01(2.64E-04)	9.10E-01(1.72E-05)‡	8.70E-01(1.99E-03)
WFG1	5	9.19E-01(7.41E-05)†	7.94E-01(1.92E-04)†	8.84E-01(6.05E-04)†	4.32E-01(3.34E-04)†	9.19E-01(1.14E-04)†	9.65E-01(2.39E-06)
	25	9.02E-01(5.52E-05)†	8.21E-01(8.34E-05)†	8.82E-01(3.46E-05)†	4.31E-01(3.57E-04)†	9.00E-01(1.37E-04)†	9.68E-01(7.06E-07)
	50	9.05E-01(2.41E-05)†	8.35E-01(1.59E-04)†	8.95E-01(2.65E-05)†	4.30E-01(2.93E-04)†	9.09E-01(2.69E-05)†	9.68E-01(1.13E-06)
	200	9.24E-01(8.25E-06)†	8.64E-01(1.01E-04)†	9.22E-01(3.05E-06)†	4.33E-01(2.56E-04)†	9.31E-01(1.14E-06)†	9.68E-01(1.41E-06)
WFG2	5	8.31E-01(2.68E-03)†	7.36E-01(2.50E-03)†	8.12E-01(2.40E-03)†	2.70E-01(2.49E-06)†	8.72E-01(3.84E-03)†	9.61E-01(5.90E-07)
	25	8.16E-01(3.49E-03)†	7.83E-01(3.03E-03)†	8.15E-01(3.04E-03)†	2.69E-01(4.09E-06)†	8.70E-01(3.42E-03)†	9.62E-01(5.26E-07)
	50	8.20E-01(3.49E-03)†	7.96E-01(3.24E-03)†	8.10E-01(3.13E-03)†	2.70E-01(3.38E-06)†	8.53E-01(3.98E-03)†	9.62E-01(3.28E-07)
	200	8.47E-01(3.16E-03)†	8.12E-01(3.46E-03)†	8.07E-01(3.05E-03)†	2.70E-01(2.41E-06)†	8.70E-01(3.81E-03)†	9.62E-01(4.71E-07)
WFG3	5	6.38E-01(1.73E-03)†	5.53E-01(1.50E-03)†	5.73E-01(1.02E-03)†	2.79E-01(7.26E-06)†	6.39E-01(1.70E-03)†	7.22E-01(4.30E-07)
	25	6.26E-01(2.45E-03)†	6.09E-01(1.14E-03)†	5.87E-01(1.12E-03)†	2.78E-01(2.68E-05)†	6.12E-01(2.28E-03)†	7.22E-01(9.67E-07)
	50	6.13E-01(1.83E-03)†	6.13E-01(1.29E-03)†	5.86E-01(1.44E-03)†	2.79E-01(1.39E-05)†	6.06E-01(1.96E-03)†	7.20E-01(6.43E-06)
	200	6.01E-01(2.12E-03)†	6.11E-01(1.39E-03)†	5.91E-01(1.63E-03)†	2.82E-01(9.49E-06)†	6.00E-01(1.51E-03)†	7.22E-01(1.61E-06)
WFG4	5	6.81E-01(3.78E-05)†	5.40E-01(5.05E-04)†	6.00E-01(8.47E-05)†	3.11E-01(8.48E-05)†	7.10E-01(9.63E-06)†	7.36E-01(1.13E-06)
	25	6.87E-01(6.65E-05)†	6.38E-01(7.22E-05)†	6.38E-01(8.13E-05)†	3.38E-01(7.29E-05)†	7.29E-01(7.23E-07)†	7.36E-01(4.42E-06)
	50	6.88E-01(3.28E-05)†	6.58E-01(2.74E-05)†	6.48E-01(4.99E-05)†	3.47E-01(6.10E-05)†	7.29E-01(1.94E-06)†	7.38E-01(5.38E-07)
	200	6.87E-01(3.06E-05)†	6.84E-01(9.67E-06)†	6.56E-01(3.70E-05)†	3.56E-01(1.80E-05)†	7.30E-01(2.21E-06)†	7.39E-01(5.74E-07)
WFG5	5	6.46E-01(2.82E-05)†	5.74E-01(1.98E-04)†	5.76E-01(9.51E-05)†	5.80E-01(3.94E-05)†	6.70E-01(2.65E-05)†	6.91E-01(4.35E-06)
	25	6.60E-01(2.13E-05)†	6.42E-01(2.48E-05)†	6.24E-01(4.49E-05)†	5.91E-01(1.91E-05)†	6.97E-01(1.71E-06)‡	6.95E-01(1.27E-05)
	50	6.64E-01(2.96E-05)†	6.53E-01(1.01E-05)†	6.36E-01(4.61E-05)†	5.92E-01(1.85E-05)†	7.05E-01(5.99E-06)‡	7.01E-01(9.81E-06)
	200	6.66E-01(3.16E-05)†	6.64E-01(3.35E-06)†	6.41E-01(5.86E-05)†	5.95E-01(2.12E-05)†	7.12E-01(5.24E-07)‡	7.04E-01(1.34E-06)
WFG6	5	3.10E-01(2.88E-02)†	2.32E-01(2.03E-02)†	3.22E-01(2.24E-02)†	1.79E-01(3.56E-06)†	4.15E-01(3.66E-02)†	6.86E-01(3.84E-04)
	25	4.09E-01(3.47E-02)†	3.50E-01(3.52E-02)†	3.73E-01(3.26E-02)†	1.83E-01(4.60E-06)†	4.56E-01(4.64E-02)†	6.88E-01(2.58E-04)
	50	3.94E-01(4.03E-02)†	3.81E-01(3.84E-02)†	3.73E-01(3.69E-02)†	1.84E-01(3.90E-06)†	4.21E-01(4.34E-02)†	6.93E-01(1.44E-04)
	200	4.71E-01(3.73E-02)†	3.90E-01(4.18E-02)†	3.88E-01(3.55E-02)†	1.84E-01(4.34E-06)†	4.80E-01(4.87E-02)†	6.95E-01(1.79E-04)
WFG7	5	6.62E-01(1.22E-04)†	4.68E-01(3.51E-04)†	6.02E-01(9.15E-05)†	4.76E-01(1.68E-04)†	6.85E-01(3.94E-05)†	7.39E-01(1.07E-06)
	25	6.68E-01(6.97E-05)†	5.66E-01(1.53E-04)†	6.30E-01(8.55E-05)†	5.53E-01(1.78E-04)†	7.12E-01(1.03E-05)†	7.39E-01(4.27E-06)
	50	6.69E-01(7.54E-05)†	5.97E-01(1.51E-04)†	6.38E-01(5.27E-05)†	5.82E-01(2.31E-04)†	7.13E-01(6.28E-06)†	7.41E-01(5.27E-07)
	200	6.75E-01(3.95E-05)†	6.54E-01(2.22E-05)†	6.50E-01(6.79E-05)†	6.27E-01(4.63E-05)†	7.14E-01(8.70E-06)†	7.41E-01(6.29E-07)
WFG8	5	6.65E-01(1.14E-04)†	4.64E-01(2.90E-04)†	6.00E-01(2.11E-04)†	4.81E-01(2.64E-04)†	6.87E-01(3.03E-05)†	7.38E-01(1.45E-06)
	25	6.69E-01(6.94E-05)†	5.69E-01(1.34E-04)†	6.31E-01(1.03E-04)†	5.55E-01(1.54E-04)†	7.12E-01(1.16E-05)†	7.39E-01(3.31E-06)
	50	6.71E-01(7.91E-05)†	5.98E-01(9.74E-05)†	6.42E-01(6.90E-05)†	5.74E-01(1.33E-04)†	7.13E-01(7.56E-06)†	7.41E-01(4.68E-07)
	200	6.74E-01(4.63E-05)†	6.55E-01(2.38E-05)†	6.52E-01(1.03E-04)†	6.28E-01(4.52E-05)†	7.16E-01(6.86E-06)†	7.41E-01(9.10E-07)
WFG9	5	2.30E-01(1.59E-02)†	2.71E-01(1.46E-02)†	3.84E-01(1.12E-02)†	4.45E-01(2.67E-03)†	3.58E-01(1.81E-02)†	4.80E-01(6.13E-04)
	25	3.68E-01(1.75E-02)†	3.37E-01(1.92E-02)†	5.00E-01(1.90E-02)	6.00E-01(2.83E-03)‡	3.73E-01(2.11E-02)†	4.83E-01(1.68E-04)
	50	3.81E-01(1.86E-02)†	3.58E-01(1.94E-02)†	5.89E-01(9.28E-03)‡	6.10E-01(5.70E-03)‡	3.96E-01(2.12E-02)	4.88E-01(3.46E-04)
	200	4.45E-01(2.75E-02)	4.29E-01(2.76E-02)	6.00E-01(7.64E-03)‡	6.15E-01(2.23E-03)‡	3.99E-01(1.97E-02)	4.84E-01(1.58E-04)
+-=		28/22/2	33/15/4	27/20/5	40/8/4	28/8/16	—

TABLE 27
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 3 TO 2 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	7.82E-02(4.20E-03)†	1.89E-01(2.49E-02)†	9.76E-02(1.15E-02)†	0.00E+00(0.00E+00)†	2.25E-01(3.82E-02)†	9.69E-01(3.03E-10)
	25	0.00E+00(0.00E+00)†	1.18E-01(2.69E-03)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	1.62E-01(4.40E-02)†	9.69E-01(6.08E-10)
	50	0.00E+00(0.00E+00)†	1.02E-01(1.23E-03)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	1.44E-01(2.98E-02)†	9.69E-01(1.91E-10)
	200	6.39E-02(1.95E-03)†	2.43E-01(2.43E-03)†	5.01E-02(1.39E-03)†	0.00E+00(0.00E+00)†	2.44E-01(2.49E-02)†	9.69E-01(5.49E-10)
F2	5	7.41E-01(5.56E-05)†	5.91E-01(1.05E-03)†	5.84E-01(2.96E-04)†	4.99E-01(2.57E-03)†	7.53E-01(1.79E-03)†	8.03E-01(1.24E-09)
	25	7.49E-01(2.31E-05)†	7.03E-01(2.82E-04)†	5.94E-01(7.23E-04)†	7.77E-01(3.90E-05)†	7.60E-01(6.01E-04)†	8.03E-01(1.61E-09)
	50	7.53E-01(1.39E-05)†	7.20E-01(7.35E-05)†	5.93E-01(4.72E-04)†	7.87E-01(2.88E-05)†	7.74E-01(6.07E-04)†	8.03E-01(1.09E-09)
	200	7.52E-01(3.71E-05)†	7.35E-01(3.46E-06)†	5.86E-01(3.46E-04)†	7.89E-01(9.98E-05)†	7.82E-01(3.68E-04)†	8.03E-01(1.38E-09)
F3	5	8.47E-02(3.76E-03)†	2.94E-01(2.34E-02)†	7.22E-02(1.09E-02)†	4.99E-01(2.57E-03)†	1.99E-01(3.04E-02)†	8.03E-01(4.87E-09)
	25	0.00E+00(0.00E+00)†	8.04E-02(4.17E-03)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	3.98E-02(6.00E-03)†	8.03E-01(1.04E-09)
	50	0.00E+00(0.00E+00)†	9.00E-02(2.29E-03)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	6.35E-02(2.23E-02)†	8.03E-01(7.59E-09)
	200	4.90E-02(2.81E-03)†	2.11E-01(5.31E-03)†	4.51E-02(4.14E-03)†	0.00E+00(0.00E+00)†	1.30E-01(1.81E-02)†	8.03E-01(6.77E-09)
F4	5	6.66E-01(2.44E-04)†	5.55E-01(2.36E-03)†	5.71E-01(8.75E-04)†	7.05E-01(5.36E-04)†	7.38E-01(7.62E-04)†	8.02E-01(5.81E-02)
	25	6.76E-01(6.84E-05)†	6.42E-01(3.18E-04)†	6.69E-01(1.79E-03)†	7.73E-01(5.57E-05)†	7.26E-01(9.56E-04)†	8.03E-01(2.27E-08)
	50	6.91E-01(1.23E-05)†	6.57E-01(2.96E-04)†	6.53E-01(1.86E-03)†	7.74E-01(5.49E-05)†	7.37E-01(1.15E-03)†	8.03E-01(1.13E-09)
	200	6.94E-01(1.14E-06)†	6.89E-01(1.40E-05)†	6.33E-01(5.68E-03)†	7.69E-01(5.63E-05)†	7.18E-01(4.23E-04)†	8.03E-01(7.19E-10)
WFG1	5	7.54E-01(2.11E-05)†	6.28E-01(7.69E-04)†	5.97E-01(4.04E-03)†	3.33E-01(3.66E-05)†	7.26E-01(4.44E-05)†	8.02E-01(8.54E-07)
	25	7.47E-01(1.95E-05)†	6.75E-01(1.05E-03)†	6.54E-01(1.91E-03)†	3.33E-01(1.82E-05)†	7.17E-01(9.98E-05)†	8.02E-01(5.17E-07)
	50	7.59E-01(6.17E-06)†	6.87E-01(6.41E-04)†	6.79E-01(1.48E-03)†	3.37E-01(5.77E-06)†	7.36E-01(8.16E-05)†	8.02E-01(7.15E-07)
	200	7.80E-01(6.05E-07)†	7.23E-01(3.66E-05)†	7.16E-01(3.85E-04)†	3.37E-01(2.67E-06)†	7.60E-01(4.02E-05)†	8.02E-01(7.89E-07)
WFG2	5	6.55E-01(2.78E-04)†	5.86E-01(2.36E-03)†	5.57E-01(3.60E-04)†	3.39E-01(9.10E-06)†	6.37E-01(2.71E-03)†	7.08E-01(2.47E-04)
	25	6.54E-01(4.12E-04)†	6.09E-01(1.06E-03)†	5.76E-01(3.31E-04)†	3.42E-01(3.27E-06)†	6.71E-01(9.69E-04)†	7.06E-01(3.59E-04)
	50	6.53E-01(4.26E-04)†	6.19E-01(6.16E-05)†	5.76E-01(2.39E-04)†	3.43E-01(2.42E-06)†	6.51E-01(1.38E-03)†	7.06E-01(2.59E-04)
	200	6.49E-01(5.61E-04)†	6.24E-01(5.82E-06)†	5.77E-01(2.46E-04)†	3.44E-01(1.01E-09)†	6.56E-01(9.82E-04)†	6.95E-01(1.07E-03)
WFG3	5	6.99E-01(4.22E-04)†	4.98E-01(6.02E-04)†	4.40E-01(6.79E-05)†	3.59E-01(4.99E-06)†	6.43E-01(1.04E-03)†	7.31E-01(8.90E-09)
	25	5.20E-01(1.36E-04)†	5.15E-01(3.48E-04)†	4.89E-01(6.46E-05)†	3.61E-01(4.06E-06)†	6.20E-01(1.49E-03)†	7.31E-01(2.85E-08)
	50	5.15E-01(2.47E-05)†	5.09E-01(3.26E-04)†	4.90E-01(5.40E-05)†	3.61E-01(4.64E-06)†	6.13E-01(2.02E-03)†	7.31E-01(9.53E-09)
	200	5.17E-01(2.43E-05)†	5.12E-01(2.50E-04)†	4.91E-01(6.28E-05)†	3.62E-01(4.35E-06)†	6.04E-01(1.96E-03)†	7.31E-01(1.47E-08)
WFG4	5	5.03E-01(1.48E-04)†	4.17E-01(1.57E-04)†	4.50E-01(5.77E-05)†	3.06E-01(5.31E-05)†	5.51E-01(5.72E-05)†	5.79E-01(1.18E-05)
	25	5.24E-01(9.87E-05)†	4.66E-01(1.30E-04)†	4.75E-01(4.23E-05)†	3.11E-01(3.09E-05)†	5.60E-01(4.99E-05)†	5.80E-01(3.53E-08)
	50	5.26E-01(9.89E-05)†	4.76E-01(1.72E-04)†	4.79E-01(4.35E-05)†	3.18E-01(1.87E-05)†	5.63E-01(2.76E-05)†	5.80E-01(1.97E-06)
	200	5.27E-01(8.13E-05)†	4.98E-01(4.50E-06)†	4.84E-01(4.31E-05)†	3.33E-01(2.11E-05)†	5.64E-01(2.18E-05)†	5.79E-01(2.83E-06)
WFG5	5	4.88E-01(8.42E-05)†	4.27E-01(1.73E-04)†	4.15E-01(4.48E-05)†	5.43E-01(3.38E-05)†	5.30E-01(4.07E-05)†	5.52E-01(3.70E-06)
	25	5.12E-01(1.18E-04)†	4.81E-01(2.61E-05)†	4.38E-01(6.07E-05)†	5.52E-01(4.92E-06)	5.25E-01(9.09E-05)†	5.50E-01(1.82E-05)
	50	5.17E-01(8.94E-05)†	4.92E-01(5.39E-05)†	4.45E-01(4.49E-05)†	5.52E-01(2.76E-06)	5.22E-01(7.42E-05)†	5.52E-01(2.14E-06)
	200	5.24E-01(1.11E-05)†	5.10E-01(3.89E-05)†	4.48E-01(2.40E-05)†	5.52E-01(1.49E-05)	5.21E-01(1.26E-04)†	5.52E-01(1.78E-06)
WFG6	5	4.55E-01(3.30E-04)†	3.18E-01(2.39E-04)†	3.73E-01(1.80E-04)†	2.28E-01(2.10E-05)†	3.98E-01(1.32E-02)†	5.46E-01(1.16E-04)
	25	4.90E-01(1.22E-04)†	4.19E-01(1.11E-04)†	4.20E-01(7.91E-05)†	2.28E-01(1.39E-05)†	3.31E-01(3.07E-02)†	5.32E-01(3.47E-03)
	50	4.99E-01(8.93E-05)†	4.47E-01(1.55E-04)†	4.27E-01(5.01E-05)†	2.30E-01(1.97E-05)†	3.47E-01(3.49E-02)†	5.47E-01(7.46E-05)
	200	5.10E-01(8.01E-05)†	4.83E-01(9.33E-06)†	4.32E-01(3.70E-05)†	2.30E-01(1.41E-05)†	3.97E-01(3.25E-02)†	5.48E-01(9.07E-05)
WFG7	5	4.95E-01(2.60E-04)†	2.85E-01(2.03E-04)†	3.93E-01(9.99E-05)†	4.68E-01(4.81E-04)†	4.95E-01(3.82E-04)†	5.80E-01(5.81E-09)
	25	5.25E-01(5.03E-05)†	3.63E-01(2.71E-04)†	4.18E-01(2.33E-04)†	5.04E-01(8.46E-05)†	5.18E-01(1.22E-04)†	5.80E-01(4.74E-09)
	50	5.33E-01(8.63E-05)†	4.14E-01(2.46E-04)†	4.21E-01(1.68E-04)†	5.11E-01(4.60E-05)†	5.19E-01(1.38E-04)†	5.80E-01(4.95E-09)
	200	5.40E-01(3.83E-05)†	4.87E-01(1.24E-04)†	4.29E-01(2.22E-04)†	5.25E-01(1.51E-05)†	5.23E-01(4.96E-05)†	5.80E-01(7.16E-09)
WFG8	5	4.94E-01(2.46E-04)†	2.79E-01(1.47E-04)†	3.96E-01(1.54E-04)†	4.66E-01(6.53E-04)†	5.01E-01(2.96E-04)†	5.80E-01(4.22E-09)
	25	5.23E-01(8.43E-05)†	3.66E-01(3.84E-04)†	4.21E-01(2.27E-04)†	5.01E-01(1.02E-04)†	5.16E-01(1.67E-04)†	5.80E-01(5.40E-09)
	50	5.31E-01(6.83E-05)†	4.10E-01(1.51E-04)†	4.22E-01(1.25E-04)†	5.12E-01(3.96E-05)†	5.24E-01(1.30E-04)†	5.80E-01(7.06E-09)
	200	5.37E-01(7.03E-05)†	4.91E-01(8.02E-05)†	4.28E-01(1.78E-04)†	5.24E-01(1.30E-05)†	5.23E-01(1.31E-04)†	5.80E-01(4.40E-09)
WFG9	5	3.51E-01(8.43E-04)†	3.12E-01(8.90E-05)†	3.07E-01(3.03E-05)†	3.84E-01(1.11E-03)‡	3.23E-01(6.02E-03)†	3.64E-01(4.23E-04)
	25	3.29E-01(1.21E-04)†	3.25E-01(4.29E-05)†	4.11E-01(3.89E-03)‡	5.19E-01(1.55E-03)‡	2.91E-01(1.42E-02)†	3.67E-01(1.17E-03)
	50	3.42E-01(8.89E-04)†	3.32E-01(1.79E-04)†	4.57E-01(4.85E-05)‡	5.15E-01(3.15E-03)‡	2.95E-01(1.39E-02)	3.70E-01(4.24E-04)
	200	3.97E-01(5.21E-03)	3.77E-01(4.18E-03)	4.58E-01(5.21E-04)‡	5.24E-01(1.34E-03)‡	3.07E-01(1.44E-02)	3.68E-01(6.06E-04)
+-=		28/22/2	33/15/4	27/20/5	40/8/4	28/8/16	—

TABLE 28
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 2 TO 3 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.84E-03(5.65E-10)†	1.85E-03(4.86E-38)†	6.41E+01(3.84E+00)†	7.74E+00(1.32E+01)†	1.86E-03(2.63E-10)†	1.71E-03(2.47E-09)
	25	1.85E-03(4.69E-10)†	1.85E-03(4.86E-38)†	6.40E+01(5.01E+00)†	7.96E+00(1.68E+01)†	1.86E-03(1.85E-10)†	1.72E-03(1.83E-09)
	50	1.84E-03(8.60E-10)†	1.85E-03(4.86E-38)†	6.34E+01(5.15E+00)†	7.45E+00(1.18E+01)†	1.85E-03(3.64E-11)†	1.71E-03(2.61E-09)
	200	1.85E-03(7.75E-10)†	1.85E-03(4.86E-38)†	6.46E+01(7.06E+00)†	8.13E+00(1.49E+01)†	1.86E-03(1.10E-10)†	1.70E-03(1.78E-09)
F2	5	5.36E-03(5.16E-09)†	5.12E-03(8.25E-11)†	1.38E-01(2.77E-05)†	3.43E-01(3.25E-05)†	5.17E-03(4.23E-10)†	4.54E-03(2.19E-08)
	25	5.36E-03(6.59E-09)†	5.13E-03(7.36E-11)†	1.37E-01(3.18E-05)†	3.44E-01(1.88E-05)†	5.17E-03(6.36E-10)†	4.56E-03(1.09E-08)
	50	5.40E-03(4.28E-09)†	5.12E-03(1.01E-10)†	1.38E-01(2.26E-05)†	3.44E-01(1.55E-05)†	5.17E-03(5.90E-10)†	4.57E-03(1.30E-08)
	200	5.38E-03(4.81E-09)†	5.13E-03(9.22E-11)†	1.38E-01(1.96E-05)†	3.43E-01(1.48E-05)†	5.17E-03(4.86E-10)†	4.58E-03(1.65E-08)
F3	5	5.40E-03(4.43E-09)†	5.16E-03(1.29E-12)†	1.73E+02(2.48E+01)†	2.61E+01(1.12E+02)†	5.19E-03(1.80E-09)†	4.71E-03(4.40E-08)
	25	5.42E-03(7.67E-09)†	5.16E-03(9.61E-13)†	1.73E+02(2.70E+01)†	2.67E+01(1.45E+02)†	5.19E-03(1.61E-09)†	4.64E-03(2.13E-08)
	50	5.41E-03(5.07E-09)†	5.16E-03(1.56E-12)†	1.73E+02(2.48E+01)†	2.27E+01(1.29E+02)†	5.19E-03(2.35E-09)†	4.70E-03(4.34E-08)
	200	5.41E-03(6.89E-09)†	5.16E-03(1.07E-12)†	1.71E+02(1.61E+01)†	2.40E+01(1.48E+02)†	5.20E-03(1.45E-09)†	4.76E-03(4.77E-08)
F4	5	2.98E-03(3.96E-09)‡	2.80E-03(1.31E-12)	1.35E-01(3.23E-05)†	2.02E-01(9.68E-05)†	2.66E-03(2.45E-07)	3.12E-03(5.84E-06)
	25	2.98E-03(3.40E-09)	2.80E-03(9.12E-13)	1.36E-01(2.61E-05)†	2.00E-01(1.32E-04)†	2.74E-03(2.35E-09)	2.58E-03(2.39E-07)
	50	2.97E-03(4.52E-09)†	2.80E-03(1.38E-12)	1.34E-01(2.48E-05)†	2.02E-01(1.10E-04)†	2.75E-03(2.22E-09)	2.56E-03(2.35E-07)
	200	3.00E-03(4.67E-09)†	2.80E-03(1.19E-12)†	1.37E-01(3.59E-05)†	2.03E-01(7.74E-05)†	2.75E-03(3.13E-09)†	2.72E-03(1.66E-07)
WFG1	5	2.92E-02(1.23E-05)‡	3.73E-02(1.45E-06)†	2.76E-01(1.16E-05)‡	2.86E-01(2.71E-06)‡	2.50E-02(1.53E-05)‡	3.18E-02(2.55E-06)
	25	2.91E-02(1.58E-05)‡	3.82E-02(2.92E-06)†	2.77E-01(2.37E-05)‡	2.85E-01(3.28E-06)‡	2.41E-02(3.03E-06)‡	3.15E-02(1.70E-06)
	50	2.93E-02(1.13E-05)‡	3.76E-02(2.87E-06)†	2.75E-01(1.03E-05)‡	2.85E-01(3.28E-06)‡	2.46E-02(9.77E-06)‡	3.16E-02(2.51E-06)
	200	2.95E-02(1.51E-05)‡	3.75E-02(3.09E-06)†	2.75E-01(1.81E-05)‡	2.86E-01(3.93E-06)‡	2.40E-02(4.16E-06)‡	3.18E-02(2.53E-06)
WFG2	5	8.13E-02(1.10E-06)‡	1.01E-01(3.60E-06)†	2.87E-01(1.45E-04)†	6.59E-01(9.56E-06)†	7.39E-02(8.94E-07)‡	8.38E-02(5.72E-06)
	25	8.15E-02(1.05E-06)‡	1.01E-01(9.27E-06)†	2.89E-01(2.49E-04)†	6.60E-01(8.20E-06)†	7.39E-02(5.05E-07)‡	8.37E-02(3.03E-06)
	50	8.14E-02(1.66E-06)‡	1.01E-01(5.27E-06)†	2.90E-01(1.59E-04)†	6.59E-01(7.58E-06)†	7.40E-02(4.50E-07)‡	8.42E-02(3.48E-06)
	200	1.58E-01(9.75E-03)	1.01E-01(7.58E-06)†	2.89E-01(1.72E-04)†	6.61E-01(4.50E-06)†	1.87E-01(9.81E-03)	8.42E-02(3.46E-06)
WFG3	5	8.01E-04(2.89E-08)†	1.81E-03(2.06E-08)†	1.98E-01(4.59E-05)†	4.66E-01(1.57E-05)†	1.19E-02(4.23E-03)	1.82E-04(6.35E-10)
	25	7.39E-04(1.68E-08)†	1.85E-03(1.82E-08)†	2.01E-01(4.56E-05)†	4.67E-01(1.58E-05)†	2.23E-04(5.53E-08)	1.85E-04(1.06E-09)
	50	7.70E-04(3.07E-08)†	1.86E-03(1.57E-08)†	2.01E-01(3.23E-05)†	4.67E-01(2.18E-05)†	1.81E-04(1.21E-09)	1.83E-04(6.03E-10)
	200	8.20E-04(3.01E-08)†	1.80E-03(1.14E-08)†	1.99E-01(2.49E-05)†	4.66E-01(1.79E-05)†	2.45E-04(6.45E-08)	1.88E-04(1.49E-09)
WFG4	5	1.37E-02(9.15E-08)‡	2.84E-02(2.07E-06)†	1.23E-01(2.03E-05)†	5.92E-01(1.25E-04)†	1.31E-02(6.53E-10)‡	1.76E-02(1.56E-07)
	25	1.36E-02(6.47E-08)‡	2.89E-02(2.48E-06)†	1.23E-01(2.09E-05)†	5.99E-01(2.35E-04)†	1.31E-02(7.65E-10)‡	1.78E-02(1.88E-07)
	50	1.36E-02(7.23E-08)‡	2.86E-02(1.99E-06)†	1.22E-01(8.49E-06)†	5.95E-01(2.25E-04)†	1.31E-02(1.01E-09)‡	1.77E-02(4.70E-07)
	200	1.36E-02(7.77E-08)‡	2.86E-02(2.33E-06)†	1.22E-01(1.45E-05)†	5.96E-01(1.65E-04)†	1.31E-02(1.10E-09)‡	1.76E-02(1.78E-07)
WFG5	5	7.21E-02(2.87E-08)‡	6.90E-02(4.51E-06)‡	2.15E-01(2.05E-05)†	6.72E-01(6.86E-05)†	6.99E-02(9.23E-09)‡	7.56E-02(2.17E-07)
	25	7.21E-02(2.94E-08)‡	6.94E-02(1.45E-06)‡	2.18E-01(1.48E-05)†	6.70E-01(9.77E-05)†	6.99E-02(9.27E-09)‡	7.57E-02(1.44E-07)
	50	7.21E-02(4.41E-08)‡	6.94E-02(2.18E-07)‡	2.18E-01(1.49E-05)†	6.68E-01(9.44E-05)†	6.99E-02(7.36E-09)‡	7.55E-02(1.31E-07)
	200	7.21E-02(1.07E-08)‡	6.93E-02(1.12E-07)‡	2.17E-01(1.73E-05)†	6.71E-01(1.31E-04)†	6.99E-02(9.37E-09)‡	7.57E-02(2.17E-07)
WFG6	5	9.52E-02(1.53E-03)‡	2.01E-02(2.01E-08)‡	2.77E-01(8.06E-04)†	1.16E+00(1.05E-05)†	1.03E-01(8.92E-04)‡	1.24E-01(1.21E-03)
	25	1.01E-01(1.12E-03)	2.01E-02(2.07E-08)‡	2.70E-01(7.51E-04)†	1.16E+00(8.67E-06)†	2.15E-01(8.15E-02)	1.24E-01(8.64E-03)
	50	8.92E-02(9.41E-04)‡	2.00E-02(1.37E-08)‡	2.70E-01(6.83E-04)†	1.16E+00(9.42E-06)†	2.52E-01(8.80E-02)	2.63E-01(1.97E-01)
	200	8.42E-02(1.16E-03)‡	2.01E-02(1.27E-08)‡	2.71E-01(8.25E-04)†	1.16E+00(9.89E-06)†	1.32E-01(6.95E-03)	1.00E-01(8.47E-04)
WFG7	5	1.91E-02(1.07E-07)†	2.00E-02(8.39E-09)†	2.46E-01(2.57E-05)†	6.40E-01(2.53E-04)†	1.83E-02(6.10E-10)†	1.59E-02(3.10E-07)
	25	1.92E-02(7.96E-08)†	2.00E-02(1.05E-08)†	2.46E-01(1.98E-05)†	6.40E-01(3.65E-04)†	1.83E-02(2.10E-10)†	1.59E-02(2.11E-07)
	50	1.91E-02(9.29E-08)†	1.99E-02(1.15E-08)†	2.46E-01(1.93E-05)†	6.40E-01(2.45E-04)†	1.83E-02(3.88E-10)†	1.58E-02(1.74E-07)
	200	1.91E-02(9.56E-08)†	1.99E-02(8.98E-09)†	2.47E-01(3.27E-05)†	6.37E-01(1.89E-04)†	1.83E-02(5.68E-10)†	1.59E-02(2.40E-07)
WFG8	5	1.91E-02(5.03E-08)†	2.00E-02(9.81E-09)†	2.45E-01(2.18E-05)†	6.43E-01(3.37E-04)†	1.83E-02(3.09E-10)†	1.58E-02(2.11E-07)
	25	1.91E-02(7.74E-08)†	2.00E-02(1.80E-08)†	2.46E-01(3.05E-05)†	6.39E-01(3.72E-04)†	1.83E-02(2.12E-10)†	1.59E-02(1.78E-07)
	50	1.92E-02(1.18E-07)†	1.99E-02(9.93E-09)†	2.45E-01(2.04E-05)†	6.39E-01(3.59E-04)†	1.83E-02(3.50E-10)†	1.61E-02(2.46E-07)
	200	1.92E-02(7.55E-08)†	2.00E-02(1.30E-08)†	2.46E-01(2.93E-05)†	6.40E-01(3.84E-04)†	1.83E-02(2.88E-10)†	1.59E-02(3.22E-07)
WFG9	5	5.38E-01(2.43E-03)‡	5.31E-01(2.62E-04)‡	6.11E-01(1.55E-03)	5.15E-01(4.20E-03)‡	5.53E-01(2.23E-02)‡	5.99E-01(1.46E-03)
	25	5.55E-01(2.83E-03)‡	5.39E-01(2.64E-04)‡	6.07E-01(1.77E-03)†	5.19E-01(2.29E-03)‡	5.50E-01(6.52E-03)‡	5.86E-01(3.26E-03)
	50	5.66E-01(2.14E-03)‡	5.40E-01(2.40E-04)‡	6.17E-01(1.74E-03)†	5.40E-01(4.82E-03)‡	5.70E-01(1.21E-02)‡	5.87E-01(1.12E-03)
	200	5.52E-01(1.99E-03)‡	5.42E-01(2.55E-04)‡	6.03E-01(1.70E-03)†	5.46E-01(2.58E-03)‡	5.60E-01(6.79E-03)‡	5.74E-01(1.13E-03)

TABLE 29
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 3 TO 4 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	7.87E-03(4.83E-09)†	8.99E-03(1.56E-06)†	5.42E+01(4.59E+00)†	8.00E+00(3.63E+01)†	7.93E-03(3.28E-08)†	7.28E-03(5.70E-08)
	25	7.98E-03(5.18E-08)‡	8.51E-03(2.48E-07)‡	5.36E+01(5.17E+00)†	1.11E+01(2.42E+02)†	1.03E-02(8.29E-05)‡	4.03E-02(1.16E-02)
	50	9.36E-03(2.62E-05)‡	8.19E-03(9.48E-08)‡	5.34E+01(5.64E+00)†	1.06E+01(1.20E+02)†	4.40E-02(1.46E-02)†	1.91E-02(3.66E-03)
	200	1.15E-02(1.23E-04)‡	7.85E-03(1.61E-09)‡	5.37E+01(5.12E+00)†	2.92E+00(1.19E+00)†	1.67E-02(1.42E-03)‡	1.92E-02(3.24E-03)
F2	5	2.61E-02(1.70E-07)†	5.86E-02(1.38E-04)†	1.39E-01(2.51E-05)†	5.30E-01(2.07E-03)†	3.51E-02(1.47E-05)†	2.28E-02(2.49E-07)
	25	2.66E-02(2.92E-07)†	3.68E-02(4.79E-06)†	1.39E-01(4.30E-05)†	5.49E-01(4.19E-02)†	2.31E-02(9.32E-07)†	2.22E-02(2.89E-07)
	50	2.61E-02(2.91E-07)†	3.00E-02(1.32E-06)†	1.38E-01(2.77E-05)†	4.67E-01(1.50E-04)†	2.22E-02(5.47E-07)	2.22E-02(4.18E-07)
	200	2.60E-02(1.70E-07)†	2.39E-02(5.15E-08)†	1.36E-01(2.56E-05)†	4.67E-01(4.27E-05)†	2.25E-02(1.94E-07)†	2.21E-02(2.33E-07)
F3	5	2.62E-02(1.37E-07)†	2.90E-02(6.77E-06)†	1.51E+02(1.92E+01)†	3.69E+01(4.43E+02)†	2.45E-02(1.32E-06)†	2.31E-02(7.63E-07)
	25	2.64E-02(7.25E-07)‡	2.69E-02(6.81E-06)‡	1.52E+02(2.45E+01)†	4.01E+01(2.55E+03)†	6.46E-02(2.41E-02)†	3.02E-02(1.07E-03)
	50	3.41E-02(1.18E-03)‡	2.53E-02(1.07E-06)‡	1.52E+02(2.70E+01)†	4.67E+01(2.73E+03)†	5.94E-02(1.83E-02)†	4.08E-02(1.04E-02)
	200	4.94E-02(1.10E-02)†	2.38E-02(4.24E-08)†	1.53E+02(1.81E+01)†	7.86E+00(1.57E+01)†	7.89E-02(3.91E-02)	2.22E-02(1.22E-06)
F4	5	1.10E-02(4.62E-08)	8.48E-03(1.04E-07)‡	1.25E-01(1.99E-05)†	3.37E-01(6.86E-04)†	1.81E-02(1.99E-05)†	1.18E-02(2.00E-05)
	25	1.13E-02(9.10E-07)†	1.19E-02(1.36E-04)†	1.30E-01(2.16E-05)†	3.87E-01(1.10E-03)†	1.64E-02(1.92E-07)†	1.07E-02(3.69E-07)
	50	1.88E-02(2.22E-06)†	2.21E-02(2.15E-04)	1.31E-01(2.54E-05)†	4.30E-01(2.03E-03)†	1.61E-02(1.16E-07)†	1.10E-02(4.29E-07)
	200	1.94E-02(2.23E-07)†	1.90E-02(6.34E-07)†	1.33E-01(2.59E-05)†	5.20E-01(1.14E-03)†	1.62E-02(4.76E-08)†	1.05E-02(1.75E-06)
WFG1	5	1.05E-01(2.22E-05)‡	5.35E-01(3.60E-03)†	3.73E-01(4.02E-05)†	1.99E-01(9.01E-04)†	9.40E-02(4.44E-05)‡	1.11E-01(1.11E-04)
	25	1.25E-01(4.59E-05)†	3.95E-01(1.20E-03)†	3.93E-01(4.79E-05)†	3.08E-01(2.23E-02)†	1.06E-01(6.51E-05)‡	1.20E-01(4.96E-05)
	50	1.47E-01(5.53E-05)†	2.71E-01(6.61E-04)†	4.04E-01(9.40E-05)†	3.01E-01(3.99E-02)†	1.17E-01(3.04E-05)	1.17E-01(4.65E-05)
	200	1.67E-01(3.72E-05)†	1.64E-01(2.40E-05)†	4.20E-01(7.15E-05)†	1.68E-01(4.78E-03)†	1.14E-01(2.90E-06)‡	1.16E-01(3.26E-05)
WFG2	5	3.11E-01(9.02E-05)‡	3.60E-01(1.13E-03)†	5.40E-01(2.59E-04)†	8.40E-01(2.21E-07)†	3.35E-01(2.52E-04)†	3.24E-01(1.21E-04)
	25	3.09E-01(9.86E-05)‡	3.04E-01(4.44E-05)†	5.31E-01(4.07E-04)†	8.42E-01(1.49E-07)†	3.01E-01(4.99E-05)‡	3.29E-01(1.56E-04)
	50	3.13E-01(9.87E-05)‡	2.94E-01(2.29E-05)‡	5.33E-01(3.48E-04)†	8.43E-01(5.44E-08)†	3.02E-01(2.76E-05)‡	3.24E-01(1.59E-04)
	200	3.20E-01(2.82E-04)‡	2.89E-01(3.16E-06)‡	5.35E-01(4.20E-04)†	8.43E-01(1.49E-08)†	2.98E-01(7.52E-06)‡	3.27E-01(1.04E-04)
WFG3	5	6.45E-04(2.89E-08)‡	5.20E-02(7.06E-04)‡	3.07E-01(4.28E-03)†	8.34E-01(4.04E-05)†	9.35E-02(1.95E-03)‡	2.00E-01(2.02E-02)
	25	5.97E-04(1.39E-08)‡	1.10E+00(2.24E-02)†	4.87E-01(2.04E-02)	8.59E-01(2.80E-05)†	6.06E-01(4.42E-03)	6.32E-01(7.85E-02)
	50	6.53E-04(2.12E-08)‡	1.10E+00(2.84E-02)†	6.18E-01(6.90E-03)	8.61E-01(1.88E-05)	6.41E-01(2.97E-03)	7.12E-01(8.78E-02)
	200	4.27E-02(1.22E-02)‡	1.16E+00(3.12E-02)†	6.77E-01(2.62E-02)	8.61E-01(7.39E-06)	6.35E-01(4.58E-03)	8.26E-01(1.38E-01)
WFG4	5	8.30E-02(6.04E-06)‡	2.91E-01(7.51E-04)†	2.09E-01(3.39E-05)†	1.01E+00(9.11E-03)†	1.13E-01(3.87E-05)	1.12E-01(1.42E-05)
	25	1.13E-01(6.90E-06)†	2.52E-01(1.68E-04)†	2.19E-01(3.26E-05)†	7.20E-01(6.39E-04)†	9.24E-02(6.19E-06)‡	1.09E-01(8.75E-06)
	50	1.14E-01(4.18E-06)†	2.29E-01(9.80E-05)†	2.19E-01(2.27E-05)†	7.00E-01(6.90E-04)†	9.03E-02(2.06E-06)‡	1.08E-01(8.50E-06)
	200	1.17E-01(7.12E-06)†	1.80E-01(2.04E-05)†	2.21E-01(2.32E-05)†	6.89E-01(2.86E-04)†	9.09E-02(1.80E-06)‡	1.10E-01(6.91E-06)
WFG5	5	1.19E-01(5.08E-06)‡	3.87E-01(1.56E-03)†	2.93E-01(2.58E-05)†	1.74E+00(1.07E-02)†	1.45E-01(4.38E-05)‡	1.50E-01(1.67E-05)
	25	1.43E-01(2.92E-06)‡	2.06E-01(2.12E-04)†	2.97E-01(2.35E-05)†	1.25E+00(2.75E-03)†	1.28E-01(1.64E-06)‡	1.48E-01(5.84E-06)
	50	1.44E-01(1.97E-06)‡	1.83E-01(6.05E-05)†	3.00E-01(1.89E-05)†	1.26E+00(1.35E-03)†	1.24E-01(1.12E-06)‡	1.48E-01(3.61E-06)
	200	1.45E-01(3.65E-06)‡	1.47E-01(1.23E-05)‡	2.99E-01(3.01E-05)†	1.26E+00(8.44E-04)†	1.24E-01(7.19E-07)‡	1.48E-01(2.45E-06)
WFG6	5	1.76E-01(1.69E-03)‡	3.84E-01(2.85E-03)†	3.70E-01(8.47E-04)†	1.51E+00(1.17E-05)†	2.10E-01(1.25E-03)	1.98E-01(1.30E-03)
	25	1.97E-01(1.15E-03)	2.60E-01(1.29E-04)†	3.73E-01(8.12E-04)†	1.47E+00(8.61E-04)†	2.20E-01(1.15E-02)	1.83E-01(1.13E-03)
	50	1.90E-01(9.00E-04)	2.17E-01(6.65E-05)†	3.78E-01(6.02E-04)†	1.43E+00(1.21E-04)†	2.27E-01(1.03E-02)	1.89E-01(1.80E-03)
	200	1.88E-01(1.19E-03)	1.63E-01(1.67E-05)	3.84E-01(7.00E-04)†	1.44E+00(5.82E-05)†	2.05E-01(8.35E-03)	1.75E-01(6.20E-04)
WFG7	5	1.20E-01(8.49E-06)†	6.09E-01(1.58E-03)†	3.39E-01(3.57E-05)†	8.58E-01(4.82E-03)†	1.23E-01(3.24E-05)†	1.07E-01(1.53E-05)
	25	1.25E-01(8.59E-06)†	4.04E-01(7.16E-04)†	3.48E-01(3.28E-05)†	6.16E-01(5.20E-04)†	1.04E-01(3.91E-06)	1.03E-01(1.13E-05)
	50	1.25E-01(5.94E-06)†	3.26E-01(4.75E-04)†	3.44E-01(2.70E-05)†	6.04E-01(5.69E-04)†	1.05E-01(3.50E-06)	1.02E-01(1.07E-05)
	200	1.25E-01(7.30E-06)†	2.05E-01(1.11E-04)†	3.47E-01(3.50E-05)†	6.20E-01(1.53E-04)†	1.08E-01(2.06E-06)†	1.03E-01(7.63E-06)
WFG8	5	1.20E-01(1.82E-05)†	6.01E-01(1.50E-03)†	3.38E-01(2.99E-05)†	8.70E-01(2.46E-03)†	1.24E-01(3.30E-05)†	1.07E-01(1.33E-05)
	25	1.25E-01(4.53E-06)†	3.97E-01(5.24E-04)†	3.46E-01(2.14E-05)†	6.07E-01(5.85E-04)†	1.05E-01(4.40E-06)†	1.04E-01(9.89E-06)
	50	1.25E-01(7.24E-06)†	3.28E-01(4.06E-04)†	3.47E-01(4.07E-05)†	6.02E-01(5.16E-04)†	1.05E-01(3.78E-06)†	1.03E-01(6.83E-06)
	200	1.25E-01(8.84E-06)†	2.09E-01(8.89E-05)†	3.47E-01(2.84E-05)†	6.20E-01(1.27E-04)†	1.08E-01(1.07E-06)†	1.03E-01(1.07E-05)
WFG9	5	6.30E-01(4.89E-03)‡	7.67E-01(9.21E-04)	7.51E-01(1.44E-03)	7.40E-01(1.70E-02)	6.97E-01(2.09E-03)‡	7.31E-01(4.61E-03)
	25	6.99E-01(5.16E-03)	7.07E-01(3.84E-04)	7.76E-01(1.51E-03)†	7.91E-01(6.44E-03)†	6.96E-01(1.29E-03)	7.02E-01(3.38E-03)
	50	7.16E-01(5.48E-03)	6.86E-01(2.60E-04)	7.71E-01(1.63E-03)†	8.11E-01(1.07E-02)†	6.76E-01(1.35E-03)	7.00E-01(3.42E-03)
	200	7.16E-01(2.98E-03)	6.72E-01(2.50E-04)	7.61E-01(1.36E-03)†	7.83E-01(1.07E-02)†	6.72E-01(8.89E-04)	6.88E-01(4.36E-03)
+-=		49/2/1	41/10/1	50/2/0	44/5/3	38/9/5	—

TABLE 30
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 4 TO 5 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.66E-02(4.83E-08)†	1.75E-02(5.33E-07)†	4.55E+01(3.17E+00)†	1.73E+01(5.22E+02)†	2.66E-02(8.66E-04)†	1.47E-02(2.31E-07)
	25	2.13E-02(1.47E-04)‡	1.52E-02(1.81E-06)	4.51E+01(5.44E+00)†	5.49E+02(2.78E+04)†	2.95E-02(2.51E-03)‡	9.65E-02(8.42E-02)
	50	2.64E-02(5.02E-04)‡	1.17E-02(1.55E-06)‡	4.54E+01(3.12E+00)†	7.38E+02(2.67E+04)†	2.34E-02(5.44E-04)‡	5.94E-02(4.87E-02)
	200	1.91E-01(7.86E-02)†	4.44E-03(1.62E-07)‡	4.51E+01(5.36E+00)†	7.90E+02(4.56E+04)†	2.70E-02(2.98E-03)†	1.46E-02(2.44E-05)
F2	5	6.03E-02(1.64E-06)†	1.10E-01(1.79E-04)†	1.53E-01(2.18E-05)†	8.99E-01(2.18E-02)†	7.58E-02(3.40E-05)†	5.06E-02(2.18E-06)
	25	6.06E-02(1.12E-06)†	7.63E-02(1.47E-05)†	1.53E-01(2.76E-05)†	1.12E+00(4.33E-02)†	4.82E-02(2.26E-06)‡	4.95E-02(2.60E-06)
	50	6.15E-02(1.22E-06)†	6.22E-02(2.94E-06)†	1.53E-01(3.28E-05)†	1.02E+00(1.39E-03)†	4.48E-02(3.87E-07)‡	5.07E-02(2.53E-06)
	200	6.59E-02(1.62E-05)†	4.63E-02(3.80E-07)‡	1.52E-01(2.78E-05)†	1.00E+00(0.00E+00)†	4.14E-02(1.16E-06)‡	5.15E-02(1.82E-06)
F3	5	5.96E-02(6.73E-07)†	6.16E-02(8.03E-06)†	1.30E+02(1.91E+01)†	6.17E+01(1.93E+03)†	5.84E-02(9.81E-05)†	5.19E-02(2.17E-05)
	25	1.02E-01(5.31E-02)	6.05E-02(2.51E-05)	1.28E+02(2.54E+01)†	8.54E+01(1.26E+03)†	9.70E-02(1.01E-02)	1.70E-01(1.26E-01)
	50	6.42E-02(9.55E-05)‡	5.56E-02(1.01E-05)‡	1.29E+02(2.34E+01)†	6.42E+01(6.42E+02)†	1.01E-01(4.81E-02)	1.45E-01(9.62E-02)
	200	3.11E-01(2.65E-01)†	4.62E-02(7.18E-07)‡	1.30E+02(1.96E+01)†	1.54E+00(1.82E+00)†	6.96E-02(5.13E-03)	6.78E-02(1.17E-02)
F4	5	2.09E-02(2.10E-07)†	1.23E-02(2.76E-06)‡	1.29E-01(4.29E-05)†	4.00E-01(3.83E-03)†	4.87E-02(5.33E-04)†	2.24E-02(4.15E-05)
	25	3.95E-02(1.78E-05)†	2.86E-02(2.79E-04)†	1.44E-01(8.34E-05)†	5.08E-01(2.05E-03)†	3.59E-02(7.39E-07)†	1.98E-02(1.58E-05)
	50	5.15E-02(8.68E-06)†	4.23E-02(7.22E-05)†	1.46E-01(3.27E-05)†	5.59E-01(2.24E-03)†	3.14E-02(3.51E-06)†	1.79E-02(7.35E-06)
	200	5.99E-02(5.02E-05)†	1.82E-02(2.67E-06)†	1.44E-01(4.68E-05)†	6.68E-01(4.06E-04)†	1.42E-02(3.29E-06)‡	1.55E-02(3.65E-06)
WFG1	5	1.99E-01(1.54E-04)‡	4.46E-01(1.57E-03)†	4.83E-01(1.23E-04)†	1.18E+00(2.13E-01)†	2.06E-01(1.68E-04)‡	2.33E-01(2.40E-04)
	25	2.83E-01(3.10E-04)†	3.84E-01(6.52E-04)†	5.52E-01(2.17E-04)†	1.86E+00(1.97E-02)†	2.40E-01(1.23E-04)	2.44E-01(1.02E-04)
	50	3.17E-01(2.41E-04)†	3.27E-01(2.77E-04)†	5.79E-01(2.25E-04)†	1.96E+00(1.80E-02)†	2.68E-01(1.06E-04)†	2.44E-01(7.05E-05)
	200	3.46E-01(1.44E-04)†	2.86E-01(2.48E-05)†	6.01E-01(1.67E-04)†	2.44E+00(1.19E-02)†	2.59E-01(2.81E-05)†	2.42E-01(1.08E-04)
WFG2	5	7.16E-01(4.75E-04)	6.26E-01(4.67E-03)‡	9.00E-01(7.36E-04)†	7.23E-01(7.10E-07)	6.91E-01(1.38E-03)‡	7.19E-01(1.44E-03)
	25	6.80E-01(5.68E-04)‡	5.29E-01(9.79E-05)‡	8.46E-01(8.53E-04)†	7.26E-01(1.04E-07)†	6.02E-01(2.08E-04)‡	7.03E-01(6.31E-04)
	50	7.17E-01(1.07E-03)†	5.23E-01(3.62E-05)‡	8.63E-01(1.41E-03)†	7.27E-01(1.65E-08)†	5.96E-01(1.55E-04)‡	6.90E-01(8.70E-04)
	200	7.60E-01(2.51E-03)†	5.14E-01(1.38E-05)‡	8.97E-01(1.81E-03)†	7.28E-01(1.63E-09)†	5.84E-01(3.18E-05)‡	7.12E-01(5.40E-04)
WFG3	5	1.04E-03(4.52E-08)‡	6.66E-01(2.42E-01)	8.00E-01(1.05E-02)†	8.36E-01(1.70E-05)†	8.56E-01(1.48E-02)†	4.82E-01(7.59E-02)
	25	5.70E-03(6.55E-04)‡	2.17E+00(1.96E-02)†	1.32E+00(2.34E-02)	8.55E-01(5.13E-06)‡	1.42E+00(1.23E-02)†	1.24E+00(1.64E-01)
	50	5.71E-02(3.21E-02)‡	2.13E+00(3.82E-02)†	1.51E+00(3.52E-02)	8.61E-01(1.60E-06)‡	1.58E+00(2.79E-02)†	1.32E+00(1.85E-01)
	200	1.32E+00(1.66E-01)	2.06E+00(4.32E-02)†	1.58E+00(2.25E-02)	8.67E-01(2.55E-06)‡	1.62E+00(2.36E-02)†	1.37E+00(1.74E-01)
WFG4	5	2.66E-01(2.00E-04)‡	5.42E-01(1.35E-03)†	4.35E-01(1.73E-04)†	7.46E-01(4.82E-03)†	3.32E-01(1.35E-04)†	2.98E-01(7.73E-05)
	25	3.46E-01(2.57E-05)†	4.18E-01(1.05E-04)†	4.39E-01(9.46E-05)†	8.24E-01(7.19E-04)†	2.34E-01(2.38E-05)‡	2.92E-01(6.59E-05)
	50	3.53E-01(3.72E-05)†	3.83E-01(1.16E-04)†	4.37E-01(5.69E-05)†	8.41E-01(8.12E-04)†	2.27E-01(1.97E-05)‡	2.90E-01(9.51E-05)
	200	3.54E-01(3.63E-05)†	3.17E-01(6.17E-05)‡	4.37E-01(5.00E-05)†	8.69E-01(6.04E-04)†	2.63E-01(1.72E-05)‡	3.18E-01(8.24E-05)
WFG5	5	2.92E-01(6.21E-05)‡	5.55E-01(9.87E-04)†	5.23E-01(1.91E-04)†	1.80E+00(6.27E-03)†	3.79E-01(1.64E-04)†	3.33E-01(1.14E-04)
	25	3.54E-01(4.47E-05)†	3.67E-01(1.32E-04)†	5.13E-01(9.19E-05)†	1.85E+00(5.70E-04)†	2.68E-01(2.34E-05)‡	3.14E-01(3.62E-05)
	50	3.61E-01(3.24E-05)†	3.36E-01(8.24E-05)†	5.09E-01(1.02E-04)†	1.86E+00(2.85E-04)†	2.60E-01(1.86E-05)‡	3.17E-01(4.06E-05)
	200	3.61E-01(2.91E-05)†	2.91E-01(1.32E-05)‡	5.08E-01(7.54E-05)†	1.87E+00(1.90E-04)†	2.62E-01(2.29E-05)‡	3.41E-01(8.02E-05)
WFG6	5	3.81E-01(2.36E-03)	6.98E-01(6.75E-03)†	6.00E-01(1.13E-03)†	1.44E+00(1.62E-05)†	4.62E-01(2.16E-03)†	3.91E-01(1.77E-03)
	25	4.36E-01(1.25E-03)†	4.45E-01(2.92E-04)†	6.05E-01(9.83E-04)†	1.45E+00(1.39E-04)†	3.66E-01(1.01E-02)†	3.62E-01(9.04E-04)
	50	4.37E-01(1.11E-03)†	3.96E-01(7.16E-05)†	6.15E-01(7.06E-04)†	1.45E+00(8.46E-06)†	3.84E-01(1.36E-02)†	3.71E-01(6.25E-04)
	200	4.33E-01(1.38E-03)†	3.29E-01(2.45E-05)‡	6.12E-01(8.32E-04)†	1.45E+00(7.16E-06)†	3.76E-01(1.16E-02)†	3.75E-01(6.46E-04)
WFG7	5	3.47E-01(5.44E-05)†	8.91E-01(2.32E-03)†	5.44E-01(2.30E-04)†	8.82E-01(4.29E-03)†	3.41E-01(3.01E-04)†	2.86E-01(1.92E-04)
	25	3.84E-01(1.02E-04)†	6.17E-01(6.60E-04)†	5.71E-01(7.96E-05)†	6.34E-01(2.00E-03)†	2.62E-01(4.62E-05)‡	2.71E-01(2.46E-04)
	50	3.93E-01(7.97E-05)†	5.30E-01(5.46E-04)†	5.80E-01(7.61E-05)†	6.53E-01(1.16E-03)†	2.60E-01(1.81E-05)‡	2.81E-01(1.54E-04)
	200	3.95E-01(1.01E-04)†	3.90E-01(1.43E-04)†	5.86E-01(1.65E-04)†	7.80E-01(2.25E-03)†	2.78E-01(1.95E-05)‡	2.97E-01(2.69E-04)
WFG8	5	3.47E-01(1.18E-04)†	8.88E-01(2.03E-03)†	5.44E-01(1.32E-04)†	8.76E-01(4.39E-03)†	3.37E-01(2.95E-04)†	2.82E-01(1.63E-04)
	25	3.86E-01(6.24E-05)†	6.25E-01(6.23E-04)†	5.76E-01(1.22E-04)†	6.42E-01(2.59E-03)†	2.64E-01(2.97E-05)‡	2.72E-01(1.88E-04)
	50	3.95E-01(5.74E-05)†	5.32E-01(7.64E-04)†	5.84E-01(9.36E-05)†	6.46E-01(2.16E-03)†	2.64E-01(2.17E-05)‡	2.84E-01(1.46E-04)
	200	3.96E-01(1.02E-04)†	3.90E-01(1.13E-04)†	5.84E-01(8.86E-05)†	7.78E-01(4.03E-03)†	2.79E-01(1.02E-05)‡	2.89E-01(2.31E-04)
WFG9	5	8.08E-01(1.40E-02)‡	8.67E-01(2.56E-03)‡	1.00E+00(8.29E-04)†	1.03E+00(4.92E-02)	9.20E-01(4.95E-04)	9.09E-01(4.61E-03)
	25	9.28E-01(1.19E-02)†	8.84E-01(2.94E-04)	1.02E+00(7.47E-04)†	1.09E+00(1.11E-02)†	8.89E-01(9.37E-04)	8.76E-01(5.57E-03)
	50	9.61E-01(6.44E-03)†	8.76E-01(2.56E-04)	1.02E+00(4.59E-04)†	1.14E+00(3.54E-02)†	8.79E-01(1.36E-03)	8.72E-01(4.80E-03)
	200	9.79E-01(2.20E-03)†	8.72E-01(1.81E-04)	1.01E+00(1.74E-04)†	1.07E+00(3.06E-02)†	8.82E-01(1.52E-03)	8.71E-01(4.63E-03)

TABLE 31
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 5 TO 6 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	2.60E-02(1.76E-07)†	2.66E-02(5.07E-07)†	3.76E+01(3.29E+00)†	7.98E+01(6.94E+03)†	3.50E-02(8.48E-04)†	2.14E-02(1.02E-06)
	25	3.69E-02(3.69E-04)	2.76E-02(1.26E-06)	3.78E+01(3.52E+00)†	6.85E+02(2.57E+04)†	5.02E-02(6.22E-03)	1.93E-01(4.45E-01)
	50	1.64E-01(9.57E-02)†	2.71E-02(1.00E-06)‡	3.79E+01(1.87E+00)†	8.39E+02(1.79E+04)†	4.05E-02(4.72E-03)†	2.77E-02(1.05E-03)
	200	5.94E+01(7.68E+02)†	2.46E-02(1.30E-07)	1.01E+02(5.37E+02)†	9.58E+02(2.27E+04)†	1.08E-01(3.56E-02)‡	1.21E-01(8.88E-02)
F2	5	9.89E-02(2.34E-06)†	1.42E-01(1.37E-04)†	1.81E-01(8.29E-05)†	1.02E+00(1.97E-02)†	1.09E-01(6.62E-05)†	7.75E-02(9.97E-06)
	25	1.03E-01(8.81E-06)†	1.12E-01(1.35E-05)†	2.04E-01(5.42E-04)†	1.04E+00(9.25E-03)†	7.48E-02(3.91E-06)	7.50E-02(1.03E-05)
	50	1.24E-01(2.67E-04)†	9.90E-02(1.76E-05)†	2.24E-01(6.83E-04)†	1.01E+00(1.14E-03)†	7.00E-02(1.85E-06)‡	7.39E-02(8.08E-06)
	200	2.73E-01(1.66E-03)†	7.49E-02(2.05E-06)†	3.38E-01(2.53E-03)†	1.00E+00(1.39E-06)†	6.06E-02(1.27E-06)‡	7.34E-02(3.75E-06)
F3	5	9.70E-02(1.59E-06)†	1.01E-01(2.28E-05)†	1.09E+02(1.28E+01)†	5.49E+01(4.74E+02)†	1.15E-01(2.35E-03)†	8.68E-02(4.31E-04)
	25	1.28E-01(1.08E-02)	9.98E-02(4.43E-05)	1.09E+02(2.25E+01)†	7.07E+01(5.33E+02)†	1.25E-01(1.19E-02)	1.50E-01(1.72E-02)
	50	2.66E-01(8.78E-02)‡	9.25E-02(3.40E-05)	1.09E+02(1.62E+01)†	5.37E+01(1.91E+02)†	1.36E-01(3.23E-02)	5.91E-01(4.29E+00)
	200	4.86E+01(1.80E+03)†	7.33E-02(5.20E-06)‡	1.71E+02(2.15E+03)†	5.13E+00(6.06E+01)†	1.21E-01(2.11E-02)	2.31E-01(6.91E-01)
F4	5	3.02E-02(3.67E-06)‡	1.95E-02(2.31E-05)‡	1.55E-01(2.11E-04)†	5.01E-01(3.92E-03)†	9.14E-02(2.84E-04)†	3.70E-02(5.61E-05)
	25	8.51E-02(6.24E-05)†	5.65E-02(2.47E-04)†	2.50E-01(8.44E-04)†	5.69E-01(8.31E-04)†	5.98E-02(3.03E-06)†	3.73E-02(1.93E-05)
	50	1.48E-01(1.54E-03)†	7.37E-02(6.62E-05)†	3.80E-01(1.68E-03)†	6.33E-01(7.66E-04)†	5.93E-02(9.87E-07)†	3.73E-02(3.42E-05)
	200	5.21E-01(3.18E-03)†	7.15E-02(1.38E-06)†	5.22E-01(2.81E-03)†	6.82E-01(2.86E-04)†	6.15E-02(4.32E-07)†	3.79E-02(5.18E-05)
WFG1	5	3.08E-01(7.65E-04)‡	3.65E-01(6.65E-04)	5.88E-01(1.84E-04)†	1.91E+00(4.14E-02)†	3.17E-01(3.85E-04)†	3.76E-01(7.37E-04)
	25	4.31E-01(4.11E-04)†	4.06E-01(4.54E-04)†	7.00E-01(6.09E-04)†	2.20E+00(4.77E-02)†	4.07E-01(2.62E-04)†	3.71E-01(3.31E-04)
	50	4.65E-01(4.50E-04)†	4.06E-01(1.47E-04)†	7.28E-01(5.36E-04)†	2.53E+00(1.93E-02)†	4.12E-01(9.58E-05)†	3.69E-01(2.48E-04)
	200	5.05E-01(5.19E-04)†	3.93E-01(5.51E-05)†	7.53E-01(2.85E-04)†	2.72E+00(5.60E-03)†	3.79E-01(1.36E-04)†	3.65E-01(3.43E-04)
WFG2	5	8.61E-01(9.07E-04)‡	6.72E-01(5.51E-03)‡	1.12E+00(1.53E-03)†	7.69E-01(1.93E-06)‡	7.42E-01(1.03E-03)‡	9.05E-01(3.66E-03)
	25	9.14E-01(3.74E-03)	5.47E-01(1.70E-04)‡	1.18E+00(4.15E-03)†	7.74E-01(2.99E-07)‡	7.18E-01(3.26E-04)‡	8.96E-01(2.92E-03)
	50	1.13E+00(1.34E-02)†	5.49E-01(9.46E-05)‡	1.29E+00(6.88E-03)†	7.75E-01(3.07E-08)‡	7.17E-01(3.44E-04)‡	8.80E-01(2.23E-03)
	200	1.20E+00(6.74E-03)†	5.54E-01(4.58E-05)‡	1.38E+00(5.40E-03)†	7.76E-01(3.26E-11)‡	7.07E-01(1.06E-04)‡	9.50E-01(1.83E-03)
WFG3	5	1.02E-03(5.17E-08)‡	2.07E+00(3.40E-01)†	1.47E+00(2.67E-02)†	9.10E-01(1.04E-04)	1.61E+00(1.90E-02)†	1.12E+00(2.14E-01)
	25	7.19E-02(4.85E-02)‡	2.92E+00(1.48E-01)†	2.19E+00(1.07E-01)	9.36E-01(7.03E-06)‡	1.99E+00(3.86E-02)	2.10E+00(3.81E-01)
	50	9.31E-01(4.05E-01)‡	2.89E+00(1.61E-01)†	2.19E+00(1.47E-01)	9.41E-01(1.51E-06)‡	2.07E+00(9.64E-02)	2.02E+00(3.48E-01)
	200	2.35E+00(3.32E-01)	2.87E+00(1.77E-01)†	2.23E+00(2.04E-01)	9.46E-01(2.55E-07)‡	2.20E+00(1.53E-01)	2.17E+00(4.34E-01)
WFG4	5	5.90E-01(5.55E-04)†	8.01E-01(3.38E-03)†	8.07E-01(2.26E-04)†	7.38E-01(4.08E-03)†	6.33E-01(5.19E-04)†	5.71E-01(5.41E-04)
	25	7.09E-01(1.78E-04)†	6.11E-01(4.53E-04)†	8.11E-01(3.18E-04)†	7.78E-01(1.08E-03)†	4.58E-01(1.31E-04)‡	5.05E-01(4.08E-04)
	50	7.23E-01(1.80E-04)†	5.85E-01(1.30E-04)†	8.09E-01(3.87E-04)†	7.98E-01(1.23E-03)†	4.32E-01(8.97E-05)‡	4.87E-01(4.23E-04)
	200	7.34E-01(2.26E-04)†	5.53E-01(9.11E-05)†	7.90E-01(1.83E-04)†	8.47E-01(5.08E-04)†	3.83E-01(4.90E-05)‡	4.46E-01(3.18E-04)
WFG5	5	6.00E-01(4.38E-04)	8.70E-01(1.76E-03)†	9.34E-01(4.87E-04)†	1.92E+00(4.41E-04)†	7.07E-01(4.67E-04)†	6.10E-01(6.87E-04)
	25	7.16E-01(2.25E-04)†	6.63E-01(3.27E-04)†	8.98E-01(3.88E-04)†	1.97E+00(5.61E-05)†	5.12E-01(6.93E-05)‡	5.46E-01(4.34E-04)
	50	7.30E-01(1.77E-04)†	6.20E-01(3.57E-04)†	8.85E-01(2.58E-04)†	1.98E+00(5.23E-05)†	4.85E-01(1.10E-04)‡	5.36E-01(6.97E-04)
	200	7.41E-01(1.16E-04)†	5.63E-01(1.20E-04)†	8.67E-01(2.55E-04)†	1.98E+00(2.21E-05)†	4.61E-01(9.00E-05)‡	5.42E-01(6.49E-04)
WFG6	5	7.26E-01(3.91E-03)†	1.05E+00(7.54E-03)†	9.88E-01(2.19E-03)†	1.36E+00(1.68E-05)†	8.00E-01(2.72E-03)†	6.69E-01(2.66E-03)
	25	8.13E-01(1.37E-03)†	6.74E-01(2.86E-04)†	9.57E-01(1.16E-03)†	1.37E+00(3.01E-04)†	6.11E-01(1.45E-02)‡	6.21E-01(1.40E-03)
	50	8.13E-01(1.40E-03)†	6.40E-01(2.48E-04)	9.70E-01(8.38E-04)†	1.37E+00(9.86E-06)†	6.22E-01(2.16E-02)‡	6.38E-01(1.20E-03)
	200	7.85E-01(4.85E-04)†	5.92E-01(5.98E-05)‡	9.40E-01(3.32E-04)†	1.38E+00(7.89E-04)†	6.07E-01(1.95E-02)‡	6.29E-01(9.18E-04)
WFG7	5	7.08E-01(3.14E-04)†	1.14E+00(9.26E-03)†	8.98E-01(4.56E-04)†	1.00E+00(6.49E-03)†	6.11E-01(5.32E-04)†	5.28E-01(4.99E-04)
	25	7.99E-01(3.91E-04)†	7.10E-01(1.67E-03)†	9.69E-01(2.97E-04)†	8.60E-01(3.35E-03)†	4.73E-01(1.20E-04)‡	4.99E-01(2.50E-04)
	50	8.27E-01(5.61E-04)†	6.76E-01(5.25E-04)†	9.79E-01(3.22E-04)†	8.94E-01(4.18E-03)†	4.41E-01(1.26E-04)‡	4.85E-01(3.66E-04)
	200	8.29E-01(4.45E-04)†	6.53E-01(2.58E-04)†	9.81E-01(3.34E-04)†	1.18E+00(8.53E-03)†	4.03E-01(4.61E-05)‡	4.29E-01(2.80E-04)
WFG8	5	7.13E-01(4.07E-04)†	1.17E+00(1.36E-02)†	8.98E-01(4.69E-04)†	1.00E+00(4.88E-03)†	6.17E-01(4.78E-04)†	5.24E-01(3.74E-04)
	25	8.08E-01(2.46E-04)†	7.15E-01(1.38E-03)†	9.65E-01(3.10E-04)†	8.67E-01(4.33E-03)†	4.70E-01(1.33E-04)‡	5.02E-01(2.79E-04)
	50	8.27E-01(4.67E-04)†	6.81E-01(8.21E-04)†	9.74E-01(2.28E-04)†	8.94E-01(2.68E-03)†	4.41E-01(1.21E-04)‡	4.84E-01(4.15E-04)
	200	8.22E-01(2.77E-04)†	6.55E-01(2.58E-04)†	9.80E-01(3.68E-04)†	1.22E+00(6.51E-03)†	4.02E-01(5.28E-05)‡	4.31E-01(2.15E-04)
WFG9	5	1.21E+00(1.28E-02)‡	1.17E+00(2.31E-03)‡	1.42E+00(2.39E-04)†	1.15E+00(2.27E-02)‡	1.33E+00(4.04E-04)	1.30E+00(6.00E-03)
	25	1.36E+00(1.02E-02)†	1.23E+00(1.64E-03)	1.44E+00(2.34E-04)†	1.26E+00(1.54E-02)	1.31E+00(9.31E-04)†	1.26E+00(6.11E-03)
	50	1.38E+00(6.25E-03)†	1.25E+00(8.37E-04)	1.44E+00(2.70E-04)†	1.28E+00(2.17E-02)	1.30E+00(1.43E-03)†	1.25E+00(5.33E-03)
	200	1.41E+00(1.39E-03)†	1.25E+00(2.52E-04)	1.42E+00(1.75E-04)†	1.33E+00(2.19E-02)†	1.28E+00(1.55E-03)	1.25E+00(5.36E-03)
+-=		44/6/2	38/10/4	44/5/3	45/5/2	35/7/10	—

TABLE 32
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 6 TO 7 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	3.56E-02(1.86E-07)†	3.66E-02(4.83E-07)†	3.02E+01(2.02E+00)†	1.69E+02(7.10E+03)†	7.14E-02(9.90E-03)†	2.87E-02(3.67E-06)
	25	8.05E-02(3.02E-03)‡	3.39E-02(5.77E-07)	2.99E+01(2.09E+00)†	6.81E+02(6.85E+03)†	9.96E-02(4.87E-02)	1.14E-01(5.71E-02)
	50	2.72E+00(1.97E+01)†	3.16E-02(3.47E-07)‡	3.07E+01(2.98E+00)†	7.97E+02(5.23E+03)†	6.77E-02(6.28E-03)†	3.99E-02(1.39E-03)
	200	2.09E+02(9.09E+01)†	2.81E-02(8.08E-08)	1.95E+02(6.82E+01)†	9.19E+02(4.60E+03)†	1.23E-01(6.98E-02)†	5.81E-02(1.19E-02)
F2	5	1.45E-01(5.94E-06)†	1.57E-01(1.03E-04)†	2.15E-01(7.44E-05)†	9.75E-01(5.17E-03)†	1.36E-01(5.76E-05)†	1.05E-01(1.58E-05)
	25	1.74E-01(6.53E-04)†	1.27E-01(2.34E-05)†	3.29E-01(1.27E-03)†	1.05E+00(1.13E-03)†	9.13E-02(6.12E-06)‡	9.44E-02(1.38E-05)
	50	3.38E-01(4.56E-03)†	1.13E-01(1.11E-05)†	4.65E-01(2.15E-03)†	1.01E+00(4.89E-03)†	8.38E-02(2.36E-06)‡	9.78E-02(1.34E-05)
	200	6.53E-01(1.32E-03)†	9.28E-02(1.10E-06)†	5.97E-01(1.08E-03)†	1.01E+00(1.06E-04)†	8.41E-02(3.05E-06)‡	9.56E-02(9.30E-06)
F3	5	1.40E-01(2.54E-06)†	1.34E-01(1.82E-05)†	8.67E+01(1.22E+01)†	4.05E+01(1.99E+02)†	1.57E-01(3.78E-03)†	1.18E-01(6.62E-04)
	25	1.98E-01(1.72E-02)	1.28E-01(2.28E-05)	8.69E+01(1.38E+01)†	4.54E+01(6.33E+01)†	1.47E-01(1.18E-02)‡	3.29E-01(4.89E-01)
	50	2.57E+00(1.31E+01)†	1.23E-01(2.08E-05)‡	8.81E+01(1.36E+01)†	4.23E+01(1.27E+02)†	1.49E-01(1.33E-02)	8.11E-01(1.44E+01)
	200	4.38E+02(4.40E+03)†	1.09E-01(2.35E-06)‡	4.52E+02(1.15E+03)†	1.71E+01(7.34E+01)†	1.56E-01(3.12E-02)	1.23E-01(3.67E-03)
F4	5	4.13E-02(3.41E-05)‡	2.33E-02(3.78E-05)‡	1.84E-01(2.56E-04)†	4.74E-01(3.59E-03)†	1.05E-01(1.38E-04)†	5.10E-02(2.30E-04)
	25	1.82E-01(1.59E-03)†	6.70E-02(5.98E-05)†	4.68E-01(1.81E-03)†	5.75E-01(9.49E-04)†	6.87E-02(8.64E-06)†	4.93E-02(2.71E-05)
	50	5.29E-01(8.07E-03)†	7.95E-02(2.45E-05)†	6.44E-01(1.19E-03)†	6.42E-01(9.16E-04)†	6.39E-02(2.75E-06)†	5.05E-02(4.15E-05)
	200	8.64E-01(3.38E-04)†	7.89E-02(1.24E-06)†	7.63E-01(1.01E-04)†	7.00E-01(2.89E-04)†	6.59E-02(8.01E-07)†	5.43E-02(4.03E-05)
WFG1	5	4.33E-01(1.33E-03)‡	3.02E-01(3.10E-04)‡	7.19E-01(6.66E-04)†	2.25E+00(3.05E-02)†	4.21E-01(1.44E-03)‡	5.19E-01(1.61E-03)
	25	5.77E-01(7.61E-04)†	3.74E-01(2.79E-04)‡	8.44E-01(5.03E-04)†	2.58E+00(2.43E-02)†	5.08E-01(3.95E-04)	5.12E-01(5.45E-04)
	50	6.12E-01(5.84E-04)†	3.77E-01(1.64E-04)‡	8.80E-01(8.44E-04)†	2.71E+00(7.61E-03)†	4.84E-01(1.45E-04)	4.85E-01(1.17E-03)
	200	6.46E-01(5.08E-04)†	3.76E-01(3.47E-05)‡	9.10E-01(4.35E-04)†	2.76E+00(2.35E-03)†	4.33E-01(4.06E-04)‡	4.66E-01(4.73E-04)
WFG2	5	2.10E+00(9.87E-03)‡	8.76E-01(3.55E-03)‡	2.21E+00(6.94E-03)‡	6.33E-01(2.29E-06)‡	2.05E+00(1.12E-02)‡	2.36E+00(1.83E-02)
	25	2.14E+00(1.07E-02)	7.78E-01(4.59E-04)‡	2.14E+00(7.64E-03)	6.37E-01(2.84E-07)‡	1.64E+00(2.44E-03)‡	2.14E+00(8.94E-03)
	50	2.16E+00(8.03E-03)†	7.89E-01(4.73E-04)‡	2.14E+00(7.16E-03)†	6.38E-01(3.74E-08)‡	1.57E+00(1.99E-03)‡	2.08E+00(1.04E-02)
	200	2.14E+00(1.13E-02)†	8.08E-01(6.72E-05)‡	2.14E+00(6.81E-03)†	6.39E-01(3.20E-11)‡	1.51E+00(1.37E-04)‡	2.06E+00(4.75E-03)
WFG3	5	3.17E-03(2.89E-05)‡	3.40E+00(1.56E-01)†	2.22E+00(3.36E-02)†	7.54E-01(1.18E-04)‡	2.18E+00(3.03E-02)†	1.64E+00(3.24E-01)
	25	8.18E-01(3.26E-01)‡	3.50E+00(8.88E-02)†	2.78E+00(1.25E-01)	7.74E-01(1.76E-05)‡	2.82E+00(1.17E-01)	2.80E+00(2.78E-01)
	50	2.71E+00(4.93E-01)‡	3.48E+00(1.40E-01)	2.90E+00(1.14E-01)‡	7.82E-01(2.02E-05)‡	3.08E+00(2.39E-01)	3.19E+00(3.29E-01)
	200	3.22E+00(1.69E-01)	3.53E+00(2.07E-01)†	2.84E+00(1.08E-01)‡	7.87E-01(2.34E-05)‡	3.00E+00(2.17E-01)	3.12E+00(2.20E-01)
WFG4	5	1.07E+00(1.36E-03)†	8.72E-01(9.27E-03)‡	1.32E+00(7.69E-04)†	8.32E-01(2.35E-03)‡	1.01E+00(1.38E-03)†	9.24E-01(2.12E-03)
	25	1.24E+00(8.85E-04)†	5.88E-01(5.20E-04)‡	1.36E+00(1.44E-03)†	8.42E-01(1.65E-03)†	6.64E-01(1.92E-04)‡	7.90E-01(5.85E-04)
	50	1.31E+00(1.50E-03)†	5.66E-01(2.00E-04)‡	1.39E+00(1.29E-03)†	8.50E-01(2.24E-03)†	6.10E-01(2.71E-04)‡	7.88E-01(1.05E-03)
	200	1.35E+00(2.34E-03)†	5.33E-01(1.08E-04)‡	1.37E+00(1.10E-03)†	9.01E-01(3.63E-04)†	4.52E-01(3.34E-04)‡	6.87E-01(2.49E-03)
WFG5	5	1.08E+00(8.00E-04)†	1.25E+00(2.93E-03)†	1.49E+00(1.13E-03)†	1.96E+00(8.94E-05)†	1.05E+00(7.26E-04)†	9.25E-01(2.26E-03)
	25	1.25E+00(7.85E-04)†	8.37E-01(1.27E-03)†	1.47E+00(1.05E-03)†	1.99E+00(1.60E-05)†	7.48E-01(1.93E-04)‡	8.14E-01(8.65E-04)
	50	1.29E+00(9.84E-04)†	7.34E-01(1.07E-03)‡	1.47E+00(1.37E-03)†	1.99E+00(1.81E-06)†	7.02E-01(4.30E-04)‡	8.09E-01(2.45E-03)
	200	1.33E+00(1.66E-03)†	6.30E-01(1.96E-04)‡	1.44E+00(6.81E-04)†	1.99E+00(1.32E-06)†	6.62E-01(3.57E-04)‡	8.29E-01(5.86E-04)
WFG6	5	1.24E+00(5.61E-03)†	1.26E+00(2.05E-02)†	1.57E+00(3.58E-03)†	1.27E+00(1.78E-04)†	1.16E+00(3.74E-03)†	9.88E-01(2.42E-03)
	25	1.35E+00(1.99E-03)†	6.68E-01(4.42E-04)‡	1.50E+00(3.18E-03)†	1.28E+00(1.56E-03)†	8.60E-01(2.41E-02)‡	9.45E-01(4.85E-03)
	50	1.34E+00(1.91E-03)†	6.36E-01(2.29E-04)‡	1.49E+00(2.26E-03)†	1.28E+00(1.47E-03)†	8.76E-01(4.27E-02)‡	9.85E-01(3.93E-03)
	200	1.31E+00(1.40E-03)†	6.25E-01(1.02E-04)‡	1.46E+00(6.95E-04)†	1.30E+00(2.62E-03)†	8.26E-01(2.29E-02)‡	9.80E-01(3.93E-03)
WFG7	5	1.22E+00(1.02E-03)†	1.09E+00(2.64E-02)†	1.44E+00(8.64E-04)†	1.32E+00(1.10E-02)†	8.60E-01(8.26E-04)†	8.00E-01(6.56E-04)
	25	1.39E+00(1.31E-03)†	5.19E-01(1.03E-03)‡	1.57E+00(4.95E-04)†	1.50E+00(6.96E-03)†	6.22E-01(2.53E-04)‡	7.18E-01(3.24E-04)
	50	1.42E+00(1.23E-03)†	5.73E-01(4.53E-04)‡	1.56E+00(1.07E-03)†	1.71E+00(1.45E-03)†	5.74E-01(3.15E-04)‡	6.74E-01(5.97E-04)
	200	1.39E+00(7.81E-04)†	6.34E-01(1.37E-04)†	1.56E+00(9.72E-04)†	1.20E+00(5.11E-02)†	4.44E-01(1.50E-04)‡	4.97E-01(5.41E-04)
WFG8	5	1.22E+00(1.09E-03)†	1.16E+00(2.53E-02)†	1.44E+00(1.19E-03)†	1.31E+00(9.33E-03)†	8.50E-01(1.31E-03)†	7.90E-01(1.28E-03)
	25	1.38E+00(9.79E-04)†	5.28E-01(9.12E-04)‡	1.56E+00(1.59E-03)†	1.48E+00(7.00E-03)†	6.12E-01(1.81E-04)‡	7.11E-01(8.45E-04)
	50	1.41E+00(1.80E-03)†	5.71E-01(6.60E-04)‡	1.57E+00(1.40E-03)†	1.70E+00(2.27E-03)†	5.71E-01(3.01E-04)‡	6.74E-01(7.57E-04)
	200	1.39E+00(6.16E-04)†	6.32E-01(1.72E-04)†	1.55E+00(1.35E-03)†	1.22E+00(6.85E-02)†	4.43E-01(2.31E-04)‡	4.97E-01(7.13E-04)
WFG9	5	1.70E+00(2.28E-02)	1.59E+00(1.91E-03)‡	1.97E+00(5.24E-04)†	1.37E+00(1.09E-02)‡	1.80E+00(8.91E-04)	1.76E+00(7.35E-03)
	25	1.94E+00(2.23E-02)†	1.59E+00(9.78E-04)‡	2.07E+00(5.97E-04)†	1.61E+00(2.21E-02)‡	1.78E+00(2.49E-03)	1.73E+00(1.08E-02)
	50	2.02E+00(1.48E-02)†	1.58E+00(1.03E-03)‡	2.11E+00(6.55E-04)†	1.60E+00(3.02E-02)‡	1.75E+00(1.67E-03)†	1.72E+00(5.86E-03)
	200	2.09E+00(3.09E-02)†	1.56E+00(4.83E-04)‡	1.93E+00(6.86E-02)†	1.67E+00(3.24E-02)	1.68E+00(4.26E-03)	1.71E+00(3.93E-03)
+-=		45/3/4	40/9/3	48/1/3	20/31/1	33/6/13	—

TABLE 33
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 7 TO 6 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	4.30E+00(9.69E-01)†	1.82E+01(6.50E+00)†	4.11E+01(5.33E+00)†	5.15E+02(1.36E+04)†	2.43E+00(1.10E+00)†	2.37E-02(1.67E-06)
	25	2.29E+01(2.80E+01)†	2.79E+01(2.18E+00)†	5.79E+01(2.47E+01)†	9.92E+02(4.86E+03)†	1.43E+01(1.15E+01)†	4.16E-01(6.28E-01)
	50	1.28E+02(3.90E+03)†	2.86E+01(1.81E+00)†	1.39E+02(2.14E+03)†	1.05E+03(4.92E+03)†	2.51E+01(4.22E+01)†	1.96E-01(1.74E-01)
	200	2.98E+02(6.25E+01)†	2.52E+01(8.55E-01)†	2.74E+02(6.74E+01)†	1.13E+03(3.29E+03)†	3.21E+01(5.34E+01)†	3.46E-01(9.20E-01)
F2	5	1.04E-01(4.96E-06)†	2.02E-01(1.94E-04)†	2.93E-01(5.15E-04)†	2.78E+00(2.86E-01)†	1.25E-01(9.14E-05)†	8.66E-02(6.04E-06)
	25	4.29E-01(3.15E-03)†	2.20E-01(4.20E-05)†	6.75E-01(2.11E-03)†	5.12E+00(8.79E-02)†	1.25E-01(6.41E-05)†	8.21E-02(4.64E-06)
	50	8.08E-01(3.10E-03)†	2.19E-01(3.41E-05)†	8.10E-01(4.85E-04)†	5.21E+00(2.21E-01)†	1.32E-01(8.36E-05)†	8.10E-02(3.82E-06)
	200	9.46E-01(6.44E-04)†	1.96E-01(1.32E-05)†	8.57E-01(2.92E-04)†	5.49E+00(1.85E-01)†	1.57E-01(3.77E-05)†	9.24E-02(4.40E-06)
F3	5	1.44E+01(1.38E+01)†	7.68E+01(1.27E+02)†	1.22E+02(2.42E+01)†	2.98E+02(5.19E+03)†	6.80E+00(5.79E+00)†	4.26E-01(2.05E+00)
	25	5.70E+01(1.47E+02)†	9.22E+01(2.04E+01)†	1.60E+02(1.28E+02)†	6.82E+02(3.63E+03)†	3.90E+01(3.72E+01)†	2.13E+00(2.08E+01)
	50	1.78E+02(7.26E+03)†	8.38E+01(1.18E+01)†	2.22E+02(2.65E+03)†	7.55E+02(3.10E+03)†	5.92E+01(9.01E+01)†	1.10E+00(3.80E+00)
	200	7.00E+02(8.19E+02)†	6.66E+01(1.26E+01)†	6.83E+02(6.11E+02)†	7.95E+02(9.52E+03)†	7.42E+01(2.25E+02)†	5.52E-01(3.92E+00)
F4	5	4.41E-02(7.22E-05)†	2.19E-02(9.55E-05)‡	3.17E-01(7.76E-04)†	4.54E-01(3.55E-03)†	1.39E-01(4.04E-04)†	4.25E-02(1.86E-04)
	25	6.49E-01(5.48E-03)†	1.20E-01(1.44E-03)†	8.80E-01(6.53E-04)†	5.22E-01(1.66E-03)†	1.28E-01(3.38E-04)†	3.98E-02(9.56E-06)
	50	1.08E+00(6.77E-04)†	1.75E-01(1.36E-04)†	9.75E-01(1.05E-04)†	5.55E-01(3.24E-03)†	1.42E-01(7.07E-05)†	3.82E-02(2.23E-05)
	200	1.15E+00(9.02E-05)†	1.88E-01(3.17E-05)†	1.01E+00(8.93E-05)†	5.14E-01(1.69E-03)†	1.62E-01(9.22E-05)†	3.90E-02(2.40E-05)
WFG1	5	3.41E-01(8.99E-04)	3.29E-01(4.53E-04)‡	6.29E-01(1.07E-03)†	2.42E+00(2.43E-02)†	3.51E-01(1.33E-03)†	3.40E-01(4.44E-04)
	25	4.93E-01(7.62E-04)†	4.59E-01(1.22E-04)†	7.63E-01(4.65E-04)†	2.80E+00(5.66E-03)†	3.67E-01(3.80E-04)†	3.40E-01(5.04E-04)
	50	5.48E-01(4.81E-04)†	4.59E-01(8.48E-05)†	7.97E-01(3.93E-04)†	2.82E+00(3.09E-03)†	3.90E-01(3.64E-04)†	3.48E-01(3.94E-04)
	200	6.09E-01(5.92E-04)†	4.46E-01(1.79E-05)†	8.58E-01(2.55E-04)†	2.82E+00(3.85E-03)†	4.12E-01(1.58E-04)†	3.49E-01(4.03E-04)
WFG2	5	8.19E-01(1.17E-03)‡	5.08E-01(3.70E-03)‡	1.13E+00(8.38E-04)†	7.70E-01(2.11E-06)‡	6.59E-01(1.30E-03)‡	1.07E+00(3.71E-03)
	25	1.31E+00(5.00E-03)†	6.17E-01(1.10E-04)‡	1.59E+00(1.28E-02)†	7.72E-01(2.16E-06)‡	6.63E-01(1.05E-03)‡	1.05E+00(3.02E-03)
	50	1.55E+00(9.17E-03)†	6.26E-01(9.18E-05)‡	1.73E+00(7.76E-03)†	7.70E-01(1.05E-05)‡	6.06E-01(9.71E-04)‡	1.02E+00(2.31E-03)
	200	1.79E+00(1.12E-02)†	6.40E-01(1.73E-05)‡	1.90E+00(7.80E-03)†	7.36E-01(1.51E-03)‡	6.27E-01(8.45E-04)‡	1.05E+00(3.29E-03)
WFG3	5	3.84E-02(1.22E-03)‡	2.97E+00(1.84E-02)†	2.31E+00(2.02E-02)†	9.13E-01(3.73E-05)‡	2.13E+00(1.05E-02)†	1.66E+00(2.21E-01)
	25	2.01E+00(4.00E-01)‡	3.21E+00(7.85E-04)†	2.69E+00(1.85E-02)‡	9.21E-01(1.66E-05)‡	2.84E+00(3.60E-02)	2.86E+00(4.42E-02)
	50	2.80E+00(2.63E-02)‡	3.25E+00(8.48E-04)†	2.75E+00(1.45E-02)‡	9.17E-01(3.49E-05)‡	2.99E+00(1.49E-02)	2.95E+00(3.26E-02)
	200	3.04E+00(2.05E-02)†	3.34E+00(6.04E-04)†	2.84E+00(1.50E-02)‡	8.81E-01(6.49E-04)‡	3.08E+00(5.72E-03)†	2.97E+00(8.17E-03)
WFG4	5	7.57E-01(8.40E-04)†	7.90E-01(2.67E-03)†	9.77E-01(5.82E-04)†	8.57E-01(4.39E-03)†	6.54E-01(6.41E-04)†	5.73E-01(5.23E-04)
	25	9.78E-01(1.04E-03)†	6.04E-01(1.42E-04)†	1.09E+00(1.20E-03)†	8.43E-01(4.25E-03)†	4.51E-01(1.64E-04)‡	5.47E-01(3.94E-04)
	50	1.12E+00(1.14E-03)†	5.77E-01(9.61E-05)†	1.15E+00(8.83E-04)†	8.53E-01(2.89E-03)†	4.33E-01(1.40E-04)‡	5.30E-01(3.84E-04)
	200	1.15E+00(1.72E-03)†	5.66E-01(4.66E-05)†	1.15E+00(1.28E-03)†	7.86E-01(9.69E-04)†	4.59E-01(1.01E-04)‡	5.34E-01(3.94E-04)
WFG5	5	7.73E-01(4.75E-04)†	8.54E-01(9.40E-04)†	1.14E+00(5.16E-04)†	1.94E+00(2.76E-04)†	7.13E-01(5.50E-04)†	6.99E-01(2.67E-04)
	25	9.37E-01(2.14E-03)†	7.37E-01(2.42E-04)†	1.19E+00(8.23E-04)†	1.97E+00(9.95E-05)†	5.73E-01(2.67E-04)‡	6.57E-01(2.68E-04)
	50	1.05E+00(1.87E-03)†	6.88E-01(1.68E-04)†	1.21E+00(6.50E-04)†	1.97E+00(5.21E-05)†	5.24E-01(1.64E-04)‡	6.32E-01(4.81E-04)
	200	1.16E+00(9.83E-04)†	6.45E-01(4.62E-05)†	1.19E+00(1.37E-03)†	1.97E+00(1.47E-04)†	4.91E-01(7.24E-05)‡	6.25E-01(2.73E-04)
WFG6	5	8.55E-01(2.96E-03)†	9.28E-01(3.95E-03)†	1.26E+00(2.26E-03)†	1.38E+00(4.29E-04)†	1.55E+00(3.39E-01)†	7.33E-01(1.59E-03)
	25	1.02E+00(1.56E-03)†	7.79E-01(9.03E-05)†	1.30E+00(1.95E-03)†	1.40E+00(1.25E-03)†	1.40E+00(3.08E-01)†	6.93E-01(1.26E-03)
	50	1.15E+00(1.34E-03)†	7.68E-01(3.34E-05)†	1.33E+00(1.60E-03)†	1.42E+00(1.02E-03)†	1.46E+00(2.59E-01)†	6.79E-01(1.22E-03)
	200	1.26E+00(1.26E-03)†	7.64E-01(2.13E-05)†	1.34E+00(1.28E-03)†	1.43E+00(8.50E-04)†	1.48E+00(2.75E-01)†	6.80E-01(1.11E-03)
WFG7	5	9.33E-01(1.45E-03)†	8.28E-01(5.90E-03)†	1.18E+00(7.96E-04)†	1.09E+00(1.54E-02)†	5.78E-01(5.02E-04)†	5.07E-01(5.44E-04)
	25	1.17E+00(1.33E-03)†	5.42E-01(1.44E-04)†	1.31E+00(1.03E-03)†	1.27E+00(2.22E-02)†	5.04E-01(1.45E-04)†	4.82E-01(3.52E-04)
	50	1.20E+00(1.09E-03)†	5.58E-01(9.39E-05)†	1.31E+00(5.38E-04)†	1.33E+00(9.34E-03)†	4.94E-01(1.06E-04)†	4.61E-01(5.19E-04)
	200	1.21E+00(1.10E-03)†	5.86E-01(5.02E-05)†	1.30E+00(6.14E-04)†	5.49E-01(2.78E-02)†	5.15E-01(1.55E-04)†	4.65E-01(5.34E-04)
WFG8	5	9.34E-01(9.79E-04)†	8.79E-01(8.67E-03)†	1.18E+00(5.57E-04)†	1.09E+00(7.11E-03)†	5.77E-01(7.20E-04)†	5.06E-01(5.69E-04)
	25	1.17E+00(1.10E-03)†	5.43E-01(2.27E-04)†	1.30E+00(7.70E-04)†	1.33E+00(2.33E-02)†	5.03E-01(1.32E-04)†	4.82E-01(5.04E-04)
	50	1.20E+00(1.31E-03)†	5.59E-01(1.30E-04)†	1.31E+00(8.25E-04)†	1.33E+00(1.64E-02)†	4.93E-01(1.82E-04)†	4.66E-01(5.25E-04)
	200	1.21E+00(1.20E-03)†	5.81E-01(1.14E-04)†	1.31E+00(7.71E-04)†	5.10E-01(3.00E-02)	5.17E-01(1.31E-04)†	4.61E-01(4.12E-04)
WFG9	5	1.29E+00(1.89E-02)	1.09E+00(2.11E-04)‡	1.54E+00(3.25E-04)†	1.22E+00(6.17E-03)‡	1.55E+00(9.80E-02)†	1.29E+00(4.68E-03)
	25	1.53E+00(2.11E-02)†	1.09E+00(3.75E-04)‡	1.63E+00(1.34E-03)†	1.21E+00(1.44E-02)‡	1.48E+00(7.91E-02)†	1.26E+00(7.22E-03)
	50	1.61E+00(1.98E-02)†	1.09E+00(5.43E-04)‡	1.55E+00(2.59E-03)†	1.17E+00(9.87E-03)‡	1.48E+00(8.74E-02)†	1.26E+00(4.97E-03)
	200	1.65E+00(1.83E-02)†	1.06E+00(1.42E-02)‡	1.46E+00(3.13E-03)†	1.24E+00(1.03E-02)	1.61E+00(8.45E-02)†	1.24E+00(2.49E-03)
+-=		28/22/2	33/15/4	27/20/5	40/8/4	28/8/16	—

TABLE 34
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 6 TO 5 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.35E+01(1.39E+01)†	2.85E+01(4.32E+00)†	5.55E+01(4.99E+00)†	8.01E+02(1.37E+04)†	8.08E+00(3.47E+00)†	1.55E-02(6.15E-07)
	25	6.17E+01(2.93E+02)†	3.09E+01(2.67E+00)†	9.16E+01(2.12E+02)†	1.28E+03(1.22E+04)†	3.23E+01(4.11E+01)†	5.50E-01(1.34E+00)
	50	2.94E+02(4.13E+02)†	3.02E+01(1.74E+00)†	2.86E+02(1.81E+02)†	1.34E+03(1.66E+04)†	3.59E+01(6.30E+01)†	1.61E-01(2.10E-01)
	200	3.41E+02(1.74E+02)†	2.61E+01(2.21E+00)†	3.12E+02(9.97E+01)†	1.39E+03(1.22E+04)†	3.38E+01(3.84E+01)†	1.66E-01(1.13E-01)
F2	5	7.37E-02(3.53E-05)†	2.74E-01(2.16E-04)†	3.83E-01(7.09E-04)†	5.74E+00(5.12E-01)†	1.48E-01(1.10E-04)†	5.46E-02(2.07E-06)
	25	6.74E-01(3.21E-03)†	2.60E-01(6.08E-05)†	7.99E-01(1.47E-03)†	8.14E+00(6.87E-01)†	1.38E-01(1.58E-04)†	5.32E-02(2.40E-06)
	50	9.14E-01(1.74E-03)†	2.42E-01(4.19E-05)†	8.80E-01(1.02E-03)†	7.82E+00(4.14E-01)†	1.44E-01(8.25E-05)†	5.35E-02(1.85E-06)
	200	9.54E-01(3.49E-03)†	1.95E-01(1.23E-05)†	8.82E-01(1.49E-03)†	7.62E+00(6.13E-01)†	1.58E-01(5.60E-05)†	5.39E-02(1.07E-06)
F3	5	3.89E+01(6.54E+01)†	1.02E+02(6.40E+01)†	1.64E+02(4.32E+01)†	7.35E+02(1.10E+04)†	2.63E+01(4.57E+01)†	9.46E-01(5.16E+00)
	25	1.07E+02(1.89E+02)†	9.14E+01(2.32E+01)†	2.19E+02(1.66E+03)†	1.12E+03(6.56E+03)†	8.20E+01(2.28E+02)†	1.76E+00(1.60E+01)
	50	5.52E+02(5.65E+03)†	8.35E+01(2.76E+01)†	6.07E+02(2.38E+03)†	1.03E+03(7.86E+03)†	8.50E+01(1.92E+02)†	1.64E+00(1.12E+01)
	200	7.31E+02(1.06E+03)†	6.51E+01(6.29E+00)†	7.26E+02(1.01E+03)†	1.03E+03(1.22E+04)†	8.09E+01(9.95E+01)†	4.46E-01(1.34E+00)
F4	5	6.54E-02(6.55E-04)†	4.75E-02(8.98E-04)†	4.68E-01(1.42E-03)†	5.00E-01(1.12E-02)†	1.72E-01(7.26E-04)†	2.86E-02(1.10E-04)
	25	1.03E+00(3.76E-03)†	2.15E-01(1.25E-04)†	1.08E+00(6.44E-04)†	4.69E-01(4.95E-03)†	1.44E-01(1.40E-04)†	2.46E-02(6.71E-06)
	50	1.30E+00(3.98E-04)†	2.25E-01(5.71E-05)†	1.13E+00(5.85E-04)†	4.73E-01(2.52E-03)†	1.53E-01(1.53E-04)†	2.43E-02(1.55E-05)
	200	1.32E+00(3.65E-04)†	2.02E-01(2.60E-05)†	1.15E+00(1.73E-04)†	4.26E-01(1.04E-03)†	1.64E-01(8.82E-05)†	2.50E-02(1.60E-05)
WFG1	5	3.02E-01(8.87E-04)†	3.91E-01(5.06E-04)†	5.47E-01(8.10E-04)†	2.39E+00(4.67E-02)†	2.65E-01(5.09E-04)†	2.33E-01(2.95E-04)
	25	4.20E-01(2.73E-04)†	4.50E-01(2.95E-04)†	6.71E-01(4.56E-04)†	2.79E+00(6.75E-03)†	3.06E-01(1.14E-04)†	2.17E-01(2.77E-04)
	50	4.52E-01(5.35E-04)†	4.36E-01(1.55E-04)†	6.94E-01(2.50E-04)†	2.78E+00(6.83E-03)†	3.09E-01(1.25E-04)†	2.30E-01(3.02E-04)
	200	4.64E-01(3.30E-04)†	4.12E-01(2.79E-05)†	7.06E-01(3.88E-04)†	2.73E+00(2.59E-02)†	2.93E-01(1.17E-04)†	2.36E-01(1.85E-04)
WFG2	5	8.06E-01(1.88E-02)	7.91E-01(4.74E-02)	1.05E+00(1.80E-02)†	7.20E-01(9.90E-06)‡	6.56E-01(2.04E-02)‡	7.69E-01(9.75E-04)
	25	1.36E+00(3.50E-02)†	7.60E-01(5.06E-02)	1.46E+00(3.54E-02)†	7.18E-01(7.63E-05)‡	7.35E-01(2.73E-02)	7.49E-01(1.24E-03)
	50	1.50E+00(3.41E-02)†	7.64E-01(5.03E-02)	1.51E+00(3.39E-02)†	7.08E-01(4.00E-04)‡	6.88E-01(2.90E-02)	7.64E-01(8.22E-04)
	200	1.53E+00(4.05E-02)†	7.78E-01(5.03E-02)	1.51E+00(2.67E-02)†	6.99E-01(1.06E-03)‡	7.44E-01(3.33E-02)	7.92E-01(6.45E-04)
WFG3	5	4.07E-01(8.50E-02)‡	2.60E+00(1.53E-02)†	2.04E+00(3.64E-02)†	8.16E-01(2.24E-04)	1.94E+00(4.10E-02)†	8.08E-01(9.67E-02)
	25	1.95E+00(9.64E-02)†	2.77E+00(2.63E-02)†	2.43E+00(4.35E-02)†	8.09E-01(1.45E-04)‡	2.41E+00(2.75E-02)†	1.55E+00(5.76E-02)
	50	2.52E+00(6.70E-02)†	2.79E+00(2.42E-02)†	2.40E+00(3.65E-02)†	8.04E-01(4.38E-04)‡	2.43E+00(3.75E-02)†	1.59E+00(6.82E-02)
	200	2.62E+00(6.00E-02)†	2.82E+00(3.52E-02)†	2.47E+00(4.01E-02)†	7.99E-01(3.78E-04)‡	2.45E+00(3.03E-02)†	1.99E+00(1.97E-02)
WFG4	5	4.77E-01(2.91E-04)†	4.98E-01(1.33E-04)†	6.89E-01(4.56E-04)†	8.92E-01(4.66E-03)†	3.89E-01(1.45E-04)†	3.03E-01(7.50E-05)
	25	6.76E-01(7.36E-04)†	4.24E-01(4.10E-05)†	7.56E-01(8.06E-04)†	8.25E-01(4.65E-03)†	2.87E-01(8.09E-05)	2.92E-01(9.33E-05)
	50	6.79E-01(6.66E-04)†	4.06E-01(2.47E-05)†	7.30E-01(8.26E-04)†	8.71E-01(4.60E-03)†	2.77E-01(4.78E-05)‡	2.86E-01(1.10E-04)
	200	6.32E-01(5.49E-04)†	3.73E-01(1.25E-05)†	6.71E-01(4.20E-04)†	8.50E-01(1.79E-03)†	2.70E-01(7.83E-05)‡	2.84E-01(1.54E-04)
WFG5	5	4.94E-01(5.49E-04)†	4.78E-01(2.38E-04)†	8.35E-01(3.70E-04)†	1.80E+00(1.25E-03)†	4.31E-01(1.11E-04)†	3.80E-01(6.18E-05)
	25	6.44E-01(1.14E-03)†	4.38E-01(3.76E-05)†	7.90E-01(5.33E-04)†	1.84E+00(1.43E-03)†	3.66E-01(1.05E-04)	3.65E-01(3.66E-05)
	50	6.63E-01(2.91E-04)†	4.26E-01(2.56E-05)†	7.48E-01(3.73E-04)†	1.81E+00(2.61E-03)†	3.41E-01(2.97E-05)‡	3.55E-01(6.41E-05)
	200	6.37E-01(7.16E-04)†	3.97E-01(1.07E-05)†	7.26E-01(4.88E-04)†	1.75E+00(1.82E-03)†	3.25E-01(5.90E-05)‡	3.54E-01(2.74E-05)
WFG6	5	1.29E+00(4.65E-01)†	9.02E-01(1.14E-01)†	1.43E+00(1.76E-01)†	1.45E+00(2.58E-04)†	1.06E+00(2.86E-01)†	4.16E-01(1.01E-03)
	25	1.29E+00(2.46E-01)†	8.58E-01(1.31E-01)†	1.29E+00(1.79E-01)†	1.47E+00(4.08E-04)†	9.26E-01(2.64E-01)†	3.92E-01(7.23E-04)
	50	1.27E+00(2.49E-01)†	8.64E-01(1.35E-01)†	1.38E+00(2.28E-01)†	1.48E+00(5.51E-04)†	1.18E+00(2.96E-01)†	3.89E-01(6.32E-04)
	200	1.13E+00(2.54E-01)†	8.70E-01(1.53E-01)†	1.27E+00(2.23E-01)†	1.48E+00(5.19E-04)†	9.41E-01(2.67E-01)†	3.85E-01(6.85E-04)
WFG7	5	6.69E-01(6.37E-04)†	5.32E-01(6.49E-04)†	8.90E-01(6.58E-04)†	1.10E+00(1.15E-02)†	4.17E-01(2.32E-04)†	3.01E-01(2.21E-04)
	25	7.77E-01(5.86E-04)†	4.01E-01(9.29E-05)†	9.34E-01(5.24E-04)†	1.41E+00(2.20E-02)†	3.47E-01(7.30E-05)†	2.81E-01(1.34E-04)
	50	7.65E-01(4.73E-04)†	4.03E-01(8.90E-05)†	9.03E-01(6.96E-04)†	1.46E+00(2.90E-02)†	3.52E-01(8.20E-05)†	2.78E-01(6.59E-05)
	200	7.61E-01(4.22E-04)†	4.16E-01(4.30E-05)†	8.80E-01(5.63E-04)†	6.63E-01(1.70E-02)†	3.47E-01(7.52E-05)†	2.70E-01(1.72E-04)
WFG8	5	6.74E-01(8.23E-04)†	5.49E-01(8.45E-04)†	8.97E-01(5.86E-04)†	1.14E+00(1.36E-02)†	4.16E-01(4.71E-04)†	2.98E-01(3.27E-04)
	25	7.70E-01(9.08E-04)†	3.98E-01(7.22E-05)†	9.29E-01(4.16E-04)†	1.37E+00(1.62E-02)†	3.47E-01(6.80E-05)†	2.82E-01(1.13E-04)
	50	7.74E-01(4.82E-04)†	4.05E-01(1.14E-04)†	8.99E-01(5.76E-04)†	1.47E+00(3.00E-02)†	3.51E-01(7.46E-05)†	2.75E-01(9.18E-05)
	200	7.62E-01(3.74E-04)†	4.16E-01(3.76E-05)†	8.86E-01(4.65E-04)†	7.30E-01(3.18E-02)†	3.48E-01(5.28E-05)†	2.69E-01(1.49E-04)
WFG9	5	1.25E+00(1.71E-01)†	8.84E-01(9.40E-02)	1.43E+00(8.74E-02)†	1.06E+00(3.71E-03)†	1.06E+00(1.01E-01)	9.14E-01(4.39E-03)
	25	1.39E+00(7.79E-02)†	9.16E-01(8.42E-02)	1.39E+00(6.41E-02)†	1.20E+00(8.26E-03)†	1.13E+00(1.39E-01)	8.87E-01(6.56E-03)
	50	1.37E+00(4.98E-02)†	8.98E-01(9.02E-02)	1.13E+00(8.19E-02)†	1.22E+00(7.83E-03)†	1.05E+00(1.29E-01)	8.86E-01(6.52E-03)
	200	1.39E+00(7.03E-02)†	8.39E-01(9.03E-02)‡	1.11E+00(8.94E-02)†	1.22E+00(1.66E-02)†	1.11E+00(1.62E-01)	8.86E-01(6.08E-03)
+-=		28/22/2	33/15/4	27/20/5	40/8/4	28/8/16	—

TABLE 35
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 5 TO 4 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	2.19E+01(2.06E+01)†	3.41E+01(7.83E+00)†	6.89E+01(1.30E+01)†	1.22E+03(2.07E+04)†	1.70E+01(8.57E+01)†	7.63E-03(1.04E-07)
	25	1.44E+02(7.24E+02)†	3.39E+01(3.06E+00)†	1.64E+02(4.86E+02)†	1.64E+03(5.59E+03)†	3.80E+01(4.98E+01)†	2.13E-01(2.45E-01)
	50	2.63E+02(3.73E+02)†	3.30E+01(2.64E+00)†	2.72E+02(2.78E+02)†	1.70E+03(3.91E+03)†	3.52E+01(2.90E+01)†	9.10E-02(9.35E-02)
	200	2.69E+02(1.08E+03)†	2.73E+01(1.30E+00)†	2.68E+02(3.98E+02)†	1.76E+03(2.62E+03)†	3.51E+01(4.90E+01)†	7.26E-02(1.27E-01)
F2	5	8.57E-02(2.08E-04)†	3.07E-01(4.64E-04)†	4.08E-01(9.75E-04)†	1.23E+01(2.03E+00)†	1.46E-01(3.34E-04)†	2.49E-02(4.97E-07)
	25	6.23E-01(3.33E-03)†	2.42E-01(6.64E-05)†	6.56E-01(2.40E-03)†	1.35E+01(3.65E+00)†	9.59E-02(1.51E-04)†	2.50E-02(4.84E-07)
	50	6.77E-01(3.34E-03)†	2.20E-01(4.45E-05)†	6.27E-01(1.71E-03)†	1.36E+01(7.23E+00)†	9.88E-02(1.87E-04)†	2.50E-02(4.25E-07)
	200	6.06E-01(3.78E-03)†	1.71E-01(4.39E-06)†	5.47E-01(1.63E-03)†	1.31E+01(5.24E+00)†	1.01E-01(8.31E-05)†	2.62E-02(3.11E-07)
F3	5	6.38E+01(1.39E+02)†	1.04E+02(5.95E+01)†	2.05E+02(1.58E+02)†	1.73E+03(1.73E+04)†	5.01E+01(9.02E+01)†	9.33E-02(8.18E-02)
	25	2.02E+02(3.31E+03)†	1.02E+02(2.64E+01)†	3.19E+02(3.36E+03)†	2.06E+03(1.53E+04)†	9.72E+01(2.65E+02)†	9.45E-01(2.38E+00)
	50	4.79E+02(1.88E+03)†	9.15E+01(2.23E+01)†	5.66E+02(8.70E+02)†	2.05E+03(1.26E+04)†	9.07E+01(2.13E+02)†	8.76E-01(3.43E+00)
	200	5.30E+02(1.88E+03)†	7.58E+01(8.85E+00)†	5.76E+02(1.84E+03)†	2.29E+03(2.75E+04)†	8.45E+01(9.17E+01)†	2.12E-01(2.43E-01)
F4	5	1.59E-01(3.37E-03)†	1.37E-01(4.11E-03)†	5.71E-01(1.70E-03)†	6.08E-01(3.50E-02)†	1.95E-01(7.98E-04)†	1.57E-02(1.37E-04)
	25	1.10E+00(4.42E-03)†	2.68E-01(1.61E-04)†	1.03E+00(8.58E-04)†	3.96E-01(3.78E-03)†	1.48E-01(3.29E-04)†	1.30E-02(6.93E-06)
	50	1.24E+00(3.49E-03)†	2.72E-01(5.35E-05)†	9.51E-01(1.68E-03)†	3.86E-01(3.51E-03)†	1.56E-01(3.95E-04)†	1.31E-02(6.32E-06)
	200	1.02E+00(2.48E-03)†	2.44E-01(2.79E-05)†	8.61E-01(1.33E-03)†	3.70E-01(1.80E-03)†	1.66E-01(2.83E-04)†	1.29E-02(5.70E-06)
WFG1	5	2.47E-01(4.40E-04)†	4.53E-01(3.85E-04)†	4.69E-01(6.00E-04)†	2.15E+00(5.48E-02)†	1.90E-01(2.96E-04)†	1.28E-01(1.56E-04)
	25	3.07E-01(2.47E-04)†	4.18E-01(2.34E-04)†	5.52E-01(1.24E-04)†	2.66E+00(3.86E-02)†	2.29E-01(7.64E-05)†	1.10E-01(4.57E-04)
	50	3.16E-01(2.05E-04)†	3.78E-01(1.09E-04)†	5.50E-01(9.86E-05)†	2.50E+00(4.24E-02)†	2.27E-01(1.81E-04)†	1.08E-01(6.32E-05)
	200	2.96E-01(8.63E-05)†	3.26E-01(2.96E-05)†	5.27E-01(7.77E-05)†	2.54E+00(4.87E-02)†	1.91E-01(3.39E-05)†	1.10E-01(4.31E-05)
WFG2	5	4.36E-01(3.87E-03)‡	5.34E-01(2.17E-04)	7.20E-01(1.59E-03)†	8.32E-01(3.16E-05)†	3.06E-01(7.78E-04)‡	5.40E-01(1.28E-03)
	25	9.88E-01(3.64E-03)†	4.83E-01(1.92E-05)‡	9.90E-01(4.34E-03)†	8.29E-01(2.82E-04)†	3.40E-01(9.61E-04)‡	5.66E-01(1.21E-03)
	50	9.71E-01(5.83E-03)†	4.82E-01(2.30E-05)‡	1.05E+00(3.00E-03)†	8.26E-01(6.45E-04)†	3.48E-01(1.04E-03)‡	5.38E-01(1.02E-03)
	200	1.01E+00(4.76E-03)†	4.78E-01(1.27E-05)‡	1.07E+00(2.80E-03)†	8.27E-01(4.61E-04)†	3.43E-01(3.64E-04)‡	5.27E-01(9.07E-04)
WFG3	5	8.26E-02(2.68E-03)‡	1.87E+00(1.02E-03)†	1.51E+00(3.91E-03)†	8.37E-01(3.34E-04)†	1.43E+00(4.96E-03)†	3.62E-01(1.95E-02)
	25	1.68E+00(1.81E-02)†	2.00E+00(5.87E-04)†	1.70E+00(3.10E-03)†	8.29E-01(8.56E-04)‡	1.67E+00(2.45E-03)†	1.18E+00(6.31E-02)
	50	1.81E+00(2.91E-03)†	2.03E+00(1.91E-04)†	1.72E+00(2.98E-03)†	8.39E-01(8.69E-04)‡	1.70E+00(2.30E-03)†	1.36E+00(6.83E-03)
	200	1.83E+00(2.31E-03)†	2.05E+00(1.20E-04)†	1.69E+00(1.66E-03)†	8.37E-01(4.55E-04)‡	1.71E+00(2.44E-03)†	1.41E+00(5.54E-03)
WFG4	5	3.21E-01(2.43E-04)†	3.68E-01(4.65E-04)†	5.20E-01(2.67E-04)†	8.92E-01(3.34E-03)†	2.20E-01(7.15E-05)†	1.18E-01(2.26E-05)
	25	3.75E-01(3.42E-04)†	2.99E-01(4.50E-05)†	4.49E-01(1.97E-04)†	8.04E-01(2.21E-03)†	1.56E-01(2.63E-05)†	1.14E-01(2.17E-05)
	50	3.32E-01(1.63E-04)†	2.87E-01(3.22E-05)†	4.07E-01(1.92E-04)†	7.88E-01(2.32E-03)†	1.49E-01(1.66E-05)†	1.07E-01(1.04E-05)
	200	3.01E-01(1.37E-04)†	2.63E-01(2.07E-05)†	3.74E-01(1.36E-04)†	7.88E-01(1.70E-03)†	1.39E-01(2.60E-05)†	1.08E-01(2.17E-05)
WFG5	5	3.27E-01(2.72E-04)†	3.43E-01(1.92E-04)†	6.32E-01(2.92E-04)†	1.22E+00(5.45E-03)†	2.47E-01(6.45E-05)†	1.60E-01(5.34E-06)
	25	3.68E-01(2.00E-04)†	2.76E-01(4.39E-05)†	4.99E-01(3.10E-04)†	1.17E+00(4.73E-03)†	2.02E-01(2.44E-05)†	1.53E-01(6.03E-06)
	50	3.32E-01(2.05E-04)†	2.64E-01(2.69E-05)†	4.63E-01(1.47E-04)†	1.12E+00(5.14E-03)†	1.96E-01(3.50E-05)†	1.52E-01(6.43E-06)
	200	3.14E-01(2.12E-04)†	2.53E-01(9.04E-06)†	4.32E-01(1.69E-04)†	1.03E+00(3.88E-03)†	1.86E-01(3.60E-05)†	1.51E-01(6.28E-06)
WFG6	5	3.67E-01(1.71E-03)†	5.10E-01(9.57E-04)†	7.97E-01(2.15E-03)†	1.44E+00(4.93E-04)†	1.03E+00(2.68E-01)†	2.05E-01(9.99E-04)
	25	5.04E-01(7.60E-04)†	4.08E-01(5.60E-05)†	6.47E-01(6.36E-04)†	1.44E+00(4.75E-04)†	1.10E+00(3.08E-01)†	1.85E-01(6.91E-04)
	50	4.33E-01(5.25E-04)†	3.97E-01(4.98E-05)†	5.83E-01(3.09E-04)†	1.44E+00(5.16E-04)†	9.87E-01(3.21E-01)†	1.84E-01(5.85E-04)
	200	4.02E-01(3.38E-04)†	3.70E-01(3.34E-05)†	5.54E-01(1.91E-04)†	1.45E+00(3.06E-04)†	9.94E-01(3.49E-01)†	1.80E-01(6.30E-04)
WFG7	5	4.54E-01(5.00E-04)†	4.50E-01(1.55E-03)†	6.75E-01(3.56E-04)†	7.25E-01(4.73E-03)†	3.05E-01(1.32E-04)†	1.26E-01(4.94E-05)
	25	4.53E-01(3.79E-04)†	3.51E-01(1.09E-04)†	6.33E-01(2.46E-04)†	6.10E-01(1.11E-02)†	2.17E-01(5.31E-05)†	1.12E-01(1.75E-05)
	50	4.30E-01(2.65E-04)†	3.70E-01(1.94E-04)†	6.02E-01(2.95E-04)†	5.76E-01(1.86E-02)†	2.14E-01(3.04E-05)†	1.10E-01(8.29E-06)
	200	4.14E-01(4.12E-04)†	3.74E-01(1.54E-04)†	5.89E-01(1.54E-04)†	5.03E-01(5.84E-03)†	2.07E-01(3.36E-05)†	1.10E-01(1.39E-05)
WFG8	5	4.53E-01(5.61E-04)†	4.71E-01(2.07E-03)†	6.78E-01(5.88E-04)†	7.16E-01(6.62E-03)†	3.04E-01(3.27E-04)†	1.25E-01(5.18E-05)
	25	4.45E-01(5.26E-04)†	3.46E-01(1.52E-04)†	6.36E-01(4.69E-04)†	5.50E-01(8.45E-03)†	2.16E-01(4.50E-05)†	1.12E-01(1.72E-05)
	50	4.30E-01(3.20E-04)†	3.72E-01(1.36E-04)†	5.98E-01(1.51E-04)†	5.25E-01(2.39E-02)†	2.15E-01(3.70E-05)†	1.10E-01(2.09E-05)
	200	4.18E-01(2.50E-04)†	3.73E-01(2.17E-04)†	5.87E-01(1.84E-04)†	5.10E-01(3.73E-03)†	2.08E-01(2.79E-05)†	1.08E-01(1.80E-05)
WFG9	5	7.61E-01(1.53E-02)	5.79E-01(5.60E-04)‡	1.02E+00(3.80E-04)†	7.44E-01(2.69E-03)	1.11E+00(1.57E-01)†	7.50E-01(4.83E-03)
	25	9.58E-01(1.15E-02)†	6.49E-01(2.61E-04)‡	8.34E-01(3.10E-02)	6.55E-01(6.79E-03)‡	9.55E-01(1.51E-01)	7.24E-01(4.61E-03)
	50	9.69E-01(9.25E-03)†	6.55E-01(1.79E-03)‡	6.02E-01(4.37E-04)‡	5.94E-01(5.33E-03)‡	9.98E-01(1.63E-01)†	7.20E-01(4.75E-03)
	200	8.42E-01(4.79E-02)†	6.12E-01(1.50E-02)‡	5.86E-01(4.83E-03)‡	5.07E-01(5.55E-03)‡	1.03E+00(1.84E-01)	7.17E-01(4.75E-03)
+-=		28/22/2	33/15/4	27/20/5	40/8/4	28/8/16	—

TABLE 36
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 4 TO 3 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	3.55E+01(2.29E+01)†	4.38E+01(1.57E+01)†	9.00E+01(3.63E+01)†	3.04E+02(6.33E+03)†	2.89E+01(4.04E+01)†	1.75E-03(4.26E-09)
	25	1.03E+02(2.58E+02)†	3.74E+01(2.36E+00)†	1.48E+02(2.24E+02)†	1.78E+02(3.44E+03)†	4.44E+01(1.07E+02)†	3.17E-02(9.95E-03)
	50	1.05E+02(1.47E+02)†	3.50E+01(1.75E+00)†	1.50E+02(1.54E+02)†	2.14E+02(1.06E+04)†	3.98E+01(2.74E+01)†	1.17E-02(2.43E-03)
	200	3.56E+01(6.14E+01)†	2.96E+01(8.36E-01)†	9.78E+01(9.87E+01)†	1.32E+02(3.42E+03)†	4.06E+01(9.83E+01)†	7.99E-02(1.02E-01)
F2	5	1.24E-01(2.01E-04)†	3.45E-01(4.32E-04)†	3.66E-01(6.60E-04)†	4.29E+00(4.51E+00)†	1.01E-01(4.22E-04)†	5.56E-03(1.23E-07)
	25	2.80E-01(1.15E-03)†	2.32E-01(3.72E-05)†	3.27E-01(8.29E-04)†	4.23E+00(3.28E+00)†	5.37E-02(1.01E-04)†	5.35E-03(5.41E-08)
	50	2.03E-01(5.66E-04)†	2.00E-01(1.80E-05)†	2.62E-01(1.69E-04)†	1.62E+00(7.36E-01)†	5.09E-02(1.27E-04)†	5.17E-03(5.78E-08)
	200	1.37E-01(2.48E-04)†	1.56E-01(3.04E-06)†	2.27E-01(1.43E-04)†	6.34E-01(8.00E+00)†	5.18E-02(6.91E-05)†	4.94E-03(2.16E-08)
F3	5	8.43E+01(1.84E+02)†	1.15E+02(8.34E+01)†	2.40E+02(1.73E+02)†	1.03E+03(5.63E+04)†	7.21E+01(1.52E+02)†	5.28E-03(3.11E-07)
	25	1.93E+02(5.77E+02)†	9.90E+01(5.00E+01)†	3.31E+02(8.32E+02)†	1.34E+03(6.88E+04)†	1.09E+02(4.81E+02)†	1.86E-01(4.68E-01)
	50	1.97E+02(4.81E+02)†	8.53E+01(2.17E+01)†	3.43E+02(6.05E+02)†	1.38E+03(8.60E+04)†	9.57E+01(1.28E+02)†	2.35E-02(1.00E-02)
	200	7.64E+01(1.07E+02)†	7.04E+01(7.23E+00)†	2.39E+02(9.98E+01)†	8.40E+02(9.53E+04)†	9.25E+01(1.29E+02)†	3.52E-01(3.72E+00)
F4	5	2.70E-01(6.02E-04)†	2.46E-01(1.97E-03)†	5.72E-01(1.59E-03)†	7.84E-01(1.39E-01)†	1.71E-01(8.26E-04)†	1.84E-02(3.11E-03)
	25	6.19E-01(7.93E-03)†	3.04E-01(1.52E-04)†	5.15E-01(1.96E-03)†	3.60E-01(7.40E-03)†	1.41E-01(1.01E-03)†	3.07E-03(1.67E-07)
	50	4.89E-01(4.01E-03)†	2.80E-01(5.86E-05)†	3.85E-01(2.97E-04)†	3.05E-01(8.76E-03)†	1.31E-01(7.72E-04)†	3.10E-03(3.15E-07)
	200	2.68E-01(5.99E-05)†	2.39E-01(1.18E-05)†	3.42E-01(3.85E-05)†	2.10E-01(1.27E-03)†	1.43E-01(5.31E-04)†	2.96E-03(3.85E-08)
WFG1	5	1.95E-01(1.73E-04)†	4.73E-01(3.33E-04)†	4.06E-01(3.73E-04)†	4.86E-01(4.80E-04)†	1.61E-01(1.80E-04)†	4.56E-02(3.82E-05)
	25	2.01E-01(2.00E-04)†	3.78E-01(3.84E-04)†	4.42E-01(9.36E-05)†	4.62E-01(5.69E-04)†	1.97E-01(4.28E-04)†	2.86E-02(3.07E-05)
	50	1.88E-01(1.08E-04)†	3.12E-01(1.45E-04)†	4.15E-01(1.07E-04)†	4.44E-01(4.21E-04)†	1.67E-01(1.58E-04)†	2.84E-02(3.69E-06)
	200	1.43E-01(2.61E-05)†	2.17E-01(3.93E-05)†	3.70E-01(1.97E-05)†	4.47E-01(4.66E-04)†	1.08E-01(4.94E-06)†	2.81E-02(7.76E-06)
WFG2	5	5.00E-01(1.13E-02)†	5.19E-01(9.56E-03)†	6.67E-01(7.50E-03)†	6.37E-01(1.21E-03)†	2.88E-01(1.49E-02)	3.29E-01(6.12E-04)
	25	6.48E-01(1.94E-02)†	4.24E-01(1.41E-02)†	6.89E-01(1.16E-02)†	6.31E-01(1.06E-03)†	2.60E-01(1.54E-02)	3.29E-01(4.09E-04)
	50	6.13E-01(2.13E-02)†	4.15E-01(1.47E-02)†	7.05E-01(1.35E-02)†	6.14E-01(1.05E-03)†	2.95E-01(1.87E-02)	3.24E-01(1.02E-03)
	200	5.63E-01(1.61E-02)†	4.07E-01(1.56E-02)	7.42E-01(1.52E-02)†	5.92E-01(1.05E-03)†	2.56E-01(1.74E-02)	3.22E-01(5.81E-04)
WFG3	5	3.54E-01(2.42E-02)†	1.47E+00(4.28E-03)†	1.29E+00(1.14E-02)†	3.98E-01(3.80E-03)†	1.05E+00(1.62E-02)†	3.13E-02(1.67E-04)
	25	1.28E+00(1.93E-02)†	1.52E+00(8.29E-03)†	1.30E+00(1.13E-02)†	3.81E-01(4.37E-03)‡	1.21E+00(1.39E-02)†	4.12E-01(3.78E-03)
	50	1.29E+00(1.49E-02)†	1.54E+00(6.57E-03)†	1.29E+00(1.36E-02)†	3.74E-01(5.13E-03)‡	1.23E+00(1.52E-02)†	4.90E-01(3.88E-03)
	200	1.34E+00(1.30E-02)†	1.52E+00(1.01E-02)†	1.30E+00(1.39E-02)†	3.37E-01(2.35E-03)‡	1.27E+00(1.13E-02)†	6.45E-01(1.42E-03)
WFG4	5	2.50E-01(9.31E-05)†	3.68E-01(5.37E-04)†	3.97E-01(2.11E-04)†	8.20E-01(1.88E-03)†	1.25E-01(1.38E-04)†	2.71E-02(3.89E-06)
	25	1.99E-01(6.53E-05)†	2.71E-01(3.67E-05)†	2.96E-01(5.70E-05)†	7.30E-01(1.71E-03)†	6.26E-02(1.14E-05)†	2.42E-02(3.25E-06)
	50	1.87E-01(3.60E-05)†	2.44E-01(3.43E-05)†	2.76E-01(5.95E-05)†	6.82E-01(1.71E-03)†	5.62E-02(1.78E-05)†	2.18E-02(1.42E-06)
	200	1.82E-01(3.56E-05)†	1.96E-01(1.18E-05)†	2.62E-01(6.54E-05)†	6.74E-01(4.23E-03)†	4.56E-02(7.89E-06)†	1.95E-02(6.84E-07)
WFG5	5	2.68E-01(1.48E-04)†	3.31E-01(2.72E-04)†	4.71E-01(3.36E-04)†	5.50E-01(8.13E-03)†	1.65E-01(1.02E-04)†	7.53E-02(1.43E-06)
	25	2.10E-01(3.38E-05)†	2.31E-01(6.77E-05)†	3.53E-01(7.02E-05)†	4.87E-01(5.16E-03)†	1.14E-01(2.30E-05)†	7.34E-02(6.49E-07)
	50	1.97E-01(3.15E-05)†	2.10E-01(1.13E-05)†	3.28E-01(4.01E-05)†	4.24E-01(8.20E-03)†	1.11E-01(2.64E-05)†	7.21E-02(9.93E-07)
	200	1.88E-01(2.78E-05)†	1.82E-01(3.39E-06)†	3.13E-01(4.15E-05)†	4.18E-01(6.51E-04)†	1.03E-01(3.51E-05)†	7.17E-02(4.90E-06)
WFG6	5	1.15E+00(1.99E-01)†	9.62E-01(9.81E-02)†	1.16E+00(1.41E-01)†	9.47E-01(2.55E-02)†	8.49E-01(2.57E-01)†	1.21E-01(9.81E-04)
	25	8.80E-01(2.45E-01)†	9.23E-01(1.62E-01)†	1.03E+00(2.03E-01)†	8.91E-01(3.24E-03)†	7.48E-01(3.31E-01)†	1.09E-01(1.32E-03)
	50	9.21E-01(2.86E-01)†	8.86E-01(1.75E-01)†	1.03E+00(2.26E-01)†	8.83E-01(3.39E-03)†	8.36E-01(3.07E-01)†	1.03E-01(6.64E-04)
	200	7.23E-01(2.61E-01)†	8.77E-01(2.00E-01)†	9.93E-01(2.20E-01)†	8.90E-01(1.16E-03)†	6.85E-01(3.31E-01)†	9.84E-02(8.16E-04)
WFG7	5	2.97E-01(2.43E-04)†	5.32E-01(2.67E-03)†	5.29E-01(3.23E-04)†	4.96E-01(4.51E-03)†	2.38E-01(1.99E-04)†	2.75E-02(6.79E-06)
	25	2.35E-01(1.26E-04)†	4.67E-01(2.64E-04)†	4.43E-01(1.43E-04)†	2.94E-01(3.42E-03)†	1.43E-01(5.20E-05)†	2.10E-02(3.71E-07)
	50	2.20E-01(8.92E-05)†	4.41E-01(3.33E-04)†	4.14E-01(6.57E-05)†	2.72E-01(1.65E-03)†	1.38E-01(3.30E-05)†	2.03E-02(2.44E-07)
	200	2.00E-01(6.52E-05)†	3.12E-01(4.83E-04)†	3.95E-01(7.99E-05)†	3.20E-01(1.98E-03)†	1.32E-01(3.36E-05)†	2.03E-02(2.55E-07)
WFG8	5	2.96E-01(4.39E-04)†	5.64E-01(2.20E-03)†	5.29E-01(3.54E-04)†	4.88E-01(6.82E-03)†	2.36E-01(2.52E-04)†	2.97E-02(1.79E-05)
	25	2.33E-01(1.28E-04)†	4.58E-01(7.79E-04)†	4.38E-01(1.19E-04)†	2.99E-01(2.38E-03)†	1.44E-01(6.23E-05)†	2.07E-02(6.69E-07)
	50	2.16E-01(7.05E-05)†	4.41E-01(2.22E-04)†	4.10E-01(9.07E-05)†	2.57E-01(9.30E-04)†	1.38E-01(3.33E-05)†	2.03E-02(5.42E-07)
	200	2.04E-01(8.99E-05)†	3.13E-01(3.43E-04)†	3.97E-01(7.10E-05)†	3.09E-01(1.15E-03)†	1.32E-01(3.27E-05)†	2.01E-02(3.92E-07)
WFG9	5	1.20E+00(1.36E-01)†	8.76E-01(1.17E-01)	9.56E-01(8.40E-02)†	6.08E-01(4.80E-03)‡	9.61E-01(1.35E-01)†	6.49E-01(2.89E-03)
	25	9.90E-01(1.42E-01)†	9.16E-01(1.17E-01)†	6.81E-01(1.14E-01)	3.73E-01(8.90E-03)‡	9.11E-01(1.59E-01)†	6.17E-01(3.69E-03)
	50	9.52E-01(1.37E-01)†	8.74E-01(1.17E-01)†	4.67E-01(5.53E-02)‡	3.93E-01(1.09E-02)‡	8.46E-01(1.64E-01)†	6.22E-01(2.86E-03)
	200	7.93E-01(1.88E-01)†	7.32E-01(1.42E-01)	4.41E-01(4.13E-02)‡	2.63E-01(3.57E-03)‡	8.35E-01(1.53E-01)	6.20E-01(3.86E-03)
+-=		28/22/2	33/15/4	27/20/5	40/8/4	28/8/16	—

TABLE 37
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 3 TO 2 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	5.86E+01(1.07E+02)†	5.78E+01(3.16E+01)†	1.25E+02(2.73E+02)†	3.69E+02(4.67E+03)†	4.36E+01(6.62E+01)†	6.69E-05(6.33E-09)
	25	6.03E+01(9.21E+01)†	4.08E+01(4.24E+00)†	1.49E+02(7.91E+01)†	1.22E+02(9.74E+02)†	4.75E+01(4.93E+01)†	9.10E-05(9.17E-09)
	50	3.99E+01(3.30E+01)†	3.97E+01(1.04E+00)†	1.20E+02(8.11E+01)†	8.49E+01(1.98E+02)†	4.69E+01(6.50E+01)†	5.41E-05(2.33E-09)
	200	4.50E+01(7.61E+00)†	3.94E+01(7.17E-02)†	1.15E+02(1.03E+01)†	4.39E+01(5.21E+02)†	4.56E+01(7.71E+01)†	9.89E-05(1.06E-08)
F2	5	1.24E-01(6.04E-05)†	2.84E-01(2.55E-04)†	3.34E-01(6.16E-04)†	5.90E-01(3.76E-01)†	3.51E-02(4.88E-05)†	6.32E-05(1.18E-09)
	25	1.03E-01(4.24E-05)†	1.57E-01(9.84E-06)†	2.32E-01(5.02E-05)†	9.23E-02(1.03E-03)†	1.33E-02(5.00E-06)†	6.30E-05(8.68E-10)
	50	9.37E-02(1.13E-05)†	1.38E-01(4.46E-06)†	2.25E-01(5.23E-05)†	4.55E-02(4.86E-04)†	1.06E-02(4.94E-06)†	6.40E-05(7.72E-10)
	200	9.27E-02(1.52E-05)†	1.17E-01(9.33E-08)†	2.23E-01(5.19E-05)†	2.69E-02(8.33E-04)†	9.53E-03(1.93E-05)†	7.17E-05(2.82E-09)
F3	5	1.08E+02(2.18E+02)†	1.33E+02(1.50E+02)†	2.94E+02(7.03E+02)†	6.55E+02(3.46E+04)†	8.97E+01(2.67E+02)†	1.75E-04(1.23E-08)
	25	1.19E+02(2.63E+02)†	9.95E+01(1.98E+01)†	3.41E+02(4.84E+02)†	3.12E+02(4.66E+03)†	1.04E+02(2.67E+02)†	1.06E-04(2.95E-09)
	50	8.66E+01(1.84E+02)†	9.82E+01(6.28E+00)†	2.76E+02(2.10E+02)†	2.06E+02(2.91E+03)†	1.03E+02(3.94E+02)†	1.55E-04(1.17E-08)
	200	1.06E+02(3.74E+01)†	9.76E+01(9.44E-01)†	2.79E+02(1.11E+02)†	8.03E+01(3.10E+03)†	9.67E+01(1.49E+02)†	1.72E-04(7.59E-09)
F4	5	3.00E-01(5.16E-04)†	3.45E-01(7.85E-04)†	5.67E-01(1.09E-03)†	1.99E-01(9.07E-03)†	7.86E-02(2.01E-03)†	1.07E-02(1.39E-03)
	25	2.85E-01(2.70E-04)†	2.83E-01(2.44E-05)†	3.57E-01(3.94E-05)†	6.30E-02(5.27E-04)†	1.00E-01(9.90E-04)†	1.27E-04(3.74E-08)
	50	2.51E-01(2.82E-06)†	2.60E-01(1.33E-05)†	3.47E-01(3.71E-05)†	5.62E-02(3.97E-04)†	1.01E-01(1.04E-03)†	1.33E-04(1.86E-08)
	200	2.45E-01(5.85E-07)†	2.34E-01(2.36E-06)†	3.48E-01(2.91E-05)†	6.46E-02(9.54E-04)†	1.12E-01(4.79E-04)†	1.11E-04(3.34E-09)
WFG1	5	1.55E-01(1.43E-04)†	5.78E-01(5.87E-04)†	3.58E-01(2.52E-04)†	1.28E+00(4.03E-05)†	1.47E-01(1.31E-04)†	7.59E-03(4.61E-06)
	25	1.47E-01(1.30E-04)†	3.69E-01(3.47E-04)†	3.68E-01(8.28E-05)†	1.28E+00(9.67E-06)†	1.77E-01(2.51E-04)†	7.43E-03(4.15E-06)
	50	1.16E-01(3.33E-05)†	2.74E-01(2.37E-04)†	3.29E-01(1.15E-04)†	1.28E+00(7.98E-06)†	1.33E-01(4.95E-05)†	7.64E-03(4.17E-06)
	200	6.45E-02(2.73E-06)†	1.50E-01(6.92E-05)†	2.78E-01(5.21E-06)†	1.28E+00(7.39E-06)†	8.87E-02(1.34E-05)†	7.87E-03(4.21E-06)
WFG2	5	2.34E-01(1.95E-04)‡	3.44E-01(5.15E-04)†	4.00E-01(4.16E-04)†	5.24E-01(7.94E-05)†	1.18E-01(4.25E-04)‡	2.58E-01(3.51E-04)
	25	2.18E-01(1.37E-04)‡	2.19E-01(1.65E-05)‡	3.63E-01(2.54E-04)†	5.02E-01(1.23E-05)†	7.18E-02(1.53E-04)‡	2.48E-01(6.00E-04)
	50	2.18E-01(4.54E-05)‡	2.04E-01(8.50E-06)‡	3.66E-01(1.34E-04)†	4.99E-01(6.69E-06)†	6.76E-02(1.17E-04)‡	2.47E-01(4.44E-04)
	200	2.21E-01(9.30E-05)‡	1.85E-01(1.90E-06)‡	3.68E-01(2.36E-04)†	4.99E-01(1.25E-06)†	6.63E-02(1.42E-04)‡	2.55E-01(4.10E-04)
WFG3	5	8.28E-02(4.74E-03)†	7.99E-01(1.01E-03)†	8.32E-01(4.61E-04)†	6.29E-01(3.39E-05)†	1.76E-01(1.13E-02)†	1.20E-04(8.39E-11)
	25	6.41E-01(6.85E-04)†	7.63E-01(6.40E-05)†	6.91E-01(1.29E-04)†	6.15E-01(1.59E-06)†	2.73E-01(1.50E-02)†	1.22E-04(2.35E-10)
	50	6.48E-01(9.75E-05)†	7.61E-01(1.10E-04)†	6.73E-01(2.36E-04)†	6.13E-01(8.87E-07)†	2.93E-01(1.74E-02)†	1.20E-04(6.34E-11)
	200	6.45E-01(1.56E-04)†	7.61E-01(6.57E-05)†	6.75E-01(2.50E-04)†	6.10E-01(5.69E-08)†	3.05E-01(1.82E-02)†	1.21E-04(1.73E-10)
WFG4	5	1.54E-01(2.90E-05)†	3.56E-01(3.06E-04)†	2.74E-01(9.39E-05)†	6.78E-01(5.22E-04)†	6.70E-02(1.22E-04)†	2.12E-04(8.54E-08)
	25	1.17E-01(1.77E-05)†	2.38E-01(4.41E-05)†	2.06E-01(2.68E-05)†	6.85E-01(4.37E-04)†	2.42E-02(4.07E-06)†	1.29E-04(1.12E-10)
	50	1.11E-01(2.15E-05)†	2.10E-01(4.05E-05)†	1.95E-01(1.99E-05)†	6.67E-01(2.70E-04)†	2.08E-02(2.95E-06)†	1.46E-04(1.30E-08)
	200	1.05E-01(9.05E-06)†	1.68E-01(1.10E-05)†	1.83E-01(1.37E-05)†	6.08E-01(2.58E-04)†	1.90E-02(2.66E-06)†	2.11E-04(2.90E-08)
WFG5	5	1.79E-01(3.17E-05)†	3.04E-01(3.88E-04)†	3.34E-01(1.93E-04)†	6.39E-02(2.54E-04)	1.05E-01(5.69E-05)†	6.14E-02(1.89E-07)
	25	1.41E-01(6.25E-06)†	1.95E-01(4.07E-05)†	2.62E-01(4.67E-05)†	5.10E-02(3.19E-05)‡	8.34E-02(2.19E-05)†	6.14E-02(6.99E-07)
	50	1.36E-01(3.47E-06)†	1.72E-01(2.43E-05)†	2.49E-01(1.99E-05)†	4.10E-02(4.46E-05)‡	8.26E-02(1.41E-05)†	6.12E-02(2.90E-07)
	200	1.33E-01(2.75E-06)†	1.47E-01(4.68E-06)†	2.41E-01(1.63E-05)†	3.68E-02(3.74E-05)‡	8.54E-02(2.51E-05)†	6.20E-02(1.69E-05)
WFG6	5	2.69E-01(9.10E-04)†	5.74E-01(8.47E-04)†	4.70E-01(1.21E-03)†	5.49E-01(1.08E-03)†	4.36E-01(1.08E-01)†	8.11E-02(6.83E-04)
	25	1.91E-01(9.34E-05)†	3.35E-01(1.08E-04)†	3.23E-01(6.12E-05)†	5.77E-01(8.44E-04)†	6.30E-01(2.62E-01)†	1.19E-01(2.58E-02)
	50	1.65E-01(2.61E-05)†	2.83E-01(6.68E-05)†	3.03E-01(6.27E-05)†	5.68E-01(7.14E-04)†	5.87E-01(2.84E-01)†	7.86E-02(4.58E-04)
	200	1.49E-01(1.50E-05)†	2.16E-01(1.57E-05)†	2.90E-01(2.74E-05)†	5.70E-01(2.50E-04)†	4.30E-01(2.77E-01)	7.55E-02(5.53E-04)
WFG7	5	1.70E-01(1.54E-04)†	6.67E-01(1.08E-03)†	4.00E-01(1.65E-04)†	3.35E-01(5.00E-03)†	1.49E-01(1.26E-04)†	1.40E-04(2.10E-11)
	25	1.09E-01(3.37E-05)†	4.65E-01(4.12E-04)†	3.10E-01(4.50E-05)†	1.86E-01(3.35E-04)†	8.20E-02(2.09E-05)†	1.40E-04(2.34E-11)
	50	9.60E-02(9.34E-06)†	3.64E-01(4.13E-04)†	2.91E-01(2.86E-05)†	1.69E-01(2.26E-04)†	7.62E-02(1.57E-05)†	1.42E-04(4.47E-11)
	200	8.40E-02(1.01E-05)†	2.05E-01(1.01E-04)†	2.79E-01(2.22E-05)†	1.39E-01(8.88E-05)†	7.45E-02(2.21E-05)†	1.41E-04(2.39E-11)
WFG8	5	1.73E-01(2.00E-04)†	6.77E-01(5.74E-04)†	4.01E-01(1.23E-04)†	3.60E-01(3.60E-03)†	1.46E-01(2.99E-04)†	1.38E-04(2.91E-11)
	25	1.10E-01(2.20E-05)†	4.57E-01(5.53E-04)†	3.09E-01(3.15E-05)†	1.92E-01(5.81E-04)†	8.37E-02(2.66E-05)†	1.39E-04(2.58E-11)
	50	9.57E-02(9.67E-06)†	3.62E-01(6.04E-04)†	2.91E-01(3.01E-05)†	1.65E-01(2.51E-04)†	7.65E-02(1.86E-05)†	1.38E-04(2.14E-11)
	200	8.42E-02(6.50E-06)†	2.05E-01(1.24E-04)†	2.80E-01(3.08E-05)†	1.39E-01(4.97E-05)†	7.53E-02(2.41E-05)†	1.40E-04(2.96E-11)
WFG9	5	5.63E-01(4.25E-03)†	5.80E-01(5.91E-04)†	6.81E-01(1.56E-04)†	5.57E-01(5.14E-03)	6.40E-01(5.27E-02)	5.30E-01(2.93E-03)
	25	6.14E-01(3.95E-04)†	5.53E-01(1.81E-05)	3.85E-01(3.10E-02)‡	1.16E-01(1.25E-02)‡	7.36E-01(1.19E-01)†	5.23E-01(7.92E-03)
	50	5.82E-01(7.33E-03)†	5.36E-01(1.22E-03)	2.55E-01(4.46E-05)‡	1.28E-01(2.16E-02)‡	7.17E-01(1.19E-01)	5.14E-01(2.96E-03)
	200	4.39E-01(3.75E-02)	4.35E-01(2.48E-02)	2.58E-01(4.00E-03)‡	1.00E-01(9.36E-03)‡	6.79E-01(1.17E-01)	5.10E-01(3.36E-03)
+-=		28/22/2	33/15/4	27/20/5	40/8/4	28/8/16	—

TABLE 38
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 2 TO 3 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	7.07E-01(6.97E-10)†	7.07E-01(3.18E-31)†	9.98E-01(3.26E-06)†	8.03E-01(8.20E-03)†	7.07E-01(1.04E-08)†	1.00E+00(3.67E-10)
	25	7.07E-01(1.06E-09)†	7.07E-01(3.18E-31)†	9.97E-01(2.75E-06)†	7.85E-01(8.24E-03)†	7.07E-01(5.94E-09)†	9.99E-01(1.24E-06)
	50	7.07E-01(2.10E-10)†	7.07E-01(3.18E-31)†	9.97E-01(3.26E-06)†	8.02E-01(7.07E-03)†	7.07E-01(2.47E-09)†	1.00E+00(5.85E-10)
	200	7.07E-01(2.55E-10)†	7.07E-01(3.18E-31)†	9.98E-01(1.91E-06)†	7.70E-01(8.25E-03)†	7.07E-01(5.04E-09)†	1.00E+00(4.82E-10)
F2	5	8.19E-01(6.88E-06)†	8.17E-01(7.78E-08)†	9.95E-01(1.29E-05)†	8.15E-01(2.57E-06)†	8.19E-01(1.72E-05)†	1.00E+00(6.81E-07)
	25	8.18E-01(3.88E-06)†	8.17E-01(9.27E-09)†	9.94E-01(1.29E-05)†	8.14E-01(2.99E-06)†	8.17E-01(3.62E-06)†	9.99E-01(4.89E-07)
	50	8.19E-01(5.54E-06)†	8.17E-01(1.44E-07)†	9.95E-01(1.09E-05)†	8.14E-01(6.18E-06)†	8.17E-01(6.01E-06)†	9.99E-01(2.39E-06)
	200	8.19E-01(5.07E-06)†	8.17E-01(1.31E-08)†	9.95E-01(8.64E-06)†	8.14E-01(2.28E-06)†	8.18E-01(7.03E-06)†	9.99E-01(1.51E-06)
F3	5	8.17E-01(5.65E-10)†	8.16E-01(3.69E-11)†	9.92E-01(1.89E-05)†	6.50E-01(1.98E-02)†	8.18E-01(8.35E-06)†	1.00E+00(5.76E-11)
	25	8.17E-01(9.36E-10)†	8.16E-01(5.33E-12)†	9.93E-01(1.37E-05)†	6.40E-01(2.17E-02)†	8.18E-01(3.79E-06)†	1.00E+00(1.45E-06)
	50	8.17E-01(7.99E-10)†	8.16E-01(1.95E-12)†	9.94E-01(1.58E-05)†	7.01E-01(1.66E-02)†	8.19E-01(1.36E-05)†	1.00E+00(8.90E-11)
	200	8.17E-01(4.30E-10)†	8.16E-01(5.13E-12)†	9.93E-01(2.65E-05)†	6.44E-01(2.37E-02)†	8.19E-01(4.85E-06)†	1.00E+00(1.80E-07)
F4	5	8.16E-01(4.59E-31)‡	8.16E-01(4.59E-31)‡	9.23E-01(6.22E-03)‡	7.74E-01(4.26E-04)†	7.90E-01(2.15E-02)†	8.16E-01(3.37E-10)
	25	8.16E-01(4.59E-31)‡	8.16E-01(4.59E-31)‡	9.37E-01(5.62E-03)‡	7.77E-01(5.18E-04)†	8.16E-01(1.18E-10)	8.16E-01(3.29E-07)
	50	8.16E-01(4.59E-31)‡	8.16E-01(4.59E-31)‡	9.21E-01(6.34E-03)‡	7.77E-01(4.73E-04)†	8.16E-01(2.07E-10)†	8.16E-01(3.12E-10)
	200	8.16E-01(4.59E-31)‡	8.16E-01(4.59E-31)‡	9.34E-01(6.24E-03)‡	7.79E-01(2.50E-04)†	8.16E-01(2.38E-10)†	8.16E-01(3.88E-10)
WFG1	5	7.07E-01(2.66E-07)†	6.11E-01(2.93E-06)†	8.69E-01(2.89E-04)†	4.61E-01(5.53E-05)†	7.06E-01(9.82E-06)†	9.96E-01(2.94E-05)
	25	7.08E-01(9.28E-08)†	6.11E-01(3.50E-06)†	8.76E-01(8.00E-04)†	4.62E-01(7.53E-05)†	7.06E-01(7.85E-06)†	9.96E-01(2.78E-05)
	50	7.08E-01(9.49E-08)†	6.11E-01(2.70E-06)†	8.74E-01(4.46E-04)†	4.61E-01(6.20E-05)†	7.05E-01(1.56E-05)†	9.97E-01(1.02E-05)
	200	7.08E-01(1.33E-07)†	6.11E-01(2.88E-06)†	8.74E-01(4.03E-04)†	4.61E-01(7.41E-05)†	7.07E-01(6.66E-06)†	9.96E-01(2.91E-05)
WFG2	5	6.45E-01(4.74E-09)†	5.78E-01(1.34E-04)†	9.65E-01(1.04E-03)†	1.89E-01(1.35E-07)†	6.41E-01(6.93E-07)‡	9.97E-01(2.34E-08)
	25	6.45E-01(1.95E-08)†	5.77E-01(8.85E-05)†	9.63E-01(1.50E-03)†	1.89E-01(1.39E-07)†	6.41E-01(4.72E-07)‡	9.97E-01(6.46E-06)
	50	6.45E-01(1.56E-08)†	5.79E-01(7.76E-05)†	9.67E-01(7.46E-04)†	1.89E-01(1.32E-07)†	6.41E-01(1.35E-07)‡	9.97E-01(3.03E-07)
	200	6.40E-01(1.16E-04)†	5.81E-01(1.19E-04)†	9.50E-01(1.98E-03)†	1.89E-01(8.68E-08)†	6.34E-01(4.24E-05)‡	9.97E-01(2.59E-07)
WFG3	5	1.00E+00(4.16E-10)‡	1.00E+00(4.40E-09)†	9.95E-01(9.30E-06)†	4.81E-01(2.11E-06)†	9.96E-01(3.79E-04)†	1.00E+00(8.04E-10)
	25	1.00E+00(2.06E-10)‡	1.00E+00(2.36E-09)‡	9.96E-01(6.77E-06)†	4.81E-01(1.56E-06)†	1.00E+00(1.53E-07)‡	9.97E-01(2.12E-06)
	50	1.00E+00(5.04E-10)‡	1.00E+00(2.22E-09)†	9.96E-01(2.85E-06)†	4.81E-01(1.75E-06)†	1.00E+00(1.43E-09)	1.00E+00(9.49E-10)
	200	1.00E+00(5.96E-10)‡	1.00E+00(3.31E-09)†	9.96E-01(7.75E-06)†	4.81E-01(1.52E-06)†	9.35E-01(6.23E-02)	1.00E+00(7.38E-10)
WFG4	5	8.17E-01(1.81E-08)†	8.22E-01(1.25E-05)†	9.93E-01(2.45E-05)†	7.33E-01(1.49E-05)†	8.16E-01(4.66E-10)†	1.00E+00(9.29E-11)
	25	8.17E-01(4.21E-08)†	8.22E-01(1.06E-05)†	9.92E-01(9.90E-05)†	7.31E-01(4.84E-05)†	8.16E-01(9.98E-09)†	1.00E+00(9.87E-08)
	50	8.17E-01(3.75E-08)†	8.22E-01(1.47E-05)†	9.91E-01(7.65E-05)†	7.30E-01(3.26E-05)†	8.16E-01(2.63E-10)†	1.00E+00(8.24E-11)
	200	8.17E-01(5.15E-08)†	8.22E-01(9.79E-06)†	9.92E-01(5.69E-05)†	7.31E-01(3.63E-05)†	8.16E-01(3.33E-10)†	1.00E+00(6.24E-11)
WFG5	5	8.10E-01(3.08E-07)†	8.00E-01(1.49E-04)†	9.81E-01(5.20E-06)†	7.86E-01(1.36E-04)†	8.05E-01(1.17E-05)†	9.84E-01(2.76E-07)
	25	8.10E-01(3.03E-07)†	7.97E-01(1.71E-04)†	9.80E-01(1.16E-05)†	7.84E-01(1.28E-04)†	8.04E-01(4.21E-05)†	9.84E-01(5.15E-07)
	50	8.10E-01(1.52E-07)†	8.01E-01(1.46E-04)†	9.77E-01(4.88E-05)†	7.82E-01(9.10E-05)†	8.05E-01(2.43E-05)†	9.84E-01(3.48E-07)
	200	8.10E-01(2.80E-07)†	7.96E-01(2.04E-04)†	9.78E-01(1.67E-05)†	7.87E-01(2.27E-04)†	8.04E-01(3.80E-05)†	9.84E-01(4.98E-07)
WFG6	5	8.15E-01(5.44E-05)†	8.18E-01(1.94E-07)†	9.74E-01(6.24E-05)	4.25E-01(1.21E-06)†	8.12E-01(4.14E-06)†	9.77E-01(1.52E-04)
	25	8.13E-01(3.02E-05)†	8.18E-01(1.69E-07)†	9.77E-01(9.79E-05)	4.25E-01(8.28E-07)†	8.16E-01(4.43E-04)†	9.65E-01(1.31E-03)
	50	8.13E-01(7.91E-06)†	8.18E-01(8.38E-08)†	9.77E-01(6.83E-05)	4.24E-01(1.49E-06)†	8.20E-01(6.95E-04)†	9.53E-01(6.64E-03)
	200	8.14E-01(2.59E-05)†	8.18E-01(1.37E-07)†	9.77E-01(5.47E-05)	4.25E-01(1.29E-06)†	8.10E-01(1.68E-04)†	9.80E-01(3.85E-05)
WFG7	5	8.17E-01(1.17E-08)†	8.18E-01(2.43E-07)†	9.93E-01(2.39E-05)†	8.13E-01(3.78E-06)†	8.16E-01(1.26E-10)†	1.00E+00(3.53E-08)
	25	8.16E-01(3.23E-14)†	8.19E-01(4.25E-07)†	9.95E-01(1.22E-05)†	8.13E-01(2.90E-06)†	8.16E-01(1.07E-10)†	1.00E+00(2.31E-11)
	50	8.17E-01(3.53E-07)†	8.18E-01(2.99E-07)†	9.92E-01(3.04E-05)†	8.14E-01(5.51E-06)†	8.16E-01(2.63E-10)†	1.00E+00(3.05E-11)
	200	8.17E-01(7.64E-10)†	8.18E-01(3.66E-07)†	9.94E-01(1.17E-05)†	8.13E-01(4.13E-06)†	8.16E-01(1.68E-10)†	1.00E+00(7.21E-12)
WFG8	5	8.17E-01(3.37E-08)†	8.18E-01(3.69E-07)†	9.93E-01(3.03E-05)†	8.13E-01(4.95E-06)†	8.16E-01(1.49E-10)†	1.00E+00(5.81E-12)
	25	8.16E-01(3.23E-14)†	8.19E-01(5.82E-07)†	9.93E-01(1.80E-05)†	8.13E-01(5.22E-06)†	8.16E-01(1.73E-10)†	1.00E+00(1.06E-11)
	50	8.16E-01(6.24E-14)†	8.18E-01(2.82E-07)†	9.94E-01(1.15E-05)†	8.13E-01(6.41E-06)†	8.16E-01(1.31E-10)†	1.00E+00(1.05E-12)
	200	8.17E-01(7.03E-09)†	8.18E-01(4.55E-07)†	9.92E-01(3.19E-05)†	8.12E-01(3.46E-06)†	8.16E-01(1.66E-10)†	1.00E+00(3.24E-11)
WFG9	5	7.54E-01(3.59E-03)†	8.75E-01(1.64E-06)	8.72E-01(4.76E-05)†	8.68E-01(1.01E-02)	7.79E-01(5.21E-03)†	8.79E-01(8.65E-05)
	25	7.95E-01(5.35E-03)†	8.72E-01(2.37E-04)	8.75E-01(2.02E-05)†	8.41E-01(1.05E-02)	8.07E-01(5.91E-03)†	8.78E-01(3.71E-05)
	50	8.00E-01(3.70E-03)†	8.75E-01(1.44E-11)	8.73E-01(4.62E-05)†	8.07E-01(1.01E-02)†	8.12E-01(5.29E-03)†	8.82E-01(1.12E-04)
	200	7.90E-01(5.84E-03)†	8.75E-01(1.97E-10)	8.74E-01(3.28E-05)†	8.15E-01(1.29E-02)	8.22E-01(5.65E-03)†	8.79E-01(3.56E-05)

TABLE 39
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 3 TO 4 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	6.18E-01(3.65E-04)†	6.40E-01(8.32E-04)†	9.97E-01(3.61E-06)†	9.80E-01(2.34E-04)†	6.09E-01(3.15E-04)†	1.00E+00(2.63E-10)
	25	6.99E-01(3.35E-03)†	7.91E-01(4.00E-06)†	9.98E-01(1.72E-06)	9.98E-01(1.35E-05)	8.04E-01(3.51E-03)†	9.92E-01(1.14E-04)
	50	7.79E-01(1.96E-03)†	7.91E-01(1.12E-07)†	9.99E-01(7.08E-07)†	1.00E+00(9.50E-09)†	8.34E-01(6.74E-03)†	1.00E+00(3.50E-10)
	200	8.15E-01(4.01E-03)†	7.91E-01(8.89E-10)†	1.00E+00(8.92E-08)†	1.00E+00(2.90E-13)‡	8.04E-01(2.74E-03)†	1.00E+00(1.82E-09)
F2	5	7.95E-01(2.11E-04)†	9.48E-01(8.58E-04)†	9.97E-01(1.91E-06)†	9.91E-01(6.90E-04)	9.68E-01(1.47E-03)†	9.99E-01(1.04E-05)
	25	8.80E-01(1.31E-04)†	9.21E-01(1.50E-04)†	9.99E-01(9.64E-07)	9.67E-01(5.17E-03)	8.90E-01(3.35E-04)†	9.98E-01(7.17E-06)
	50	8.84E-01(1.29E-04)†	9.09E-01(9.05E-05)†	9.99E-01(1.03E-06)†	9.69E-01(7.19E-04)†	8.83E-01(8.43E-05)†	9.99E-01(3.16E-06)
	200	8.91E-01(1.61E-04)†	8.79E-01(1.95E-05)†	9.99E-01(9.98E-07)†	8.89E-01(6.38E-05)†	8.71E-01(3.18E-05)†	9.99E-01(2.27E-06)
F3	5	7.61E-01(2.91E-04)†	8.00E-01(1.07E-03)†	9.87E-01(2.74E-04)†	9.77E-01(9.40E-04)†	7.76E-01(2.63E-03)†	1.00E+00(3.47E-11)
	25	8.37E-01(3.43E-04)†	8.76E-01(1.31E-04)†	9.94E-01(9.01E-06)†	9.98E-01(6.01E-06)	8.98E-01(2.91E-03)†	9.99E-01(3.07E-06)
	50	8.74E-01(1.72E-03)†	8.69E-01(4.76E-06)†	9.94E-01(1.03E-05)†	1.00E+00(7.80E-08)†	8.89E-01(2.46E-03)†	1.00E+00(1.65E-11)
	200	8.79E-01(1.61E-03)†	8.66E-01(1.17E-07)†	9.97E-01(4.33E-06)†	1.00E+00(1.58E-12)	8.84E-01(2.06E-03)†	1.00E+00(1.31E-09)
F4	5	7.07E-01(5.09E-32)†	7.07E-01(5.09E-32)‡	8.87E-01(7.22E-03)†	7.07E-01(1.51E-09)†	8.56E-01(5.16E-04)‡	7.43E-01(4.50E-03)
	25	7.29E-01(2.25E-03)	7.28E-01(2.93E-03)	9.04E-01(8.17E-03)‡	7.19E-01(1.57E-03)	8.66E-01(4.60E-12)‡	7.72E-01(6.04E-03)
	50	8.61E-01(8.15E-04)‡	7.95E-01(6.34E-03)†	9.42E-01(3.53E-03)‡	7.60E-01(5.12E-03)	8.66E-01(2.73E-13)‡	7.78E-01(6.40E-03)
	200	8.66E-01(1.15E-31)‡	8.66E-01(1.15E-31)‡	9.40E-01(3.47E-03)‡	8.54E-01(1.54E-03)‡	8.66E-01(3.23E-14)‡	7.84E-01(6.52E-03)
WFG1	5	5.72E-01(1.02E-04)†	6.95E-01(4.39E-03)†	7.79E-01(9.15E-04)†	4.11E-01(3.56E-04)†	6.17E-01(8.68E-04)†	9.90E-01(4.66E-04)
	25	6.68E-01(9.76E-04)†	6.71E-01(2.07E-03)†	8.04E-01(6.42E-04)†	5.53E-01(2.42E-05)†	6.79E-01(7.95E-04)†	9.91E-01(2.96E-04)
	50	7.27E-01(2.17E-04)†	6.02E-01(1.88E-03)†	8.50E-01(3.07E-04)†	5.57E-01(1.01E-05)†	7.31E-01(3.77E-04)†	9.96E-01(8.83E-06)
	200	7.79E-01(1.54E-05)†	5.30E-01(1.67E-04)†	8.83E-01(2.56E-04)†	5.53E-01(2.29E-05)†	7.85E-01(1.38E-05)†	9.96E-01(8.96E-06)
WFG2	5	6.31E-01(6.38E-04)†	5.89E-01(1.40E-03)†	8.19E-01(2.25E-03)†	1.82E-01(1.48E-05)†	7.35E-01(1.63E-03)‡	9.97E-01(2.81E-06)
	25	7.31E-01(1.30E-04)†	5.21E-01(2.92E-04)†	8.62E-01(1.97E-03)†	1.93E-01(5.84E-06)†	7.37E-01(5.39E-05)‡	9.92E-01(1.52E-05)
	50	7.46E-01(6.00E-06)†	5.11E-01(1.36E-04)†	8.64E-01(1.70E-03)†	1.96E-01(1.75E-05)†	7.43E-01(3.73E-06)‡	9.90E-01(3.37E-06)
	200	7.49E-01(2.72E-07)†	5.18E-01(2.43E-05)†	8.55E-01(1.18E-03)†	1.92E-01(6.67E-08)†	7.41E-01(8.02E-07)‡	9.88E-01(1.11E-06)
WFG3	5	1.00E+00(5.29E-10)‡	1.00E+00(1.29E-07)†	9.93E-01(1.24E-05)†	4.75E-01(3.62E-04)†	1.00E+00(4.73E-07)†	1.00E+00(2.61E-07)
	25	1.00E+00(2.53E-10)‡	9.99E-01(2.22E-07)†	9.93E-01(1.32E-05)†	5.01E-01(9.04E-06)†	1.00E+00(2.14E-09)	9.99E-01(1.31E-06)
	50	1.00E+00(3.72E-10)‡	9.99E-01(2.37E-07)†	9.95E-01(1.71E-05)†	4.99E-01(6.57E-06)†	1.00E+00(1.20E-09)†	1.00E+00(2.10E-09)
	200	1.00E+00(8.49E-11)‡	9.99E-01(6.43E-08)†	9.94E-01(2.20E-05)†	4.96E-01(1.09E-07)†	9.35E-01(6.24E-02)†	1.00E+00(1.66E-09)
WFG4	5	7.75E-01(1.28E-03)†	9.80E-01(8.30E-04)†	9.50E-01(4.86E-04)†	7.63E-01(2.13E-03)†	9.54E-01(1.02E-03)†	1.00E+00(5.32E-11)
	25	8.77E-01(2.14E-05)†	9.87E-01(4.22E-04)†	9.67E-01(7.80E-04)†	8.60E-01(9.53E-06)†	8.71E-01(6.35E-06)†	9.97E-01(8.23E-06)
	50	8.76E-01(9.62E-06)†	9.75E-01(9.02E-04)†	9.62E-01(6.29E-04)†	8.58E-01(5.54E-05)†	8.68E-01(3.63E-06)†	1.00E+00(5.22E-11)
	200	8.76E-01(5.63E-06)†	9.50E-01(6.32E-04)†	9.54E-01(1.15E-03)†	8.20E-01(2.10E-04)†	8.66E-01(2.77E-09)†	1.00E+00(4.39E-11)
WFG5	5	7.60E-01(2.88E-04)†	9.79E-01(3.55E-04)†	9.82E-01(3.06E-05)†	8.17E-01(1.07E-03)†	9.45E-01(8.54E-04)†	9.85E-01(4.34E-06)
	25	8.68E-01(3.95E-05)†	9.69E-01(5.09E-04)†	9.82E-01(3.74E-06)†	8.59E-01(1.44E-04)†	8.62E-01(5.90E-06)†	9.85E-01(6.94E-06)
	50	8.69E-01(3.18E-05)†	9.37E-01(1.36E-03)†	9.82E-01(5.51E-06)†	8.60E-01(9.13E-05)†	8.60E-01(2.14E-06)†	9.85E-01(7.51E-06)
	200	8.67E-01(1.89E-05)†	8.94E-01(6.29E-04)†	9.83E-01(3.86E-06)†	8.60E-01(9.39E-05)†	8.59E-01(1.49E-08)†	9.86E-01(4.12E-06)
WFG6	5	7.87E-01(4.89E-04)†	9.65E-01(6.05E-04)	9.73E-01(9.08E-05)	3.75E-01(4.76E-06)†	9.40E-01(1.26E-03)†	9.66E-01(5.78E-04)
	25	8.74E-01(1.49E-04)†	9.82E-01(2.00E-04)	9.79E-01(6.28E-05)	3.92E-01(7.48E-05)†	8.81E-01(7.69E-04)†	9.80E-01(3.88E-05)
	50	8.74E-01(7.97E-05)†	9.55E-01(2.73E-04)†	9.78E-01(1.21E-04)	3.97E-01(1.30E-06)†	8.70E-01(5.75E-04)†	9.70E-01(4.25E-04)
	200	8.73E-01(5.37E-05)†	9.22E-01(1.41E-04)†	9.78E-01(8.74E-05)†	3.98E-01(1.30E-06)†	8.58E-01(1.43E-04)	9.78E-01(1.46E-04)
WFG7	5	8.85E-01(3.31E-04)†	9.99E-01(1.24E-06)†	9.95E-01(2.96E-05)†	9.92E-01(3.24E-05)†	9.38E-01(1.49E-03)†	1.00E+00(2.98E-09)
	25	8.81E-01(2.44E-04)†	9.99E-01(3.41E-07)†	9.96E-01(6.13E-05)†	9.49E-01(2.68E-04)†	8.72E-01(5.72E-05)†	9.99E-01(7.31E-07)
	50	8.81E-01(2.34E-04)†	9.96E-01(4.49E-05)†	9.96E-01(8.22E-05)†	9.06E-01(1.44E-04)†	8.67E-01(7.08E-06)†	1.00E+00(8.83E-07)
	200	8.76E-01(1.15E-04)†	9.77E-01(2.74E-04)†	9.97E-01(3.58E-05)†	8.78E-01(2.52E-05)†	8.66E-01(9.59E-07)†	1.00E+00(8.28E-13)
WFG8	5	8.91E-01(5.41E-04)†	9.99E-01(9.81E-07)†	9.96E-01(1.21E-05)†	9.87E-01(1.70E-04)†	9.41E-01(1.73E-03)†	1.00E+00(6.93E-07)
	25	8.80E-01(1.23E-04)†	9.99E-01(2.86E-06)	9.96E-01(5.40E-05)†	9.45E-01(2.27E-04)†	8.72E-01(9.02E-05)†	9.99E-01(1.33E-06)
	50	8.76E-01(1.59E-04)†	9.97E-01(5.99E-05)†	9.96E-01(5.48E-05)†	9.04E-01(8.23E-05)†	8.67E-01(1.01E-05)†	1.00E+00(2.73E-13)
	200	8.82E-01(1.84E-04)†	9.70E-01(1.79E-04)†	9.98E-01(5.67E-06)†	8.77E-01(7.24E-06)†	8.66E-01(9.65E-12)†	1.00E+00(3.23E-14)
WFG9	5	6.93E-01(7.00E-03)†	8.75E-01(6.08E-04)‡	8.78E-01(2.55E-04)	9.29E-01(4.16E-03)‡	8.65E-01(7.34E-04)	8.40E-01(3.01E-03)
	25	7.78E-01(7.23E-03)†	8.78E-01(2.25E-04)	8.81E-01(1.73E-04)	9.19E-01(1.70E-03)‡	8.48E-01(1.98E-03)†	8.55E-01(2.61E-03)
	50	7.86E-01(8.00E-03)	8.73E-01(6.16E-04)‡	8.79E-01(2.54E-04)	8.95E-01(2.74E-03)‡	8.36E-01(2.82E-03)	8.36E-01(3.23E-03)
	200	7.80E-01(3.50E-03)†	8.75E-01(3.62E-04)‡	8.84E-01(3.43E-05)‡	8.69E-01(4.24E-03)‡	8.24E-01(2.41E-03)	8.29E-01(3.33E-03)

TABLE 40
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 4 TO 5 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	5.73E-01(5.32E-04)†	6.33E-01(1.74E-03)†	9.98E-01(1.39E-06)†	9.95E-01(3.17E-05)†	6.39E-01(1.23E-02)†	1.00E+00(1.66E-10)
	25	7.66E-01(9.85E-03)†	8.35E-01(5.92E-05)†	9.99E-01(9.75E-07)‡	9.52E-01(3.70E-03)	8.60E-01(5.09E-03)†	9.76E-01(6.79E-04)
	50	8.54E-01(5.61E-03)†	8.39E-01(1.11E-05)†	1.00E+00(6.02E-08)†	9.91E-01(2.47E-04)†	8.80E-01(4.72E-03)†	1.00E+00(2.10E-10)
	200	9.61E-01(3.23E-03)	8.37E-01(2.52E-08)†	1.00E+00(1.61E-10)‡	9.99E-01(5.95E-06)‡	8.59E-01(2.74E-03)†	9.99E-01(6.47E-05)
F2	5	7.70E-01(4.48E-04)†	9.87E-01(2.18E-04)†	9.92E-01(1.73E-04)†	9.92E-01(7.64E-04)	9.76E-01(6.89E-04)†	9.97E-01(6.70E-05)
	25	9.07E-01(2.48E-04)†	9.59E-01(2.10E-04)†	9.94E-01(1.72E-04)‡	7.18E-01(1.89E-02)†	9.24E-01(2.21E-04)†	9.92E-01(2.21E-05)
	50	9.28E-01(2.27E-04)†	9.42E-01(9.39E-05)†	9.94E-01(9.53E-05)	1.83E-01(4.56E-02)†	9.12E-01(7.34E-05)†	9.96E-01(4.46E-05)
	200	9.45E-01(3.16E-04)†	9.10E-01(2.53E-05)†	9.97E-01(5.61E-05)	7.74E-06(2.13E-17)†	9.03E-01(7.16E-05)†	9.99E-01(5.95E-06)
F3	5	7.19E-01(2.97E-04)†	8.11E-01(7.18E-04)†	9.90E-01(1.05E-04)†	9.87E-01(7.19E-04)†	7.73E-01(7.26E-03)†	1.00E+00(1.76E-11)
	25	8.48E-01(3.57E-04)†	9.17E-01(2.77E-04)†	9.96E-01(4.85E-06)	8.82E-01(3.59E-03)†	9.28E-01(2.09E-03)†	9.93E-01(1.43E-04)
	50	9.08E-01(1.87E-03)†	9.04E-01(4.66E-05)†	9.98E-01(3.86E-06)†	8.59E-01(8.21E-03)†	9.23E-01(2.16E-03)†	1.00E+00(1.75E-07)
	200	9.72E-01(1.52E-03)†	8.96E-01(5.39E-06)†	1.00E+00(8.24E-07)†	5.37E-01(5.12E-02)†	9.06E-01(1.01E-03)†	1.00E+00(2.62E-09)
F4	5	6.33E-01(1.61E-07)	6.49E-01(1.89E-03)	8.65E-01(9.38E-03)‡	7.27E-01(7.46E-03)	8.92E-01(9.68E-04)‡	7.10E-01(5.16E-03)
	25	8.45E-01(2.95E-03)‡	7.98E-01(8.54E-03)‡	9.25E-01(4.69E-03)‡	8.79E-01(1.66E-03)‡	8.94E-01(9.89E-13)‡	7.46E-01(3.20E-03)
	50	8.94E-01(5.09E-32)‡	8.87E-01(8.96E-04)‡	9.51E-01(2.00E-03)‡	8.91E-01(4.63E-04)‡	8.94E-01(5.09E-32)‡	7.24E-01(4.73E-03)
	200	8.94E-01(7.26E-12)‡	8.94E-01(5.09E-32)‡	9.56E-01(2.32E-03)‡	8.94E-01(5.09E-32)‡	8.94E-01(5.09E-32)‡	7.32E-01(5.32E-03)
WFG1	5	5.00E-01(4.51E-04)†	5.34E-01(2.07E-03)†	7.08E-01(4.62E-04)†	4.52E-01(7.36E-04)†	5.52E-01(6.63E-04)†	9.23E-01(5.77E-04)
	25	6.66E-01(4.36E-04)†	5.21E-01(1.06E-03)†	7.76E-01(3.65E-04)†	4.78E-01(6.24E-04)†	6.66E-01(7.29E-04)†	9.30E-01(8.93E-05)
	50	7.41E-01(2.35E-04)†	4.77E-01(1.12E-03)†	8.29E-01(3.30E-04)†	4.91E-01(2.35E-04)†	7.48E-01(4.88E-04)†	9.33E-01(6.57E-05)
	200	8.16E-01(2.54E-05)†	4.43E-01(1.43E-04)†	8.90E-01(1.16E-04)†	4.94E-01(6.56E-05)†	8.23E-01(2.29E-05)†	9.34E-01(1.05E-04)
WFG2	5	6.08E-01(6.69E-04)†	5.58E-01(1.64E-03)†	7.23E-01(1.85E-03)†	1.70E-01(3.67E-05)†	7.26E-01(1.62E-03)‡	9.98E-01(3.32E-06)
	25	7.70E-01(1.71E-04)†	4.33E-01(2.49E-04)†	8.04E-01(5.47E-04)†	1.76E-01(5.79E-06)†	7.81E-01(1.17E-04)‡	9.87E-01(2.32E-05)
	50	7.96E-01(1.99E-05)†	4.23E-01(1.96E-04)†	8.35E-01(5.33E-04)†	1.75E-01(1.33E-06)†	7.96E-01(6.81E-06)‡	9.52E-01(3.12E-02)
	200	8.04E-01(1.20E-06)†	4.30E-01(5.52E-05)†	8.47E-01(5.63E-04)†	1.74E-01(5.07E-07)†	7.90E-01(1.34E-06)‡	9.78E-01(1.93E-06)
WFG3	5	1.00E+00(3.78E-09)‡	9.99E-01(2.05E-07)‡	9.90E-01(4.03E-05)†	4.73E-01(3.38E-05)†	1.00E+00(1.47E-07)‡	9.81E-01(1.85E-03)
	25	1.00E+00(1.14E-09)‡	9.99E-01(2.03E-07)‡	9.90E-01(3.12E-05)†	4.74E-01(6.92E-06)†	1.00E+00(9.88E-09)	9.98E-01(2.56E-05)
	50	1.00E+00(1.34E-09)‡	9.99E-01(2.57E-07)†	9.88E-01(6.95E-05)†	4.74E-01(9.25E-06)†	1.00E+00(6.68E-09)	9.99E-01(1.11E-05)
	200	1.00E+00(5.18E-11)‡	9.99E-01(1.36E-07)†	9.89E-01(1.17E-04)†	4.84E-01(1.46E-05)†	9.35E-01(6.23E-02)†	1.00E+00(5.58E-09)
WFG4	5	7.77E-01(1.13E-03)†	9.95E-01(5.01E-06)†	9.24E-01(6.05E-04)†	8.43E-01(6.71E-04)†	9.43E-01(6.41E-04)†	9.99E-01(1.04E-05)
	25	9.14E-01(1.90E-04)†	9.94E-01(9.21E-05)‡	9.38E-01(4.83E-04)†	8.73E-01(1.82E-06)†	9.00E-01(9.35E-06)†	9.88E-01(2.96E-05)
	50	9.11E-01(4.37E-05)†	9.97E-01(4.99E-07)†	9.42E-01(5.54E-04)†	8.73E-01(2.42E-06)†	8.96E-01(2.90E-06)†	1.00E+00(2.22E-11)
	200	9.12E-01(7.32E-05)†	9.94E-01(5.29E-05)†	9.32E-01(6.02E-04)†	8.67E-01(2.79E-05)†	8.95E-01(3.68E-08)†	9.99E-01(8.27E-06)
WFG5	5	7.41E-01(5.73E-04)†	9.80E-01(2.43E-04)†	9.80E-01(4.93E-05)†	8.08E-01(1.28E-04)†	9.74E-01(2.44E-04)†	9.85E-01(6.39E-06)
	25	8.97E-01(8.34E-05)†	9.74E-01(4.22E-04)†	9.79E-01(5.33E-05)†	8.09E-01(3.28E-05)†	8.92E-01(1.03E-05)†	9.84E-01(1.06E-05)
	50	9.07E-01(8.13E-05)†	9.66E-01(5.86E-04)†	9.81E-01(9.34E-05)†	8.08E-01(3.13E-05)†	8.91E-01(1.27E-05)†	9.86E-01(6.74E-06)
	200	9.06E-01(6.75E-05)†	9.40E-01(9.54E-04)†	9.81E-01(7.18E-05)†	8.09E-01(8.10E-06)†	8.88E-01(6.85E-08)†	9.87E-01(7.73E-06)
WFG6	5	7.57E-01(6.85E-04)†	9.96E-01(2.39E-05)‡	9.60E-01(1.98E-04)†	3.40E-01(2.14E-05)†	9.60E-01(2.41E-04)†	9.70E-01(4.07E-04)
	25	8.95E-01(2.12E-04)†	9.95E-01(4.47E-05)‡	9.68E-01(2.09E-04)†	3.56E-01(9.62E-07)†	8.99E-01(2.85E-04)†	9.78E-01(3.80E-05)
	50	9.10E-01(9.64E-05)†	9.90E-01(9.92E-05)‡	9.66E-01(2.46E-04)†	3.56E-01(1.60E-07)†	8.87E-01(2.74E-04)†	9.80E-01(2.76E-05)
	200	9.10E-01(8.35E-05)†	9.59E-01(2.14E-04)†	9.65E-01(1.64E-04)†	3.57E-01(1.01E-07)†	8.84E-01(1.14E-04)†	9.81E-01(3.33E-05)
WFG7	5	9.24E-01(4.94E-04)†	9.96E-01(2.30E-06)†	9.93E-01(9.09E-05)†	9.94E-01(1.79E-06)†	9.62E-01(5.08E-04)†	1.00E+00(3.10E-06)
	25	9.31E-01(2.27E-04)†	9.99E-01(5.42E-08)‡	9.91E-01(1.14E-04)	9.61E-01(2.85E-04)†	8.99E-01(3.80E-05)†	9.91E-01(3.08E-05)
	50	9.29E-01(1.40E-04)†	9.99E-01(4.66E-08)†	9.93E-01(1.23E-04)†	9.27E-01(9.42E-05)†	8.95E-01(1.23E-05)†	1.00E+00(2.85E-12)
	200	9.25E-01(2.02E-04)†	1.00E+00(5.09E-09)†	9.95E-01(5.81E-05)†	9.05E-01(3.41E-05)†	8.94E-01(2.18E-11)†	1.00E+00(0.00E+00)
WFG8	5	9.26E-01(6.83E-04)†	9.96E-01(1.31E-06)†	9.94E-01(4.51E-05)†	9.95E-01(3.29E-06)†	9.58E-01(3.79E-04)†	1.00E+00(9.61E-08)
	25	9.31E-01(2.59E-04)†	9.98E-01(1.27E-07)‡	9.96E-01(4.98E-05)	9.62E-01(2.31E-04)†	9.01E-01(1.10E-04)†	9.94E-01(2.94E-05)
	50	9.28E-01(1.96E-04)†	9.99E-01(5.41E-08)†	9.94E-01(9.26E-05)†	9.31E-01(1.42E-04)†	8.97E-01(6.24E-05)†	1.00E+00(1.16E-13)
	200	9.25E-01(1.96E-04)†	9.99E-01(2.53E-06)†	9.91E-01(1.24E-04)†	9.05E-01(2.69E-05)†	8.94E-01(3.23E-14)†	1.00E+00(0.00E+00)
WFG9	5	6.63E-01(1.52E-02)†	8.77E-01(2.87E-04)‡	8.81E-01(7.96E-05)‡	9.41E-01(6.68E-03)‡	8.69E-01(4.27E-04)	8.27E-01(4.58E-03)
	25	7.58E-01(9.40E-03)†	8.79E-01(3.69E-04)‡	8.82E-01(8.32E-05)‡	9.31E-01(2.13E-03)‡	8.37E-01(1.35E-03)	8.16E-01(6.57E-03)
	50	7.68E-01(5.10E-03)	8.76E-01(6.64E-04)‡	8.76E-01(3.63E-04)‡	9.15E-01(1.81E-03)‡	8.33E-01(1.45E-03)	8.00E-01(5.33E-03)
	200	8.02E-01(2.50E-03)	8.83E-01(2.12E-04)‡	8.82E-01(1.07E-04)‡	9.10E-01(1.79E-03)‡	8.32E-01(1.40E-03)	8.05E-01(4.10E-03)

TABLE 41
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 5 TO 6 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	5.42E-01(3.98E-04)†	6.24E-01(1.49E-03)†	9.98E-01(1.13E-06)†	9.88E-01(4.60E-04)†	6.35E-01(1.29E-02)†	1.00E+00(4.46E-11)
	25	7.96E-01(6.87E-03)†	8.47E-01(3.06E-04)†	1.00E+00(4.78E-08)‡	9.83E-01(9.51E-04)	8.69E-01(3.45E-03)†	9.74E-01(1.01E-03)
	50	9.02E-01(4.43E-03)†	8.67E-01(4.69E-05)†	1.00E+00(3.03E-10)	9.89E-01(5.24E-04)†	8.90E-01(2.63E-03)†	1.00E+00(2.13E-08)
	200	1.00E+00(0.00E+00)‡	8.67E-01(2.28E-07)†	1.00E+00(0.00E+00)‡	1.00E+00(1.81E-06)‡	8.95E-01(2.93E-03)†	9.97E-01(1.62E-04)
F2	5	7.64E-01(5.16E-04)†	9.86E-01(2.34E-04)†	9.62E-01(7.62E-04)†	9.73E-01(1.90E-03)†	9.76E-01(4.25E-04)†	9.95E-01(9.29E-05)
	25	9.36E-01(2.36E-04)†	9.73E-01(1.94E-04)	9.93E-01(1.20E-04)‡	7.16E-01(8.66E-03)†	9.33E-01(1.29E-04)†	9.80E-01(1.74E-04)
	50	9.75E-01(3.28E-04)†	9.65E-01(1.92E-04)†	9.97E-01(5.42E-05)	4.85E-01(2.44E-02)†	9.26E-01(4.68E-05)†	9.92E-01(1.06E-04)
	200	9.99E-01(1.75E-05)†	9.36E-01(6.67E-05)†	9.99E-01(1.91E-05)‡	5.15E-02(8.10E-04)†	9.19E-01(4.95E-05)†	9.94E-01(1.26E-04)
F3	5	6.94E-01(4.14E-04)†	8.39E-01(1.43E-03)†	9.93E-01(3.39E-05)†	9.87E-01(8.29E-04)†	7.68E-01(8.60E-03)†	9.99E-01(2.18E-05)
	25	8.85E-01(2.35E-03)†	9.40E-01(3.13E-04)†	9.96E-01(5.88E-06)	8.29E-01(5.73E-03)†	9.45E-01(1.80E-03)	9.77E-01(9.55E-04)
	50	9.77E-01(9.66E-04)†	9.33E-01(1.30E-04)†	9.99E-01(9.03E-07)†	7.90E-01(6.09E-03)†	9.37E-01(1.29E-03)†	1.00E+00(8.44E-11)
	200	1.00E+00(0.00E+00)	9.17E-01(9.30E-06)†	1.00E+00(0.00E+00)	7.55E-01(9.90E-03)†	9.31E-01(1.20E-03)†	9.99E-01(6.54E-05)
F4	5	5.93E-01(1.57E-03)†	6.20E-01(3.67E-03)†	8.81E-01(5.66E-03)‡	8.34E-01(6.48E-03)‡	9.20E-01(5.79E-04)‡	6.89E-01(3.83E-03)
	25	9.10E-01(1.54E-04)‡	8.69E-01(5.52E-03)‡	9.68E-01(1.16E-03)‡	9.13E-01(4.59E-31)‡	9.13E-01(3.23E-14)‡	7.19E-01(3.23E-03)
	50	9.20E-01(4.74E-04)‡	9.10E-01(2.99E-04)‡	9.68E-01(1.24E-03)‡	9.10E-01(2.99E-04)‡	9.13E-01(4.59E-31)‡	7.06E-01(4.91E-03)
	200	9.45E-01(1.58E-03)‡	9.13E-01(4.59E-31)‡	9.76E-01(1.16E-03)‡	9.13E-01(4.59E-31)‡	9.13E-01(4.59E-31)‡	7.39E-01(6.67E-03)
WFG1	5	4.64E-01(9.55E-04)†	4.15E-01(9.67E-04)†	6.46E-01(4.81E-04)†	4.04E-01(1.23E-03)†	5.09E-01(9.34E-04)†	8.72E-01(5.40E-04)
	25	6.68E-01(5.11E-04)†	4.14E-01(6.92E-04)†	7.52E-01(3.93E-04)†	4.39E-01(4.92E-04)†	6.51E-01(2.97E-04)†	8.89E-01(2.77E-04)
	50	7.50E-01(2.65E-04)†	3.90E-01(1.09E-03)†	8.14E-01(2.82E-04)†	4.50E-01(1.77E-04)†	7.50E-01(2.33E-04)†	9.17E-01(2.20E-04)
	200	8.40E-01(5.10E-05)†	3.67E-01(1.07E-04)†	8.91E-01(9.24E-05)†	4.52E-01(4.86E-05)†	8.39E-01(7.01E-05)†	9.31E-01(1.48E-04)
WFG2	5	5.87E-01(4.83E-04)†	4.77E-01(1.01E-03)†	6.54E-01(6.82E-04)†	1.62E-01(2.24E-05)†	6.95E-01(6.52E-04)‡	9.90E-01(4.27E-04)
	25	7.91E-01(2.67E-04)†	3.52E-01(1.50E-04)†	8.09E-01(1.99E-04)†	1.66E-01(9.71E-06)†	8.04E-01(1.14E-04)‡	9.75E-01(5.11E-04)
	50	8.24E-01(5.33E-05)†	3.50E-01(1.23E-04)†	8.33E-01(1.09E-04)†	1.66E-01(2.27E-06)†	8.27E-01(7.12E-06)‡	9.47E-01(3.10E-02)
	200	8.38E-01(2.66E-06)†	3.55E-01(3.32E-05)†	8.42E-01(1.57E-04)†	1.65E-01(7.87E-07)†	8.18E-01(1.50E-06)‡	9.67E-01(3.65E-04)
WFG3	5	1.00E+00(6.24E-09)‡	9.98E-01(1.18E-06)†	9.85E-01(5.32E-05)†	4.56E-01(3.49E-05)†	1.00E+00(1.94E-07)	9.98E-01(2.24E-05)
	25	1.00E+00(2.99E-09)‡	9.98E-01(4.93E-07)	9.78E-01(2.63E-04)†	4.53E-01(4.49E-05)†	9.99E-01(1.69E-07)	9.80E-01(1.31E-03)
	50	1.00E+00(2.88E-09)‡	9.98E-01(3.80E-07)†	9.85E-01(7.33E-05)†	4.43E-01(3.07E-05)†	9.99E-01(1.46E-07)†	9.99E-01(2.33E-06)
	200	1.00E+00(1.77E-10)‡	9.98E-01(1.84E-07)†	9.79E-01(2.33E-04)†	4.47E-01(1.91E-06)†	9.35E-01(6.22E-02)†	1.00E+00(7.40E-08)
WFG4	5	7.83E-01(1.42E-03)†	9.95E-01(6.62E-06)†	9.14E-01(5.13E-04)†	8.61E-01(2.90E-04)†	9.27E-01(5.49E-04)†	1.00E+00(5.26E-08)
	25	9.39E-01(2.45E-04)†	9.94E-01(5.20E-05)‡	9.57E-01(3.13E-04)†	8.66E-01(3.18E-06)†	9.19E-01(2.39E-05)†	9.80E-01(8.41E-05)
	50	9.50E-01(4.07E-04)†	9.97E-01(1.71E-05)†	9.50E-01(3.07E-04)†	8.65E-01(2.57E-06)†	9.15E-01(3.37E-06)†	1.00E+00(1.18E-11)
	200	9.49E-01(3.18E-04)†	9.98E-01(6.37E-07)†	9.41E-01(2.87E-04)†	8.63E-01(4.88E-06)†	9.13E-01(2.66E-07)†	1.00E+00(3.67E-06)
WFG5	5	7.37E-01(6.77E-04)†	9.81E-01(3.09E-04)†	9.70E-01(1.26E-04)†	7.45E-01(5.03E-05)†	9.71E-01(3.09E-04)†	9.84E-01(1.86E-05)
	25	9.21E-01(1.67E-04)†	9.71E-01(4.20E-04)	9.73E-01(1.52E-04)	7.43E-01(4.78E-05)†	9.14E-01(6.93E-05)†	9.70E-01(8.97E-05)
	50	9.34E-01(1.92E-04)†	9.63E-01(5.39E-04)†	9.73E-01(1.46E-04)†	7.36E-01(6.41E-05)†	9.10E-01(3.85E-05)†	9.85E-01(3.76E-06)
	200	9.38E-01(2.38E-04)†	9.59E-01(5.75E-04)†	9.71E-01(1.20E-04)†	7.36E-01(3.93E-05)†	9.07E-01(1.97E-07)†	9.86E-01(3.77E-06)
WFG6	5	7.47E-01(5.56E-04)†	9.94E-01(9.86E-05)‡	9.47E-01(3.63E-04)†	3.16E-01(2.92E-05)†	9.51E-01(4.55E-04)†	9.72E-01(2.22E-04)
	25	9.21E-01(1.21E-04)†	9.84E-01(2.92E-04)‡	9.54E-01(2.94E-04)†	3.26E-01(3.44E-07)†	9.14E-01(2.31E-04)†	9.69E-01(8.59E-05)
	50	9.35E-01(9.32E-05)†	9.90E-01(1.26E-04)‡	9.59E-01(2.15E-04)†	3.26E-01(2.09E-07)†	9.06E-01(9.53E-05)†	9.79E-01(7.55E-05)
	200	9.39E-01(5.80E-05)†	9.90E-01(1.51E-04)‡	9.62E-01(2.48E-04)†	3.26E-01(6.30E-07)†	9.01E-01(1.19E-04)†	9.77E-01(1.82E-04)
WFG7	5	9.58E-01(4.55E-04)†	9.92E-01(1.53E-04)†	9.87E-01(1.89E-04)†	9.94E-01(6.00E-05)†	9.71E-01(3.14E-04)†	9.99E-01(1.38E-05)
	25	9.57E-01(9.54E-05)†	9.87E-01(2.43E-04)	9.91E-01(1.08E-04)‡	9.72E-01(2.13E-04)†	9.16E-01(2.82E-05)†	9.84E-01(9.06E-05)
	50	9.55E-01(1.03E-04)†	9.98E-01(4.44E-05)†	9.86E-01(1.39E-04)†	9.45E-01(6.62E-05)†	9.13E-01(5.80E-07)†	1.00E+00(7.98E-13)
	200	9.48E-01(1.13E-04)†	1.00E+00(1.37E-09)†	9.92E-01(9.12E-05)†	9.22E-01(2.13E-05)†	9.13E-01(1.34E-08)†	1.00E+00(0.00E+00)
WFG8	5	9.56E-01(4.12E-04)†	9.87E-01(2.79E-04)†	9.94E-01(7.08E-05)†	9.92E-01(1.47E-04)†	9.74E-01(2.60E-04)†	9.99E-01(1.74E-05)
	25	9.58E-01(2.05E-04)†	9.93E-01(1.73E-04)‡	9.92E-01(8.97E-05)‡	9.70E-01(2.39E-04)†	9.18E-01(8.39E-05)†	9.82E-01(7.61E-05)
	50	9.51E-01(1.13E-04)†	9.98E-01(3.11E-05)†	9.91E-01(8.27E-05)†	9.43E-01(6.92E-05)†	9.14E-01(2.20E-05)†	1.00E+00(9.03E-14)
	200	9.52E-01(1.01E-04)†	1.00E+00(1.93E-09)†	9.89E-01(1.14E-04)†	9.21E-01(2.02E-05)†	9.13E-01(4.59E-31)†	1.00E+00(0.00E+00)
WFG9	5	6.36E-01(1.66E-02)†	8.31E-01(3.30E-03)	8.79E-01(7.83E-05)‡	9.44E-01(7.13E-03)‡	8.67E-01(4.00E-04)‡	7.90E-01(8.04E-03)
	25	7.45E-01(1.09E-02)	8.72E-01(1.05E-03)‡	8.78E-01(2.04E-04)‡	9.46E-01(2.39E-03)‡	8.43E-01(9.18E-04)‡	7.72E-01(9.51E-03)
	50	7.75E-01(9.23E-03)	8.72E-01(8.19E-04)‡	8.78E-01(2.45E-04)‡	9.28E-01(1.44E-03)‡	8.33E-01(5.03E-04)‡	7.55E-01(7.31E-03)
	200	8.13E-01(2.74E-03)‡	8.86E-01(2.05E-04)‡	8.81E-01(1.99E-04)‡	9.25E-01(1.38E-03)‡	8.28E-01(5.05E-04)‡	7.78E-01(6.83E-03)

TABLE 42
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 6 TO 7 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	5.34E-01(4.82E-04)†	6.11E-01(1.61E-03)†	9.98E-01(1.30E-06)†	9.72E-01(1.00E-03)†	6.36E-01(1.02E-02)†	1.00E+00(8.27E-11)
	25	8.78E-01(5.65E-03)†	8.56E-01(2.94E-04)†	1.00E+00(7.18E-09)‡	9.71E-01(1.20E-03)	8.75E-01(3.51E-03)†	9.59E-01(1.65E-03)
	50	9.99E-01(1.56E-05)‡	8.80E-01(1.07E-04)†	1.00E+00(0.00E+00)‡	9.96E-01(7.54E-05)†	8.98E-01(2.03E-03)†	9.96E-01(1.82E-04)
	200	1.00E+00(0.00E+00)‡	8.87E-01(4.99E-07)†	1.00E+00(1.55E-09)‡	1.00E+00(2.40E-06)‡	9.07E-01(2.11E-03)†	9.98E-01(9.29E-05)
F2	5	7.64E-01(3.27E-04)†	9.85E-01(1.67E-04)†	9.56E-01(4.46E-04)†	9.74E-01(6.96E-04)†	9.65E-01(3.66E-04)†	9.94E-01(9.57E-05)
	25	9.77E-01(1.92E-04)	9.81E-01(1.12E-04)‡	9.99E-01(3.32E-05)‡	7.36E-01(4.61E-03)†	9.48E-01(1.27E-04)†	9.70E-01(1.98E-04)
	50	9.96E-01(1.05E-04)	9.69E-01(8.67E-05)†	9.98E-01(5.51E-05)	6.53E-01(6.03E-03)†	9.42E-01(1.25E-04)†	9.97E-01(4.54E-05)
	200	9.96E-01(9.02E-05)	9.43E-01(8.93E-05)†	9.91E-01(2.07E-04)	3.74E-01(1.06E-02)†	9.32E-01(1.34E-05)†	9.93E-01(1.93E-04)
F3	5	6.79E-01(2.94E-04)†	8.43E-01(5.45E-04)†	9.96E-01(9.08E-06)†	9.39E-01(1.83E-03)†	7.80E-01(8.31E-03)†	9.97E-01(3.59E-04)
	25	9.25E-01(2.46E-03)†	9.53E-01(2.49E-04)†	9.99E-01(1.45E-06)‡	8.12E-01(8.16E-03)†	9.48E-01(1.52E-03)	9.71E-01(7.94E-04)
	50	1.00E+00(5.95E-07)‡	9.45E-01(1.46E-04)†	1.00E+00(1.32E-10)	7.78E-01(9.49E-03)†	9.53E-01(1.08E-03)†	9.98E-01(7.67E-05)
	200	1.00E+00(0.00E+00)	9.30E-01(2.17E-05)†	1.00E+00(0.00E+00)	7.10E-01(9.93E-03)†	9.54E-01(1.23E-03)†	9.99E-01(4.26E-05)
F4	5	5.74E-01(3.12E-03)†	6.32E-01(5.28E-03)	9.39E-01(2.80E-03)‡	8.96E-01(1.83E-03)‡	9.27E-01(3.53E-04)‡	6.70E-01(6.34E-03)
	25	9.31E-01(2.54E-04)‡	9.05E-01(1.25E-03)‡	9.77E-01(8.66E-04)‡	9.13E-01(8.43E-04)‡	9.20E-01(4.05E-04)‡	6.97E-01(3.46E-03)
	50	9.51E-01(1.17E-03)‡	9.24E-01(2.29E-04)‡	9.86E-01(5.37E-04)‡	9.15E-01(5.54E-04)‡	9.26E-01(6.24E-31)‡	6.84E-01(5.36E-03)
	200	9.64E-01(1.42E-03)‡	9.26E-01(6.24E-31)‡	9.84E-01(8.04E-04)‡	9.24E-01(5.39E-05)‡	9.26E-01(6.24E-31)‡	7.17E-01(8.73E-03)
WFG1	5	4.54E-01(9.83E-04)†	3.43E-01(1.46E-04)†	5.92E-01(3.93E-04)†	3.81E-01(8.03E-04)†	4.71E-01(1.05E-03)†	8.34E-01(8.30E-04)
	25	6.67E-01(3.27E-04)†	3.62E-01(7.43E-04)†	7.22E-01(3.39E-04)†	4.08E-01(3.92E-04)†	6.32E-01(3.05E-04)†	8.47E-01(2.74E-04)
	50	7.57E-01(2.91E-04)†	3.44E-01(1.18E-03)†	8.04E-01(4.18E-04)†	4.21E-01(2.15E-04)†	7.47E-01(2.04E-04)†	8.92E-01(4.51E-04)
	200	8.60E-01(4.07E-05)†	3.17E-01(1.21E-04)†	8.94E-01(1.00E-04)†	4.24E-01(4.41E-05)†	8.41E-01(1.57E-04)†	9.04E-01(3.70E-04)
WFG2	5	5.74E-01(6.48E-04)†	4.03E-01(5.13E-04)†	6.29E-01(6.45E-04)†	1.52E-01(1.52E-05)†	6.65E-01(6.72E-04)†	9.87E-01(1.09E-03)
	25	8.05E-01(2.05E-04)†	3.13E-01(1.89E-04)†	8.18E-01(2.41E-04)†	1.53E-01(1.57E-06)†	8.09E-01(1.40E-04)†	9.74E-01(3.49E-04)
	50	8.45E-01(6.41E-05)†	3.05E-01(1.07E-04)†	8.43E-01(6.73E-05)†	1.53E-01(1.13E-06)†	8.45E-01(8.90E-06)†	9.42E-01(3.06E-02)
	200	8.62E-01(2.61E-06)†	3.08E-01(1.57E-05)†	8.54E-01(8.86E-05)†	1.54E-01(6.61E-07)†	8.35E-01(2.36E-06)†	9.63E-01(2.55E-06)
WFG3	5	1.00E+00(6.09E-08)‡	9.90E-01(1.05E-04)†	9.75E-01(1.57E-04)†	4.30E-01(2.23E-05)†	9.99E-01(2.81E-07)	9.95E-01(2.75E-04)
	25	1.00E+00(2.05E-08)‡	9.96E-01(8.19E-07)‡	9.69E-01(2.26E-04)	4.31E-01(9.23E-06)†	9.99E-01(5.25E-07)‡	9.38E-01(5.68E-03)
	50	1.00E+00(1.10E-08)‡	9.97E-01(7.40E-07)	9.70E-01(1.77E-04)†	4.33E-01(6.62E-06)†	9.98E-01(1.21E-06)	9.91E-01(1.22E-03)
	200	1.00E+00(6.53E-10)‡	9.97E-01(1.10E-06)	9.74E-01(1.79E-04)†	4.36E-01(1.46E-08)†	9.33E-01(6.20E-02)	9.97E-01(1.24E-06)
WFG4	5	7.92E-01(1.26E-03)†	9.57E-01(9.38E-04)†	9.13E-01(3.44E-04)†	8.31E-01(3.30E-04)†	9.25E-01(3.53E-04)†	9.99E-01(1.26E-05)
	25	9.58E-01(3.31E-04)†	9.34E-01(4.17E-04)†	9.74E-01(2.37E-04)‡	8.46E-01(1.69E-05)†	9.32E-01(1.75E-05)†	9.67E-01(1.43E-04)
	50	9.80E-01(3.08E-04)†	9.48E-01(2.48E-04)†	9.81E-01(1.92E-04)†	8.46E-01(3.27E-06)†	9.27E-01(9.51E-06)†	9.99E-01(1.25E-05)
	200	9.80E-01(2.16E-04)†	9.62E-01(1.30E-04)†	9.70E-01(1.90E-04)†	8.45E-01(5.39E-07)†	9.26E-01(3.49E-07)†	9.98E-01(1.98E-05)
WFG5	5	7.42E-01(5.91E-04)†	9.64E-01(6.77E-04)†	9.64E-01(1.30E-04)†	6.88E-01(1.90E-05)†	9.65E-01(3.56E-04)†	9.84E-01(1.72E-05)
	25	9.42E-01(2.29E-04)†	9.05E-01(5.94E-04)†	9.77E-01(8.51E-05)‡	6.86E-01(7.17E-05)†	9.29E-01(5.23E-05)†	9.71E-01(8.69E-05)
	50	9.60E-01(1.78E-04)†	9.10E-01(4.92E-04)†	9.75E-01(1.38E-04)†	6.80E-01(1.25E-04)†	9.23E-01(5.80E-06)†	9.87E-01(1.87E-06)
	200	9.75E-01(2.36E-04)†	9.02E-01(1.86E-04)†	9.71E-01(1.94E-04)†	6.70E-01(5.82E-05)†	9.20E-01(4.76E-07)†	9.87E-01(1.95E-06)
WFG6	5	7.41E-01(7.21E-04)†	9.33E-01(9.49E-04)†	9.42E-01(2.10E-04)†	2.96E-01(2.12E-05)†	9.45E-01(4.66E-04)†	9.68E-01(1.28E-04)
	25	9.36E-01(2.33E-04)†	9.04E-01(6.18E-04)†	9.60E-01(2.66E-04)‡	3.02E-01(1.12E-06)†	9.29E-01(6.61E-05)†	9.51E-01(1.59E-04)
	50	9.62E-01(1.41E-04)†	9.17E-01(5.34E-04)†	9.64E-01(1.81E-04)†	3.03E-01(2.77E-06)†	9.18E-01(2.08E-04)†	9.74E-01(9.76E-05)
	200	9.62E-01(1.45E-04)†	9.32E-01(4.85E-04)†	9.61E-01(2.64E-04)†	3.03E-01(1.64E-06)†	9.16E-01(5.97E-05)†	9.77E-01(9.16E-05)
WFG7	5	9.75E-01(2.97E-04)	9.31E-01(5.44E-04)†	9.89E-01(1.12E-04)‡	9.86E-01(3.99E-04)‡	9.81E-01(2.49E-04)‡	9.67E-01(2.98E-04)
	25	9.78E-01(1.32E-04)‡	9.53E-01(1.36E-04)	9.94E-01(3.53E-05)‡	9.78E-01(2.91E-04)‡	9.28E-01(2.63E-05)†	9.52E-01(2.47E-04)
	50	9.69E-01(8.12E-05)	9.56E-01(4.44E-05)†	9.88E-01(1.14E-04)‡	9.67E-01(2.41E-04)	9.26E-01(4.00E-12)†	9.68E-01(3.05E-04)
	200	9.65E-01(5.37E-05)	9.72E-01(1.29E-04)	9.88E-01(9.80E-05)‡	9.30E-01(3.22E-05)†	9.26E-01(6.24E-31)†	9.68E-01(2.33E-04)
WFG8	5	9.74E-01(3.00E-04)‡	9.37E-01(8.74E-04)†	9.92E-01(8.59E-05)‡	9.84E-01(9.93E-04)‡	9.80E-01(2.00E-04)†	9.66E-01(2.87E-04)
	25	9.78E-01(1.31E-04)‡	9.50E-01(1.36E-04)	9.89E-01(1.07E-04)‡	9.82E-01(2.45E-04)‡	9.28E-01(3.04E-05)†	9.51E-01(2.25E-04)
	50	9.70E-01(4.84E-05)	9.58E-01(7.22E-05)†	9.90E-01(8.18E-05)‡	9.72E-01(3.00E-04)	9.26E-01(5.48E-06)†	9.66E-01(2.21E-04)
	200	9.64E-01(4.98E-05)	9.71E-01(1.42E-04)	9.89E-01(1.02E-04)‡	9.32E-01(4.14E-05)†	9.26E-01(6.24E-31)†	9.69E-01(2.40E-04)
WFG9	5	6.00E-01(1.55E-02)†	7.55E-01(6.47E-03)	8.76E-01(9.56E-05)‡	9.34E-01(4.45E-03)‡	8.68E-01(3.50E-04)‡	7.53E-01(9.90E-03)
	25	7.46E-01(1.11E-02)	8.09E-01(2.14E-03)‡	8.83E-01(1.09E-04)‡	9.39E-01(2.10E-03)‡	8.42E-01(4.87E-04)‡	7.31E-01(1.09E-02)
	50	7.70E-01(6.50E-03)‡	8.16E-01(1.98E-03)‡	8.82E-01(1.90E-04)‡	9.37E-01(2.10E-03)‡	8.37E-01(4.18E-04)‡	7.22E-01(8.01E-03)
	200	8.23E-01(2.76E-03)‡	8.35E-01(5.52E-04)‡	9.24E-01(1.98E-03)‡	9.27E-01(9.61E-04)‡	8.31E-01(4.06E-05)‡	7.65E-01(3.65E-03)

TABLE 43
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 7 TO 6 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.98E-01(1.21E-06)†	9.29E-01(4.82E-03)†	1.00E+00(7.88E-09)†	1.00E+00(2.69E-11)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(2.35E-08)‡	9.27E-01(2.43E-03)†	1.00E+00(7.64E-10)‡	9.89E-01(3.39E-04)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.84E-01(4.00E-04)†	1.00E+00(1.21E-09)‡	1.00E+00(1.33E-06)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(4.14E-08)‡	9.99E-01(4.49E-05)†	1.00E+00(1.43E-10)‡	1.00E+00(3.46E-07)
F2	5	8.81E-01(5.54E-04)†	1.00E+00(0.00E+00)‡	1.00E+00(4.76E-08)‡	9.70E-01(1.75E-03)†	1.00E+00(1.16E-09)	9.98E-01(5.07E-05)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(6.58E-10)‡	9.13E-01(3.26E-03)†	1.00E+00(1.72E-12)‡	9.76E-01(1.19E-04)
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(5.68E-09)†	8.85E-01(5.85E-03)†	1.00E+00(3.23E-14)	1.00E+00(3.23E-14)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(4.23E-09)†	8.65E-01(6.92E-03)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
F3	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.94E-01(9.93E-06)†	8.89E-01(4.55E-03)†	1.00E+00(1.68E-08)‡	9.98E-01(7.21E-05)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.99E-01(3.70E-06)	7.67E-01(4.65E-03)†	1.00E+00(6.35E-10)‡	9.90E-01(3.11E-04)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(1.45E-07)	8.90E-01(1.22E-02)†	1.00E+00(8.13E-11)‡	1.00E+00(1.27E-11)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(4.16E-09)	9.88E-01(1.83E-03)†	1.00E+00(2.24E-09)†	1.00E+00(5.16E-13)
F4	5	7.15E-01(7.22E-03)	7.59E-01(8.07E-03)	9.98E-01(3.80E-05)‡	9.97E-01(6.80E-05)‡	1.00E+00(1.37E-11)‡	7.56E-01(8.27E-03)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.99E-01(6.56E-07)‡	9.81E-01(1.37E-04)‡	1.00E+00(0.00E+00)‡	7.59E-01(4.44E-03)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(4.73E-07)‡	9.72E-01(3.84E-04)‡	1.00E+00(0.00E+00)‡	7.74E-01(8.94E-03)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(6.23E-07)‡	9.46E-01(7.83E-04)‡	1.00E+00(0.00E+00)‡	7.49E-01(8.39E-03)
WFG1	5	5.60E-01(1.01E-03)†	4.06E-01(2.40E-04)†	6.46E-01(5.29E-04)†	3.89E-01(1.01E-03)†	5.40E-01(1.37E-03)†	8.81E-01(8.27E-04)
	25	8.13E-01(3.38E-04)†	4.50E-01(7.14E-04)†	8.16E-01(6.29E-04)†	4.16E-01(8.54E-04)†	7.45E-01(5.91E-04)†	9.12E-01(2.39E-04)
	50	9.16E-01(2.80E-04)†	4.34E-01(1.55E-03)†	9.01E-01(3.41E-04)†	4.55E-01(2.12E-04)†	8.90E-01(3.55E-04)†	9.55E-01(1.45E-04)
	200	9.83E-01(2.72E-05)‡	4.41E-01(5.72E-04)†	9.64E-01(9.87E-05)‡	4.55E-01(1.21E-04)†	9.57E-01(1.56E-04)	9.55E-01(2.06E-04)
WFG2	5	6.56E-01(7.77E-04)†	5.09E-01(1.48E-03)†	7.14E-01(7.03E-04)†	1.64E-01(1.14E-05)†	7.61E-01(6.82E-04)†	9.94E-01(1.70E-04)
	25	9.84E-01(8.61E-05)	4.55E-01(5.31E-04)†	9.77E-01(1.24E-04)	1.68E-01(2.77E-05)†	9.52E-01(2.74E-04)†	9.82E-01(3.10E-05)
	50	9.97E-01(5.74E-06)‡	4.66E-01(2.97E-04)†	9.90E-01(6.33E-05)‡	1.68E-01(2.63E-05)†	9.54E-01(1.23E-03)	9.46E-01(3.09E-02)
	200	9.96E-01(7.83E-05)‡	4.84E-01(2.24E-04)†	9.88E-01(1.24E-04)‡	1.68E-01(4.54E-06)†	8.99E-01(2.05E-03)†	9.70E-01(4.26E-05)
WFG3	5	9.99E-01(1.89E-06)‡	9.90E-01(9.09E-05)†	9.55E-01(5.31E-04)†	4.61E-01(2.60E-05)†	9.98E-01(1.76E-06)‡	9.96E-01(1.02E-04)
	25	9.97E-01(3.72E-05)‡	9.96E-01(2.84E-06)‡	9.44E-01(1.10E-03)	4.66E-01(3.97E-06)†	9.96E-01(1.94E-06)‡	9.38E-01(4.59E-03)
	50	9.88E-01(3.60E-04)	9.96E-01(2.02E-06)†	8.97E-01(5.51E-03)†	4.67E-01(6.88E-07)†	9.96E-01(3.93E-06)	9.97E-01(3.99E-06)
	200	9.07E-01(7.95E-03)†	9.95E-01(2.68E-06)†	7.82E-01(8.07E-03)†	4.67E-01(4.01E-06)†	9.29E-01(6.15E-02)†	9.96E-01(1.04E-06)
WFG4	5	9.28E-01(1.26E-03)†	8.52E-01(4.13E-03)†	9.82E-01(2.83E-05)†	8.59E-01(2.15E-04)†	9.96E-01(4.33E-05)†	1.00E+00(1.25E-08)
	25	1.00E+00(5.99E-08)†	8.26E-01(8.59E-04)†	9.86E-01(1.69E-05)	8.57E-01(6.70E-05)†	1.00E+00(3.07E-11)‡	9.83E-01(7.11E-05)
	50	1.00E+00(1.66E-07)	8.34E-01(8.76E-04)†	9.85E-01(2.84E-05)†	8.57E-01(2.82E-05)†	1.00E+00(2.72E-12)†	1.00E+00(8.37E-12)
	200	9.99E-01(9.87E-07)†	8.70E-01(4.38E-04)†	9.86E-01(3.35E-05)†	8.55E-01(3.44E-05)†	1.00E+00(9.03E-14)	1.00E+00(6.24E-14)
WFG5	5	8.68E-01(8.20E-04)†	9.19E-01(2.17E-03)†	9.77E-01(9.99E-06)†	7.46E-01(2.77E-05)†	9.89E-01(1.14E-07)†	9.89E-01(1.61E-07)
	25	9.90E-01(8.99E-08)‡	8.39E-01(4.69E-04)†	9.77E-01(2.51E-05)‡	7.38E-01(4.38E-05)†	9.90E-01(1.14E-08)‡	9.73E-01(7.61E-05)
	50	9.90E-01(1.04E-07)	8.38E-01(5.85E-04)†	9.76E-01(2.40E-05)†	7.33E-01(5.35E-05)†	9.90E-01(4.80E-08)†	9.90E-01(8.01E-10)
	200	9.89E-01(1.15E-06)†	8.74E-01(2.08E-04)†	9.76E-01(2.10E-05)†	7.31E-01(3.41E-05)†	9.91E-01(1.86E-07)‡	9.90E-01(9.98E-10)
WFG6	5	8.62E-01(6.98E-04)†	8.12E-01(3.32E-03)†	9.72E-01(4.84E-05)†	3.25E-01(5.78E-06)†	8.90E-01(7.28E-03)†	9.76E-01(1.24E-04)
	25	9.84E-01(3.54E-05)‡	7.91E-01(2.37E-04)†	9.77E-01(6.56E-05)‡	3.27E-01(3.10E-06)†	8.96E-01(7.54E-03)	9.60E-01(1.77E-04)
	50	9.90E-01(2.59E-05)‡	8.06E-01(2.47E-04)†	9.78E-01(7.19E-05)	3.28E-01(3.87E-06)†	8.84E-01(7.21E-03)†	9.80E-01(3.77E-05)
	200	9.88E-01(7.58E-05)‡	8.26E-01(3.79E-04)†	9.72E-01(9.43E-05)†	3.27E-01(1.40E-06)†	8.98E-01(7.87E-03)†	9.81E-01(3.95E-05)
WFG7	5	1.00E+00(2.82E-07)g	8.36E-01(1.99E-03)†	9.93E-01(8.55E-06)†	9.94E-01(1.40E-05)†	1.00E+00(6.25E-10)†	1.00E+00(2.84E-10)
	25	1.00E+00(2.68E-07)†	8.67E-01(4.42E-04)†	9.85E-01(4.04E-05)	9.92E-01(6.96E-05)†	1.00E+00(1.49E-11)‡	9.81E-01(6.22E-05)
	50	1.00E+00(4.48E-07)†	8.69E-01(8.31E-04)†	9.82E-01(8.12E-05)†	9.92E-01(1.32E-04)†	1.00E+00(7.16E-12)†	1.00E+00(2.79E-12)
	200	9.96E-01(3.85E-05)†	9.07E-01(5.43E-04)†	9.79E-01(4.68E-05)†	9.36E-01(1.07E-03)†	1.00E+00(1.99E-12)†	1.00E+00(0.00E+00)
WFG8	5	1.00E+00(2.35E-09)	8.42E-01(1.32E-03)†	9.94E-01(3.60E-06)†	9.89E-01(2.48E-04)†	1.00E+00(1.59E-09)†	1.00E+00(2.25E-12)
	25	1.00E+00(6.20E-08)†	8.65E-01(1.79E-04)†	9.85E-01(4.84E-05)	9.91E-01(1.10E-04)†	1.00E+00(2.54E-11)‡	9.82E-01(9.57E-05)
	50	9.99E-01(1.12E-06)†	8.73E-01(3.45E-04)†	9.81E-01(5.02E-05)†	9.88E-01(1.19E-04)†	1.00E+00(2.48E-12)†	1.00E+00(9.03E-14)
	200	9.96E-01(2.66E-05)†	9.06E-01(4.12E-04)†	9.78E-01(3.77E-05)†	9.41E-01(9.52E-04)†	1.00E+00(1.10E-12)†	1.00E+00(0.00E+00)
WFG9	5	6.66E-01(1.76E-02)†	7.10E-01(5.46E-03)†	8.84E-01(3.95E-06)‡	9.67E-01(1.63E-03)‡	8.55E-01(2.23E-03)‡	7.97E-01(8.58E-03)
	25	7.96E-01(8.26E-03)	7.59E-01(9.55E-04)	9.10E-01(8.96E-04)‡	9.75E-01(5.61E-04)‡	8.64E-01(1.87E-03)‡	7.83E-01(1.13E-02)
	50	8.23E-01(6.48E-03)‡	7.58E-01(9.98E-04)	9.63E-01(5.82E-04)‡	9.70E-01(4.67E-04)‡	8.66E-01(1.96E-03)‡	7.81E-01(8.24E-03)
	200	8.89E-01(2.10E-03)‡	7.82E-01(4.85E-04)†	9.71E-01(3.34E-04)‡	9.75E-01(3.45E-04)‡	8.47E-01(1.95E-03)	8.27E-01(3.37E-03)

TABLE 44
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 6 TO 5 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.95E-01(9.72E-06)†	9.23E-01(4.48E-03)†	1.00E+00(1.08E-07)†	1.00E+00(1.14E-10)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(2.21E-08)‡	9.18E-01(4.61E-03)†	1.00E+00(5.51E-09)‡	9.94E-01(1.03E-04)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(1.58E-12)‡	9.67E-01(2.40E-03)†	1.00E+00(6.21E-09)†	1.00E+00(1.39E-10)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(1.00E-07)‡	9.99E-01(5.93E-05)	1.00E+00(7.35E-09)†	1.00E+00(1.47E-09)
F2	5	9.84E-01(1.31E-04)†	1.00E+00(0.00E+00)‡	1.00E+00(4.20E-08)‡	9.24E-01(5.33E-03)†	1.00E+00(9.75E-10)	9.99E-01(4.13E-05)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(3.52E-11)‡	8.60E-01(3.40E-03)†	1.00E+00(2.28E-13)‡	9.86E-01(6.85E-05)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(2.19E-10)†	8.87E-01(3.58E-03)†	1.00E+00(0.00E+00)‡	1.00E+00(4.47E-13)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(2.13E-09)†	8.39E-01(3.08E-03)†	1.00E+00(0.00E+00)	1.00E+00(5.16E-13)
F3	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.87E-01(6.23E-05)†	8.54E-01(4.59E-03)†	1.00E+00(1.01E-08)†	1.00E+00(2.69E-11)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(7.48E-08)‡	7.94E-01(2.69E-03)†	1.00E+00(7.84E-08)‡	9.96E-01(3.32E-05)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.99E-01(8.19E-03)†	1.00E+00(1.75E-08)†	1.00E+00(1.35E-10)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.63E-01(5.21E-03)†	1.00E+00(4.34E-09)†	1.00E+00(4.05E-12)
F4	5	9.25E-01(3.56E-03)‡	9.24E-01(6.77E-03)‡	1.00E+00(2.70E-07)‡	1.00E+00(0.00E+00)‡	1.00E+00(1.49E-11)‡	8.13E-01(8.18E-03)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(2.89E-07)‡	1.00E+00(1.13E-06)‡	1.00E+00(0.00E+00)‡	8.00E-01(5.51E-03)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(3.71E-07)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	7.89E-01(1.16E-02)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.99E-01(1.70E-06)‡	9.99E-01(6.24E-05)‡	1.00E+00(0.00E+00)‡	7.81E-01(1.12E-02)
WFG1	5	6.72E-01(8.84E-04)†	5.04E-01(7.54E-04)†	6.80E-01(7.07E-04)†	4.19E-01(1.35E-03)†	6.43E-01(1.26E-03)†	9.36E-01(3.97E-04)
	25	8.93E-01(3.38E-04)†	5.27E-01(1.24E-03)†	8.50E-01(7.30E-04)†	4.62E-01(1.00E-03)†	8.15E-01(9.43E-04)†	9.54E-01(1.01E-04)
	50	9.39E-01(2.77E-04)†	5.13E-01(1.58E-03)†	8.99E-01(3.33E-04)†	4.98E-01(2.02E-04)†	8.73E-01(1.54E-03)†	9.76E-01(5.46E-05)
	200	9.52E-01(1.34E-04)†	4.97E-01(3.13E-04)†	9.33E-01(3.01E-04)†	4.97E-01(1.58E-04)†	9.13E-01(5.71E-04)†	9.77E-01(7.83E-05)
WFG2	5	7.66E-01(1.04E-03)†	5.63E-01(3.91E-04)†	8.40E-01(4.89E-04)†	1.76E-01(1.62E-05)†	8.41E-01(7.67E-04)†	9.99E-01(2.82E-06)
	25	9.77E-01(6.78E-04)	5.15E-01(5.46E-04)†	9.64E-01(6.42E-04)†	1.76E-01(6.20E-06)†	9.41E-01(1.17E-03)‡	9.88E-01(1.64E-05)
	50	9.68E-01(8.52E-04)	5.12E-01(4.29E-04)†	9.58E-01(7.59E-04)†	1.76E-01(7.83E-06)†	9.25E-01(2.52E-03)†	9.53E-01(3.13E-02)
	200	9.55E-01(1.06E-03)†	5.24E-01(3.94E-04)†	9.55E-01(9.48E-04)†	1.79E-01(7.05E-06)†	9.21E-01(2.42E-03)†	9.79E-01(2.81E-05)
WFG3	5	8.56E-01(1.45E-02)†	8.54E-01(1.49E-02)†	8.03E-01(1.26E-02)†	4.86E-01(2.06E-05)†	8.76E-01(1.60E-02)†	9.91E-01(4.66E-04)
	25	8.86E-01(1.40E-02)†	8.87E-01(1.47E-02)†	7.95E-01(1.03E-02)†	4.85E-01(1.35E-05)†	8.57E-01(1.54E-02)†	9.85E-01(5.08E-04)
	50	8.69E-01(1.32E-02)†	8.86E-01(1.41E-02)†	7.66E-01(9.52E-03)†	4.87E-01(6.07E-06)†	8.98E-01(1.39E-02)†	9.99E-01(2.31E-06)
	200	8.15E-01(1.28E-02)†	9.02E-01(1.39E-02)†	7.26E-01(4.60E-03)†	4.86E-01(1.74E-05)†	8.61E-01(6.33E-02)†	9.98E-01(2.37E-06)
WFG4	5	9.99E-01(5.79E-06)	8.70E-01(1.76E-03)†	9.78E-01(2.24E-05)†	8.66E-01(3.27E-04)†	1.00E+00(1.27E-10)‡	1.00E+00(1.80E-06)
	25	1.00E+00(4.64E-07)‡	8.77E-01(7.85E-04)†	9.81E-01(3.19E-05)†	8.71E-01(8.71E-06)†	1.00E+00(5.52E-11)‡	9.93E-01(3.67E-05)
	50	9.99E-01(1.82E-06)†	8.99E-01(6.36E-04)†	9.80E-01(3.43E-05)†	8.69E-01(1.36E-05)†	1.00E+00(7.66E-12)†	1.00E+00(2.85E-12)
	200	9.97E-01(1.34E-05)†	9.28E-01(3.35E-04)†	9.81E-01(5.30E-05)†	8.74E-01(2.43E-06)†	1.00E+00(2.65E-13)	1.00E+00(2.06E-13)
WFG5	5	9.76E-01(1.83E-04)†	8.75E-01(1.74E-03)†	9.70E-01(2.86E-05)†	8.20E-01(3.73E-05)†	9.88E-01(2.42E-07)†	9.88E-01(1.77E-07)
	25	9.88E-01(1.79E-07)‡	8.84E-01(8.49E-04)†	9.71E-01(2.01E-05)†	8.05E-01(3.08E-04)†	9.89E-01(2.61E-07)‡	9.79E-01(5.81E-05)
	50	9.88E-01(4.22E-07)†	9.07E-01(6.32E-04)†	9.72E-01(2.53E-05)†	7.86E-01(5.08E-04)†	9.90E-01(2.07E-07)‡	9.89E-01(1.82E-07)
	200	9.87E-01(1.01E-05)†	9.37E-01(1.60E-04)†	9.73E-01(2.96E-05)†	7.88E-01(2.59E-04)†	9.92E-01(1.03E-08)‡	9.89E-01(1.41E-10)
WFG6	5	8.69E-01(7.39E-03)†	6.49E-01(8.47E-03)†	8.68E-01(7.94E-03)†	3.58E-01(7.07E-06)†	9.00E-01(7.97E-03)†	9.75E-01(1.74E-04)
	25	8.85E-01(8.32E-03)	7.63E-01(8.66E-03)†	8.96E-01(6.78E-03)†	3.60E-01(6.62E-06)†	9.19E-01(8.34E-03)	9.68E-01(1.10E-04)
	50	8.86E-01(9.06E-03)†	7.91E-01(9.36E-03)†	8.75E-01(8.31E-03)†	3.59E-01(6.89E-06)†	8.77E-01(8.98E-03)†	9.80E-01(2.79E-05)
	200	9.09E-01(9.22E-03)	8.19E-01(9.33E-03)†	8.93E-01(7.49E-03)†	3.59E-01(1.45E-06)†	9.12E-01(8.37E-03)†	9.81E-01(3.33E-05)
WFG7	5	1.00E+00(2.36E-07)	8.79E-01(1.69E-03)†	9.84E-01(2.24E-05)†	9.93E-01(9.36E-06)†	1.00E+00(2.16E-09)†	1.00E+00(7.70E-13)
	25	9.98E-01(1.69E-05)†	9.34E-01(1.22E-04)†	9.74E-01(6.90E-05)†	9.97E-01(5.35E-06)†	1.00E+00(5.75E-11)‡	9.88E-01(7.30E-05)
	50	9.96E-01(3.63E-05)†	9.38E-01(4.07E-04)†	9.77E-01(5.92E-05)†	9.97E-01(1.40E-06)†	1.00E+00(2.91E-11)†	1.00E+00(1.38E-12)
	200	9.90E-01(5.23E-05)†	9.66E-01(2.00E-04)†	9.77E-01(5.88E-05)†	9.92E-01(9.21E-06)†	1.00E+00(3.91E-07)†	1.00E+00(0.00E+00)
WFG8	5	1.00E+00(1.19E-07)†	8.81E-01(1.10E-03)†	9.83E-01(3.04E-05)†	9.91E-01(7.43E-05)†	1.00E+00(6.24E-09)†	1.00E+00(5.65E-12)
	25	9.98E-01(1.85E-05)†	9.36E-01(1.92E-04)†	9.72E-01(5.56E-05)†	9.97E-01(1.03E-06)†	1.00E+00(4.78E-11)‡	9.88E-01(1.27E-04)
	50	9.93E-01(6.54E-05)†	9.37E-01(1.23E-04)†	9.75E-01(3.82E-05)†	9.97E-01(1.25E-06)†	1.00E+00(4.38E-11)†	1.00E+00(2.28E-13)
	200	9.89E-01(4.04E-05)†	9.65E-01(2.41E-04)†	9.76E-01(5.04E-05)†	9.92E-01(8.54E-05)†	1.00E+00(1.43E-07)†	1.00E+00(0.00E+00)
WFG9	5	6.74E-01(1.95E-02)†	7.02E-01(7.95E-03)†	8.44E-01(2.52E-03)	9.62E-01(9.65E-04)‡	8.72E-01(2.14E-03)‡	8.31E-01(4.70E-03)
	25	8.11E-01(8.89E-03)	7.71E-01(3.04E-03)†	8.91E-01(4.08E-03)‡	9.85E-01(3.99E-04)‡	8.58E-01(3.13E-03)‡	8.25E-01(6.91E-03)
	50	8.37E-01(6.92E-03)‡	7.82E-01(2.51E-03)	9.38E-01(3.60E-03)‡	9.82E-01(5.85E-04)‡	8.71E-01(2.81E-03)‡	8.16E-01(5.80E-03)
	200	8.78E-01(5.27E-03)‡	8.22E-01(4.33E-03)	9.34E-01(3.49E-03)‡	9.86E-01(3.94E-04)‡	8.64E-01(3.55E-03)‡	8.37E-01(4.70E-03)

TABLE 45
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 5 TO 4 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.93E-01(2.04E-05)†	8.70E-01(7.28E-04)†	1.00E+00(7.74E-08)†	1.00E+00(1.96E-10)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.77E-01(1.90E-03)†	1.00E+00(4.91E-09)‡	9.87E-01(1.80E-04)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.40E-01(3.22E-03)†	1.00E+00(1.90E-08)†	1.00E+00(2.05E-10)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(6.63E-07)†	1.00E+00(5.47E-08)†	1.00E+00(2.78E-09)
F2	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(3.01E-08)†	9.06E-01(7.65E-03)†	1.00E+00(1.00E-09)	1.00E+00(8.62E-09)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	6.14E-01(4.70E-02)†	1.00E+00(2.12E-12)‡	9.94E-01(1.29E-05)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	6.62E-01(3.24E-02)†	1.00E+00(0.00E+00)‡	1.00E+00(5.43E-12)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	5.88E-01(1.02E-02)†	1.00E+00(0.00E+00)‡	1.00E+00(1.83E-13)
F3	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.78E-01(1.29E-04)†	8.33E-01(2.85E-03)†	1.00E+00(2.67E-08)†	1.00E+00(2.66E-11)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.12E-01(5.92E-03)†	1.00E+00(2.87E-08)‡	9.97E-01(1.87E-05)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.27E-01(5.48E-03)†	1.00E+00(1.00E-08)†	1.00E+00(3.12E-12)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	9.88E-01(1.43E-03)†	1.00E+00(1.11E-07)†	1.00E+00(3.16E-13)
F4	5	9.97E-01(2.17E-04)‡	9.85E-01(1.65E-03)‡	9.99E-01(2.61E-07)‡	1.00E+00(0.00E+00)‡	1.00E+00(1.74E-11)‡	8.70E-01(7.08E-03)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(2.29E-07)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.68E-01(6.02E-03)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(1.49E-06)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.59E-01(7.60E-03)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(2.12E-07)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.62E-01(1.49E-02)
WFG1	5	7.89E-01(1.04E-03)†	6.45E-01(7.38E-04)†	7.24E-01(5.59E-04)†	4.73E-01(1.55E-03)†	7.66E-01(1.06E-03)†	9.92E-01(1.93E-04)
	25	9.15E-01(4.25E-04)†	6.34E-01(1.10E-03)†	8.46E-01(7.23E-04)†	5.21E-01(1.04E-03)†	8.25E-01(2.41E-03)†	9.91E-01(4.87E-05)
	50	9.23E-01(3.73E-04)†	5.96E-01(2.21E-03)†	8.75E-01(4.28E-04)†	5.62E-01(2.90E-04)†	8.43E-01(1.31E-03)†	9.89E-01(2.54E-05)
	200	9.53E-01(1.30E-04)†	5.69E-01(2.69E-04)†	9.37E-01(2.69E-04)†	5.60E-01(1.42E-04)†	9.31E-01(3.74E-04)†	9.91E-01(3.14E-05)
WFG2	5	9.44E-01(6.20E-04)†	6.69E-01(2.24E-04)†	9.47E-01(3.29E-04)†	1.95E-01(6.11E-05)†	9.16E-01(4.90E-04)†	9.99E-01(1.95E-06)
	25	9.91E-01(7.54E-05)	6.03E-01(2.01E-04)†	9.81E-01(9.93E-05)†	1.96E-01(2.34E-05)†	9.65E-01(1.60E-03)†	9.91E-01(1.93E-05)
	50	9.89E-01(5.44E-05)	6.04E-01(8.66E-05)†	9.79E-01(1.09E-04)‡	1.97E-01(2.57E-05)†	9.56E-01(2.06E-03)	9.57E-01(3.16E-02)
	200	9.85E-01(7.17E-05)	6.15E-01(1.89E-05)†	9.81E-01(1.14E-04)	2.00E-01(8.72E-06)†	9.82E-01(9.11E-04)†	9.85E-01(1.82E-05)
WFG3	5	9.97E-01(8.84E-06)†	9.84E-01(9.14E-05)†	8.26E-01(3.77E-03)†	5.06E-01(2.79E-05)†	9.79E-01(1.18E-03)†	1.00E+00(4.77E-07)
	25	9.63E-01(9.52E-04)†	9.92E-01(7.35E-06)†	8.55E-01(3.44E-03)†	5.03E-01(9.34E-05)†	9.45E-01(6.48E-03)†	9.99E-01(3.63E-06)
	50	9.24E-01(1.71E-03)†	9.91E-01(9.83E-06)†	8.78E-01(2.92E-03)†	4.98E-01(8.22E-05)†	9.53E-01(6.32E-03)†	1.00E+00(1.07E-06)
	200	8.76E-01(2.24E-03)†	9.86E-01(2.75E-06)†	8.69E-01(3.14E-03)†	4.95E-01(6.71E-06)†	8.65E-01(6.19E-02)†	1.00E+00(2.28E-07)
WFG4	5	1.00E+00(7.13E-07)†	9.39E-01(1.39E-03)†	9.64E-01(4.04E-05)†	8.61E-01(1.66E-06)†	1.00E+00(2.00E-10)†	1.00E+00(4.85E-11)
	25	9.99E-01(2.51E-06)‡	9.55E-01(4.10E-04)†	9.75E-01(2.29E-05)†	8.55E-01(2.08E-05)†	1.00E+00(8.84E-11)‡	9.97E-01(9.54E-06)
	50	9.98E-01(4.29E-06)†	9.73E-01(3.63E-04)†	9.78E-01(3.58E-05)†	8.57E-01(1.87E-05)†	1.00E+00(1.13E-11)†	1.00E+00(8.71E-12)
	200	9.94E-01(2.14E-05)†	9.91E-01(1.18E-04)†	9.83E-01(2.72E-05)†	8.60E-01(8.69E-06)†	1.00E+00(1.19E-11)†	1.00E+00(2.92E-12)
WFG5	5	9.87E-01(1.86E-07)‡	9.31E-01(6.20E-04)†	9.51E-01(7.55E-05)†	9.03E-01(4.53E-05)†	9.85E-01(1.02E-06)†	9.86E-01(2.00E-07)
	25	9.86E-01(7.33E-07)‡	9.75E-01(2.54E-04)†	9.65E-01(5.78E-05)†	8.98E-01(4.07E-05)†	9.88E-01(3.76E-07)‡	9.83E-01(1.24E-05)
	50	9.86E-01(5.76E-07)†	9.83E-01(9.25E-05)†	9.69E-01(5.04E-05)†	8.92E-01(5.14E-05)†	9.90E-01(3.50E-07)‡	9.87E-01(4.10E-11)
	200	9.85E-01(9.05E-06)†	9.86E-01(1.26E-07)†	9.71E-01(4.31E-05)†	8.88E-01(5.19E-05)†	9.92E-01(2.15E-08)‡	9.87E-01(4.59E-31)
WFG6	5	9.79E-01(7.68E-05)	8.57E-01(1.34E-03)†	9.46E-01(1.96E-04)†	4.02E-01(1.05E-05)†	8.65E-01(9.41E-03)†	9.72E-01(3.81E-04)
	25	9.71E-01(1.27E-04)†	9.46E-01(1.52E-04)†	9.58E-01(8.96E-05)†	4.04E-01(1.41E-05)†	8.47E-01(9.82E-03)†	9.78E-01(5.88E-05)
	50	9.76E-01(8.06E-05)	9.60E-01(1.52E-04)†	9.66E-01(8.11E-05)†	4.05E-01(1.63E-05)†	8.66E-01(1.01E-02)†	9.80E-01(2.87E-05)
	200	9.81E-01(7.48E-05)	9.98E-01(1.33E-07)‡	9.72E-01(5.21E-05)†	4.01E-01(5.42E-06)†	8.70E-01(1.09E-02)†	9.81E-01(3.42E-05)
WFG7	5	9.98E-01(2.52E-05)†	9.55E-01(1.01E-03)†	9.68E-01(7.41E-05)†	9.90E-01(2.00E-05)†	1.00E+00(8.69E-08)†	1.00E+00(7.70E-13)
	25	9.95E-01(5.84E-05)	9.95E-01(7.25E-05)	9.70E-01(7.26E-05)†	9.88E-01(2.92E-05)†	1.00E+00(8.55E-10)‡	9.94E-01(2.99E-05)
	50	9.91E-01(4.87E-05)†	9.97E-01(4.91E-07)†	9.73E-01(5.53E-05)†	9.87E-01(1.20E-05)†	1.00E+00(1.93E-09)†	1.00E+00(3.12E-12)
	200	9.86E-01(4.88E-05)†	9.98E-01(2.14E-07)†	9.77E-01(6.24E-05)†	9.88E-01(9.33E-06)†	9.99E-01(1.09E-06)†	1.00E+00(3.23E-14)
WFG8	5	9.99E-01(3.39E-06)†	9.58E-01(8.16E-04)†	9.68E-01(7.27E-05)†	9.90E-01(3.42E-05)†	1.00E+00(4.00E-07)†	1.00E+00(4.92E-12)
	25	9.96E-01(4.70E-05)	9.88E-01(3.55E-04)†	9.67E-01(5.18E-05)†	9.88E-01(2.81E-05)†	1.00E+00(1.30E-09)	9.98E-01(1.12E-05)
	50	9.91E-01(4.58E-05)†	9.97E-01(5.84E-07)†	9.69E-01(4.13E-05)†	9.89E-01(2.77E-05)†	1.00E+00(2.35E-09)†	1.00E+00(2.06E-13)
	200	9.86E-01(3.82E-05)†	9.98E-01(1.54E-07)†	9.77E-01(6.87E-05)†	9.87E-01(1.67E-05)†	1.00E+00(7.88E-07)†	1.00E+00(0.00E+00)
WFG9	5	7.57E-01(1.04E-02)†	7.94E-01(3.34E-03)†	8.73E-01(6.30E-06)	9.36E-01(9.82E-04)‡	8.26E-01(4.92E-03)	8.42E-01(3.22E-03)
	25	8.54E-01(2.77E-03)	8.85E-01(5.34E-06)	9.34E-01(1.89E-03)‡	9.76E-01(5.66E-04)‡	8.51E-01(4.51E-03)	8.57E-01(2.44E-03)
	50	8.85E-01(6.72E-04)‡	8.89E-01(2.30E-04)‡	9.70E-01(9.74E-05)‡	9.76E-01(7.40E-04)‡	8.44E-01(4.69E-03)	8.43E-01(3.14E-03)
	200	9.15E-01(1.95E-03)‡	9.14E-01(1.52E-03)‡	9.74E-01(3.67E-04)‡	9.82E-01(4.52E-04)‡	8.43E-01(5.28E-03)	8.65E-01(2.40E-03)

TABLE 46
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 4 TO 3 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.76E-01(7.30E-04)†	8.98E-01(7.13E-03)†	9.99E-01(5.85E-07)†	1.00E+00(2.51E-10)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.66E-01(4.17E-03)†	1.00E+00(3.91E-08)	9.97E-01(3.29E-05)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.86E-01(2.62E-04)†	1.00E+00(1.01E-07)†	1.00E+00(2.71E-10)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.99E-01(4.50E-06)	1.00E+00(2.24E-08)†	1.00E+00(2.49E-10)
F2	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(3.31E-08)†	8.75E-01(6.59E-03)†	1.00E+00(1.87E-10)	1.00E+00(1.40E-09)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.17E-01(1.46E-06)†	1.00E+00(1.67E-11)‡	9.99E-01(6.75E-07)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.17E-01(1.45E-06)†	1.00E+00(1.99E-12)	1.00E+00(3.04E-11)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(1.07E-06)†	8.17E-01(1.25E-07)†	1.00E+00(0.00E+00)‡	1.00E+00(3.29E-11)
F3	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.52E-01(2.46E-03)†	8.15E-01(3.44E-03)†	1.00E+00(9.24E-08)†	1.00E+00(6.29E-11)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.02E-01(6.28E-03)†	1.00E+00(7.74E-09)‡	9.99E-01(8.57E-07)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.67E-01(1.21E-02)†	1.00E+00(9.08E-09)†	1.00E+00(3.31E-11)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.33E-01(2.95E-03)†	1.00E+00(3.22E-09)†	1.00E+00(4.65E-12)
F4	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.99E-01(1.31E-06)	1.00E+00(5.61E-13)‡	1.00E+00(5.48E-11)‡	9.54E-01(5.81E-03)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(4.91E-08)‡	1.00E+00(1.18E-12)‡	1.00E+00(2.12E-12)‡	9.00E-01(7.90E-03)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(4.97E-07)‡	1.00E+00(0.00E+00)‡	1.00E+00(3.72E-12)‡	9.54E-01(5.86E-03)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.99E-01(1.02E-05)	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.45E-01(6.78E-03)
WFG1	5	8.96E-01(6.46E-04)†	7.87E-01(5.19E-04)†	7.74E-01(9.85E-04)†	5.66E-01(1.46E-03)†	8.89E-01(9.73E-04)†	9.96E-01(1.84E-05)
	25	9.18E-01(4.57E-04)†	7.48E-01(1.53E-03)†	8.59E-01(8.61E-04)†	6.24E-01(6.73E-04)†	8.67E-01(1.97E-03)†	9.96E-01(6.78E-06)
	50	9.20E-01(4.54E-04)†	7.09E-01(3.29E-03)†	8.77E-01(4.81E-04)†	6.53E-01(1.97E-04)†	8.68E-01(1.02E-03)†	9.96E-01(7.12E-06)
	200	9.67E-01(7.85E-05)†	6.63E-01(4.10E-04)†	9.51E-01(1.67E-04)†	6.55E-01(6.67E-05)†	9.61E-01(2.80E-04)†	9.95E-01(9.25E-06)
WFG2	5	9.48E-01(5.47E-04)†	7.35E-01(5.10E-04)†	9.30E-01(5.62E-04)†	2.03E-01(6.37E-05)†	9.48E-01(6.02E-04)†	1.00E+00(8.51E-07)
	25	9.53E-01(8.10E-04)†	6.57E-01(7.95E-04)†	9.47E-01(6.95E-04)†	2.11E-01(4.78E-05)†	9.68E-01(8.67E-04)†	9.96E-01(6.91E-06)
	50	9.54E-01(8.51E-04)†	6.58E-01(8.85E-04)†	9.47E-01(7.61E-04)†	2.12E-01(1.62E-05)†	9.65E-01(9.56E-04)‡	9.63E-01(3.19E-02)
	200	9.67E-01(7.77E-04)†	6.72E-01(4.94E-04)†	9.48E-01(7.72E-04)†	2.15E-01(2.75E-05)†	9.69E-01(8.40E-04)	9.93E-01(4.58E-06)
WFG3	5	9.14E-01(1.87E-03)†	9.21E-01(2.64E-03)†	7.52E-01(1.08E-03)†	5.10E-01(1.58E-04)†	9.32E-01(3.04E-03)†	1.00E+00(2.64E-07)
	25	8.99E-01(4.62E-03)†	9.27E-01(2.64E-03)†	8.22E-01(3.54E-03)†	4.90E-01(6.63E-04)†	8.93E-01(5.99E-03)†	1.00E+00(4.95E-08)
	50	8.77E-01(3.82E-03)†	9.24E-01(2.34E-03)†	8.28E-01(4.09E-03)†	4.86E-01(6.87E-04)†	9.00E-01(5.14E-03)†	9.99E-01(3.43E-06)
	200	8.65E-01(4.40E-03)†	9.27E-01(2.59E-03)†	8.43E-01(3.91E-03)†	5.05E-01(3.41E-04)†	8.35E-01(5.56E-02)†	9.68E-01(3.23E-02)
WFG4	5	9.99E-01(3.58E-06)†	9.87E-01(1.57E-05)†	9.49E-01(7.21E-05)†	8.45E-01(4.12E-06)†	1.00E+00(3.34E-10)†	1.00E+00(4.97E-11)
	25	9.98E-01(7.26E-06)†	9.92E-01(7.87E-07)†	9.66E-01(1.14E-04)†	8.35E-01(4.27E-05)†	1.00E+00(3.88E-10)	1.00E+00(4.49E-07)
	50	9.97E-01(1.54E-05)†	9.94E-01(1.64E-06)†	9.73E-01(7.29E-05)†	8.40E-01(2.85E-05)†	1.00E+00(7.22E-11)†	1.00E+00(8.57E-12)
	200	9.93E-01(2.39E-05)†	9.95E-01(8.62E-07)†	9.79E-01(3.49E-05)†	8.42E-01(2.36E-05)†	1.00E+00(2.06E-07)†	1.00E+00(2.36E-11)
WFG5	5	9.84E-01(8.29E-07)‡	9.74E-01(2.83E-05)†	9.29E-01(9.83E-05)†	9.61E-01(4.42E-05)†	9.82E-01(2.22E-06)†	9.83E-01(3.74E-06)
	25	9.83E-01(8.08E-06)‡	9.81E-01(2.77E-06)†	9.55E-01(8.11E-05)†	9.58E-01(6.59E-05)†	9.86E-01(1.18E-06)‡	9.82E-01(4.61E-06)
	50	9.84E-01(6.80E-07)	9.83E-01(2.46E-06)†	9.63E-01(5.47E-05)†	9.53E-01(1.56E-04)†	9.89E-01(1.17E-06)‡	9.84E-01(1.03E-06)
	200	9.82E-01(1.74E-05)†	9.84E-01(1.10E-06)†	9.65E-01(7.50E-05)†	9.54E-01(1.14E-04)†	9.92E-01(4.48E-08)‡	9.85E-01(4.13E-11)
WFG6	5	7.90E-01(1.04E-02)†	8.00E-01(1.41E-02)†	7.91E-01(8.92E-03)†	4.62E-01(2.29E-05)†	8.42E-01(1.32E-02)†	9.77E-01(1.22E-04)
	25	8.46E-01(1.18E-02)†	8.36E-01(1.56E-02)†	8.20E-01(1.15E-02)†	4.61E-01(2.83E-05)†	8.58E-01(1.52E-02)†	9.78E-01(5.09E-05)
	50	8.35E-01(1.32E-02)†	8.47E-01(1.48E-02)	8.16E-01(1.23E-02)†	4.63E-01(3.63E-05)†	8.39E-01(1.36E-02)†	9.79E-01(3.19E-05)
	200	8.78E-01(1.19E-02)†	8.44E-01(1.47E-02)	8.29E-01(1.20E-02)†	4.59E-01(1.42E-05)†	8.69E-01(1.47E-02)†	9.80E-01(3.83E-05)
WFG7	5	9.95E-01(6.64E-05)†	9.87E-01(3.28E-06)†	9.48E-01(1.24E-04)†	9.86E-01(6.94E-05)†	9.98E-01(8.48E-07)†	1.00E+00(9.23E-13)
	25	9.90E-01(8.73E-05)†	9.93E-01(1.54E-06)†	9.63E-01(1.06E-04)†	9.77E-01(5.41E-05)†	1.00E+00(1.65E-08)	9.99E-01(3.03E-06)
	50	9.84E-01(8.63E-05)†	9.94E-01(1.54E-06)†	9.64E-01(6.63E-05)†	9.79E-01(5.06E-05)†	1.00E+00(2.15E-08)†	1.00E+00(6.82E-12)
	200	9.86E-01(4.64E-05)†	9.97E-01(2.10E-07)†	9.71E-01(1.08E-04)†	9.83E-01(1.67E-05)†	9.98E-01(5.38E-06)†	1.00E+00(1.61E-12)
WFG8	5	9.97E-01(3.60E-05)†	9.86E-01(5.08E-06)†	9.47E-01(1.54E-04)†	9.85E-01(9.13E-05)†	9.98E-01(4.91E-06)†	1.00E+00(5.81E-12)
	25	9.91E-01(6.36E-05)†	9.93E-01(2.39E-06)†	9.64E-01(6.83E-05)†	9.74E-01(6.72E-05)†	1.00E+00(6.94E-07)	9.99E-01(2.13E-06)
	50	9.86E-01(6.71E-05)†	9.94E-01(1.73E-06)†	9.68E-01(9.06E-05)†	9.78E-01(3.05E-05)†	1.00E+00(2.75E-07)†	1.00E+00(9.18E-13)
	200	9.84E-01(4.48E-05)†	9.97E-01(4.09E-07)†	9.76E-01(8.05E-05)†	9.82E-01(2.76E-05)†	9.99E-01(3.83E-06)†	1.00E+00(9.03E-14)
WFG9	5	6.96E-01(1.11E-02)†	7.76E-01(6.35E-03)†	8.35E-01(4.60E-03)†	8.97E-01(9.20E-04)	8.10E-01(7.12E-03)†	8.80E-01(1.94E-04)
	25	8.22E-01(7.41E-03)†	8.01E-01(7.52E-03)†	8.97E-01(6.52E-03)	9.61E-01(5.96E-04)‡	8.17E-01(7.73E-03)	8.80E-01(3.34E-05)
	50	8.32E-01(7.45E-03)	8.14E-01(7.43E-03)†	9.41E-01(3.08E-03)‡	9.64E-01(1.04E-03)‡	8.29E-01(7.51E-03)	8.84E-01(1.88E-04)
	200	8.66E-01(9.81E-03)	8.53E-01(1.03E-02)	9.45E-01(2.56E-03)‡	9.58E-01(5.92E-04)‡	8.32E-01(7.08E-03)	8.80E-01(3.52E-05)

TABLE 47
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 3 TO 2 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	9.73E-01(1.85E-03)†	9.81E-01(9.59E-04)†	1.00E+00(7.46E-07)†	1.00E+00(0.00E+00)
	25	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	9.81E-01(5.17E-03)†	1.00E+00(1.12E-07)†	1.00E+00(0.00E+00)
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	9.82E-01(4.71E-03)†	9.94E-01(8.43E-04)†	1.00E+00(0.00E+00)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	9.22E-01(1.01E-02)†	1.00E+00(1.11E-09)†	9.99E-01(1.07E-06)†	1.00E+00(0.00E+00)
F2	5	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(2.24E-07)†	3.09E-01(1.60E-01)†	1.00E+00(2.64E-10)†	1.00E+00(0.00E+00)
	25	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	9.97E-01(2.25E-05)†	1.00E+00(3.38E-10)†	1.00E+00(1.82E-10)†	1.00E+00(0.00E+00)
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	9.87E-01(3.10E-04)†	1.00E+00(1.24E-10)†	1.00E+00(2.61E-10)†	1.00E+00(0.00E+00)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	9.82E-01(3.23E-04)†	1.00E+00(4.16E-12)†	1.00E+00(1.79E-10)†	1.00E+00(0.00E+00)
F3	5	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	9.49E-01(5.95E-03)†	6.47E-01(4.01E-02)†	1.00E+00(1.88E-07)†	1.00E+00(0.00E+00)
	25	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	9.80E-01(5.32E-03)†	1.00E+00(7.71E-07)†	1.00E+00(0.00E+00)
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	9.53E-01(1.20E-02)†	1.00E+00(1.21E-07)†	1.00E+00(0.00E+00)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	8.17E-01(2.54E-02)†	1.00E+00(1.10E-08)†	1.00E+00(3.04E-07)†	1.00E+00(2.71E-11)
F4	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.98E-01(4.70E-06)‡	1.00E+00(2.66E-10)‡	1.00E+00(7.71E-11)‡	9.03E-01(9.03E-02)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.93E-01(2.68E-04)†	1.00E+00(1.23E-10)‡	1.00E+00(8.35E-11)	1.00E+00(1.97E-10)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.67E-01(1.19E-03)†	1.00E+00(7.30E-11)‡	1.00E+00(1.80E-10)	1.00E+00(1.63E-10)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.60E-01(1.18E-03)†	1.00E+00(2.12E-11)‡	1.00E+00(1.96E-10)‡	1.00E+00(1.93E-10)
WFG1	5	9.50E-01(7.69E-04)†	8.75E-01(3.14E-04)†	8.44E-01(2.59E-03)†	5.69E-01(6.51E-07)†	9.90E-01(1.68E-05)†	9.97E-01(8.03E-06)
	25	9.23E-01(5.41E-04)†	8.10E-01(7.39E-03)†	8.69E-01(1.11E-03)†	5.69E-01(2.57E-07)†	9.03E-01(1.56E-03)†	9.97E-01(6.45E-06)
	50	9.41E-01(3.92E-04)†	7.29E-01(8.72E-03)†	8.89E-01(9.76E-04)†	5.69E-01(3.88E-07)†	9.02E-01(7.59E-04)†	9.97E-01(1.09E-06)
	200	9.83E-01(8.01E-06)†	7.21E-01(9.53E-05)†	9.74E-01(1.45E-04)†	5.69E-01(1.51E-07)†	9.75E-01(2.25E-04)†	9.97E-01(7.99E-06)
WFG2	5	9.76E-01(1.88E-04)†	8.07E-01(7.01E-03)†	9.58E-01(1.09E-04)†	2.41E-01(4.29E-05)†	9.79E-01(4.63E-04)‡	1.00E+00(6.66E-10)
	25	9.68E-01(3.58E-04)†	7.02E-01(3.27E-03)†	9.70E-01(1.37E-04)†	2.32E-01(3.47E-04)†	9.70E-01(4.74E-04)‡	1.00E+00(1.00E-10)
	50	9.74E-01(8.36E-05)†	7.28E-01(1.11E-04)†	9.73E-01(9.39E-05)†	2.34E-01(3.86E-04)†	9.70E-01(8.24E-04)‡	9.68E-01(3.22E-02)
	200	9.76E-01(1.57E-04)†	7.39E-01(5.71E-06)†	9.73E-01(8.30E-05)†	2.47E-01(5.62E-08)†	9.73E-01(3.73E-04)‡	1.00E+00(7.02E-08)
WFG3	5	9.94E-01(7.50E-06)†	9.35E-01(1.10E-03)†	8.32E-01(5.55E-04)†	4.43E-01(5.27E-05)†	9.61E-01(1.06E-03)†	1.00E+00(1.36E-10)
	25	9.11E-01(1.10E-03)†	9.45E-01(1.22E-03)†	8.81E-01(4.46E-04)†	4.38E-01(1.66E-04)†	9.28E-01(1.87E-03)†	1.00E+00(3.53E-07)
	50	8.89E-01(1.36E-04)†	9.43E-01(1.14E-03)†	8.87E-01(2.88E-04)†	4.33E-01(2.09E-04)†	9.32E-01(1.94E-03)†	1.00E+00(1.47E-10)
	200	8.89E-01(8.50E-05)†	9.38E-01(9.75E-04)†	8.81E-01(7.67E-05)†	4.34E-01(2.14E-04)†	8.62E-01(5.46E-02)†	9.68E-01(3.23E-02)
WFG4	5	9.94E-01(9.49E-05)†	9.75E-01(1.96E-05)†	9.14E-01(3.52E-04)†	8.22E-01(1.48E-05)†	1.00E+00(8.64E-10)†	1.00E+00(3.35E-10)
	25	9.86E-01(1.53E-04)†	9.87E-01(4.27E-06)†	9.28E-01(4.85E-04)†	8.01E-01(1.46E-04)†	9.99E-01(3.01E-05)†	1.00E+00(4.07E-07)
	50	9.87E-01(1.08E-04)†	9.89E-01(6.89E-06)†	9.32E-01(3.62E-04)†	8.06E-01(5.32E-05)†	1.00E+00(4.27E-08)†	1.00E+00(5.51E-10)
	200	9.86E-01(8.71E-05)†	9.91E-01(1.36E-05)†	9.26E-01(3.17E-04)†	8.15E-01(8.46E-05)†	9.95E-01(4.77E-05)†	1.00E+00(2.99E-10)
WFG5	5	9.80E-01(2.09E-06)‡	9.57E-01(2.88E-04)†	8.79E-01(3.48E-04)†	9.54E-01(5.19E-05)†	9.68E-01(1.33E-04)†	9.76E-01(5.62E-05)
	25	9.80E-01(1.46E-05)‡	9.63E-01(2.53E-04)†	9.18E-01(2.54E-04)†	9.59E-01(6.75E-05)†	9.67E-01(9.07E-05)†	9.74E-01(5.31E-05)
	50	9.80E-01(2.11E-05)‡	9.67E-01(2.58E-04)	9.24E-01(2.04E-04)†	9.57E-01(2.07E-05)†	9.80E-01(5.52E-05)‡	9.77E-01(1.28E-05)
	200	9.80E-01(1.67E-05)‡	9.58E-01(1.75E-04)†	9.21E-01(2.46E-04)†	9.51E-01(1.83E-04)†	9.89E-01(4.86E-06)‡	9.76E-01(1.06E-05)
WFG6	5	9.46E-01(3.80E-04)†	9.26E-01(1.06E-03)†	8.97E-01(7.01E-04)†	5.13E-01(1.63E-04)†	8.52E-01(8.09E-03)†	9.76E-01(5.79E-05)
	25	9.53E-01(3.17E-04)†	9.56E-01(7.07E-04)†	9.10E-01(7.34E-04)†	5.12E-01(1.75E-04)†	8.08E-01(2.04E-02)†	9.70E-01(1.03E-03)
	50	9.54E-01(1.88E-04)†	9.64E-01(6.96E-04)	9.20E-01(3.67E-04)†	5.15E-01(1.66E-04)†	8.24E-01(2.30E-02)†	9.77E-01(3.97E-05)
	200	9.59E-01(2.63E-04)†	9.70E-01(5.30E-04)	9.24E-01(4.14E-04)†	5.14E-01(1.13E-04)†	8.63E-01(2.06E-02)†	9.78E-01(4.78E-05)
WFG7	5	9.90E-01(1.15E-04)†	9.63E-01(1.96E-05)†	9.21E-01(2.69E-04)†	9.77E-01(1.76E-04)†	9.96E-01(4.64E-06)†	1.00E+00(2.30E-10)
	25	9.80E-01(1.99E-04)†	9.80E-01(1.00E-05)†	9.30E-01(7.36E-04)†	9.57E-01(2.03E-04)†	9.99E-01(7.37E-06)†	1.00E+00(1.33E-11)
	50	9.80E-01(5.27E-05)†	9.87E-01(7.93E-06)†	9.37E-01(6.04E-04)†	9.58E-01(1.15E-04)†	9.99E-01(5.86E-06)†	1.00E+00(1.39E-10)
	200	9.75E-01(4.58E-05)†	9.95E-01(9.71E-07)†	9.36E-01(5.66E-04)†	9.70E-01(5.61E-05)†	9.93E-01(4.23E-05)†	1.00E+00(1.86E-10)
WFG8	5	9.88E-01(1.71E-04)†	9.61E-01(3.35E-05)†	9.23E-01(5.10E-04)†	9.76E-01(3.92E-04)†	9.95E-01(6.98E-05)†	1.00E+00(1.78E-10)
	25	9.82E-01(1.37E-04)†	9.82E-01(1.16E-05)†	9.36E-01(5.56E-04)†	9.56E-01(2.01E-04)†	9.98E-01(6.97E-06)†	1.00E+00(3.82E-12)
	50	9.79E-01(1.11E-04)†	9.88E-01(8.50E-06)†	9.34E-01(4.33E-04)†	9.60E-01(1.38E-04)†	9.97E-01(3.83E-05)†	1.00E+00(1.72E-10)
	200	9.78E-01(9.67E-05)†	9.95E-01(6.99E-07)†	9.43E-01(5.34E-04)†	9.67E-01(8.35E-05)†	9.94E-01(4.21E-05)†	1.00E+00(1.62E-10)
WFG9	5	8.55E-01(2.17E-04)†	8.55E-01(2.55E-05)†	8.26E-01(6.77E-05)†	8.38E-01(9.56E-04)†	8.21E-01(4.38E-03)†	8.63E-01(2.26E-05)
	25	8.37E-01(3.23E-04)†	8.56E-01(4.99E-05)†	8.94E-01(2.45E-03)‡	9.32E-01(8.74E-04)‡	7.87E-01(1.01E-02)†	8.62E-01(2.10E-04)
	50	8.47E-01(8.76E-04)†	8.62E-01(1.48E-04)	9.23E-01(4.64E-04)‡	9.30E-01(1.79E-03)‡	7.90E-01(1.01E-02)†	8.64E-01(1.70E-05)
	200	8.85E-01(3.26E-03)	8.87E-01(1.84E-03)‡	9.17E-01(4.23E-04)‡	9.28E-01(9.80E-04)‡	8.08E-01(1.14E-02)	8.64E-01(3.64E-05)

TABLE 48
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 7 TO 6 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	0.00E+00(0.00E+00)†	9.78E-01(5.03E-04)‡	0.00E+00(0.00E+00)†	5.64E-03(7.87E-04)†	7.59E-01(5.63E-02)†	9.15E-01(4.69E-03)
	25	0.00E+00(0.00E+00)†	9.83E-01(2.18E-04)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	8.18E-01(2.95E-02)†	9.10E-01(4.45E-03)
	50	0.00E+00(0.00E+00)†	9.81E-01(2.21E-04)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	7.64E-01(2.31E-02)†	9.00E-01(6.49E-03)
	200	0.00E+00(0.00E+00)†	9.78E-01(4.03E-04)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	7.81E-01(3.71E-02)†	8.80E-01(6.95E-03)
F2	5	8.21E-01(1.98E-03)†	9.93E-01(9.12E-08)†	8.72E-01(2.54E-04)†	0.00E+00(0.00E+00)†	9.94E-01(7.28E-08)	9.94E-01(5.58E-08)
	25	8.02E-01(1.95E-03)†	9.93E-01(1.16E-07)†	8.69E-01(1.60E-04)†	0.00E+00(0.00E+00)†	9.94E-01(7.09E-08)	9.95E-01(8.04E-08)
	50	8.03E-01(1.64E-03)†	9.93E-01(9.63E-08)†	8.77E-01(3.64E-04)†	0.00E+00(0.00E+00)†	9.94E-01(8.35E-08)†	9.95E-01(5.49E-08)
	200	8.12E-01(2.34E-03)†	9.93E-01(1.09E-07)†	8.66E-01(2.84E-04)†	0.00E+00(0.00E+00)†	9.94E-01(7.59E-08)	9.95E-01(7.90E-08)
F3	5	0.00E+00(0.00E+00)†	7.57E-01(8.81E-03)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	8.11E-02(2.07E-02)†	2.65E-01(3.70E-02)
	25	0.00E+00(0.00E+00)†	7.47E-01(1.24E-02)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	1.69E-01(4.71E-02)†	3.08E-01(5.96E-02)
	50	0.00E+00(0.00E+00)†	7.57E-01(1.03E-02)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	1.09E-01(3.01E-02)†	2.57E-01(4.25E-02)
	200	0.00E+00(0.00E+00)†	7.54E-01(1.05E-02)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	1.76E-01(4.43E-02)†	2.53E-01(3.72E-02)
F4	5	5.78E-01(1.94E-04)†	9.92E-01(3.59E-07)	7.17E-01(1.52E-03)†	7.63E-01(5.94E-03)†	9.92E-01(4.97E-07)	9.92E-01(3.96E-07)
	25	5.83E-01(1.12E-04)†	9.92E-01(3.59E-07)	7.23E-01(2.55E-03)†	7.83E-01(3.85E-03)†	9.92E-01(4.47E-07)	9.92E-01(7.58E-07)
	50	5.80E-01(1.86E-04)†	9.92E-01(2.60E-07)	7.19E-01(1.90E-03)†	7.87E-01(5.70E-03)†	9.92E-01(3.84E-07)	9.92E-01(3.25E-07)
	200	5.82E-01(2.46E-04)†	9.92E-01(2.70E-07)‡	7.14E-01(1.09E-03)†	7.93E-01(4.47E-03)†	9.92E-01(6.63E-07)	9.92E-01(4.65E-07)
WFG1	5	8.78E-01(1.10E-04)‡	8.15E-01(8.22E-05)†	8.81E-01(1.79E-04)‡	2.31E-01(1.78E-02)†	8.71E-01(3.48E-05)	8.71E-01(2.73E-05)
	25	8.85E-01(2.36E-04)‡	8.16E-01(1.12E-04)†	8.80E-01(1.38E-04)‡	2.61E-01(2.03E-02)†	8.68E-01(9.02E-06)†	8.73E-01(2.76E-05)
	50	8.85E-01(2.65E-04)‡	8.17E-01(5.84E-05)†	8.86E-01(2.83E-04)‡	2.28E-01(1.47E-02)†	8.70E-01(3.49E-05)	8.72E-01(3.48E-05)
	200	8.83E-01(1.38E-04)‡	8.14E-01(9.77E-05)†	8.78E-01(1.15E-04)‡	2.46E-01(2.16E-02)†	8.69E-01(1.29E-05)	8.71E-01(1.81E-05)
WFG2	5	8.20E-01(4.08E-03)†	8.42E-01(2.65E-04)†	8.19E-01(2.06E-03)†	2.06E-01(5.85E-06)†	9.80E-01(3.78E-05)†	9.84E-01(2.02E-05)
	25	8.14E-01(4.25E-03)†	8.45E-01(1.12E-04)†	7.93E-01(3.04E-03)†	2.06E-01(7.96E-06)†	9.78E-01(4.98E-05)†	9.84E-01(1.63E-05)
	50	8.07E-01(3.38E-03)†	8.42E-01(1.24E-04)†	8.18E-01(3.37E-03)†	2.07E-01(1.57E-06)†	9.78E-01(5.58E-05)†	9.84E-01(3.28E-05)
	200	8.16E-01(3.67E-03)†	8.46E-01(1.47E-04)†	8.10E-01(3.63E-03)†	2.06E-01(3.11E-06)†	9.78E-01(5.08E-05)†	9.85E-01(1.68E-05)
WFG3	5	5.88E-01(7.70E-04)‡	4.84E-01(3.29E-03)	5.99E-01(7.71E-04)‡	2.13E-01(2.07E-06)†	5.06E-01(5.97E-04)	5.03E-01(4.90E-04)
	25	6.03E-01(9.08E-04)‡	5.09E-01(3.10E-03)‡	5.96E-01(8.41E-04)‡	2.13E-01(6.18E-06)†	5.04E-01(4.59E-04)	5.03E-01(5.06E-04)
	50	6.03E-01(9.70E-04)‡	5.15E-01(2.96E-03)	6.01E-01(7.05E-04)‡	2.12E-01(1.02E-05)†	5.14E-01(6.69E-04)	5.14E-01(5.69E-04)
	200	6.00E-01(1.17E-03)‡	5.12E-01(3.46E-03)‡	6.03E-01(9.06E-04)‡	2.12E-01(8.84E-06)†	5.00E-01(5.26E-04)	5.04E-01(3.92E-04)
WFG4	5	7.55E-01(5.42E-04)†	7.14E-01(9.96E-04)†	6.91E-01(5.35E-04)†	2.85E-01(2.32E-05)†	9.07E-01(4.46E-06)†	9.10E-01(5.29E-06)
	25	7.46E-01(7.79E-04)†	7.34E-01(8.35E-04)†	6.90E-01(4.26E-04)†	2.86E-01(2.47E-05)†	9.07E-01(7.88E-06)†	9.10E-01(2.75E-06)
	50	7.44E-01(4.87E-04)†	7.32E-01(5.40E-04)†	6.84E-01(5.83E-04)†	2.85E-01(2.72E-05)†	9.07E-01(3.94E-06)†	9.10E-01(4.56E-06)
	200	7.54E-01(5.45E-04)†	7.33E-01(8.71E-04)†	6.95E-01(4.68E-04)†	2.86E-01(2.57E-05)†	9.08E-01(3.92E-06)†	9.10E-01(4.79E-06)
WFG5	5	6.96E-01(5.65E-04)†	6.80E-01(5.37E-04)†	6.51E-01(3.65E-04)†	4.96E-01(1.51E-05)†	8.69E-01(1.81E-06)†	8.72E-01(1.93E-06)
	25	6.91E-01(7.28E-04)†	6.88E-01(6.36E-04)†	6.55E-01(6.28E-04)†	4.97E-01(1.37E-05)†	8.70E-01(1.89E-06)†	8.73E-01(7.10E-06)
	50	6.94E-01(4.64E-04)†	6.88E-01(4.21E-04)†	6.56E-01(4.57E-04)†	4.95E-01(1.49E-05)†	8.70E-01(2.01E-06)†	8.72E-01(2.62E-06)
	200	6.97E-01(4.23E-04)†	6.89E-01(4.98E-04)†	6.54E-01(3.20E-04)†	4.95E-01(1.54E-05)†	8.69E-01(2.93E-06)†	8.72E-01(2.20E-06)
WFG6	5	6.47E-01(8.60E-04)	5.80E-01(2.81E-03)	6.05E-01(5.57E-04)	1.08E-01(7.59E-07)†	5.93E-01(6.25E-02)	5.86E-01(6.25E-02)
	25	6.51E-01(4.74E-04)	5.83E-01(2.73E-03)	6.11E-01(6.14E-04)	1.08E-01(9.80E-07)†	5.15E-01(6.21E-02)	5.88E-01(5.66E-02)
	50	6.51E-01(7.22E-04)	5.93E-01(2.07E-03)	6.11E-01(4.46E-04)	1.08E-01(5.46E-07)†	5.13E-01(6.91E-02)	5.52E-01(5.94E-02)
	200	6.51E-01(4.46E-04)	5.59E-01(2.13E-03)	6.03E-01(6.63E-04)	1.08E-01(1.04E-06)†	4.90E-01(6.30E-02)	5.36E-01(6.38E-02)
WFG7	5	7.21E-01(2.99E-04)†	6.32E-01(2.92E-04)†	6.54E-01(2.03E-04)†	6.64E-01(5.90E-04)†	8.70E-01(2.57E-05)†	8.75E-01(2.36E-05)
	25	7.22E-01(2.72E-04)†	6.30E-01(2.80E-04)†	6.60E-01(3.95E-04)†	6.67E-01(1.19E-03)†	8.68E-01(2.36E-05)†	8.76E-01(2.37E-05)
	50	7.26E-01(3.91E-04)†	6.29E-01(2.73E-04)†	6.50E-01(5.79E-04)†	6.71E-01(1.65E-03)†	8.69E-01(3.18E-05)†	8.76E-01(2.64E-05)
	200	7.23E-01(1.84E-04)†	6.32E-01(2.14E-04)†	6.48E-01(6.37E-04)†	6.77E-01(1.93E-03)†	8.70E-01(2.74E-05)†	8.75E-01(2.13E-05)
WFG8	5	7.26E-01(2.35E-04)†	6.29E-01(3.87E-04)†	6.59E-01(4.54E-04)†	6.65E-01(8.99E-04)†	8.71E-01(2.17E-05)†	8.74E-01(2.50E-05)
	25	7.22E-01(2.72E-04)†	6.30E-01(2.80E-04)†	6.60E-01(3.95E-04)†	6.71E-01(1.18E-03)†	8.70E-01(1.37E-05)†	8.75E-01(2.05E-05)
	50	7.25E-01(2.76E-04)†	6.31E-01(2.42E-04)†	6.54E-01(4.94E-04)†	6.70E-01(1.34E-03)†	8.69E-01(1.92E-05)†	8.74E-01(1.51E-05)
	200	7.24E-01(2.77E-04)†	6.26E-01(6.75E-04)†	6.56E-01(5.24E-04)†	6.70E-01(1.02E-03)†	8.70E-01(2.51E-05)†	8.76E-01(2.55E-05)
WFG9	5	6.65E-01(1.08E-03)‡	5.71E-01(2.49E-03)	5.88E-01(6.09E-04)	7.61E-01(7.05E-04)‡	5.94E-01(3.90E-02)	5.55E-01(2.53E-02)
	25	7.22E-01(2.72E-04)	6.30E-01(2.80E-04)	6.60E-01(3.95E-04)	7.64E-01(4.49E-04)‡	6.27E-01(3.42E-02)	6.54E-01(2.79E-02)
	50	6.74E-01(8.02E-04)‡	5.63E-01(4.75E-03)	5.93E-01(6.99E-04)	7.68E-01(6.42E-04)‡	5.82E-01(2.60E-02)	6.00E-01(2.78E-02)
	200	6.80E-01(1.15E-03)‡	5.79E-01(4.89E-03)	6.02E-01(1.00E-03)‡	7.52E-01(8.10E-04)‡	5.06E-01(4.01E-02)	5.56E-01(2.76E-02)

TABLE 49
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 6 TO 5 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	0.00E+00(0.00E+00)†	6.86E-01(3.81E-02)‡	0.00E+00(0.00E+00)†	1.22E-02(1.39E-03)†	6.56E-02(2.44E-02)	8.34E-02(2.22E-02)
	25	0.00E+00(0.00E+00)†	8.27E-01(4.90E-03)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	3.77E-01(7.15E-02)†	6.08E-01(5.23E-02)
	50	0.00E+00(0.00E+00)†	8.35E-01(2.26E-02)	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	6.23E-01(4.64E-02)†	7.72E-01(2.59E-02)
	200	0.00E+00(0.00E+00)†	9.40E-01(2.25E-03)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	6.69E-01(6.44E-02)†	8.66E-01(1.89E-02)
F2	5	7.70E-01(3.86E-03)†	9.80E-01(1.87E-06)†	8.63E-01(1.73E-04)†	0.00E+00(0.00E+00)†	9.82E-01(1.18E-06)†	9.83E-01(1.31E-06)
	25	7.55E-01(3.68E-03)†	9.83E-01(7.44E-07)†	8.46E-01(2.69E-04)†	0.00E+00(0.00E+00)†	9.85E-01(1.01E-06)†	9.86E-01(8.96E-07)
	50	7.74E-01(5.21E-03)†	9.83E-01(4.15E-07)†	8.47E-01(3.58E-04)†	0.00E+00(0.00E+00)†	9.86E-01(3.31E-07)†	9.87E-01(3.17E-07)
	200	7.98E-01(6.04E-03)†	9.85E-01(3.04E-07)†	8.37E-01(9.47E-04)†	0.00E+00(0.00E+00)†	9.86E-01(3.14E-07)†	9.87E-01(2.21E-07)
F3	5	0.00E+00(0.00E+00)	2.72E-01(6.43E-02)‡	0.00E+00(0.00E+00)	0.00E+00(0.00E+00)	0.00E+00(0.00E+00)	7.95E-03(1.07E-03)
	25	0.00E+00(0.00E+00)†	2.95E-01(3.05E-02)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	9.40E-03(6.42E-04)	2.28E-02(3.23E-03)
	50	0.00E+00(0.00E+00)†	3.98E-01(3.35E-02)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	6.03E-02(1.91E-02)†	2.03E-01(4.78E-02)
	200	0.00E+00(0.00E+00)†	6.86E-01(1.44E-02)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	1.17E-01(2.24E-02)†	3.60E-01(5.45E-02)
F4	5	3.46E-01(1.54E-04)†	9.80E-01(4.71E-06)‡	6.95E-01(2.85E-03)†	9.25E-01(8.90E-04)†	9.71E-01(9.72E-06)†	9.73E-01(9.43E-06)
	25	3.71E-01(1.64E-04)†	9.83E-01(1.98E-06)‡	6.33E-01(3.17E-03)†	9.46E-01(1.30E-03)†	9.81E-01(4.10E-06)	9.81E-01(3.25E-06)
	50	3.77E-01(1.91E-04)†	9.84E-01(2.28E-06)	6.25E-01(2.71E-03)†	9.40E-01(2.30E-03)†	9.82E-01(3.64E-06)	9.83E-01(3.19E-06)
	200	3.95E-01(3.51E-04)†	9.85E-01(9.74E-07)‡	6.05E-01(4.05E-03)†	9.60E-01(4.04E-04)†	9.84E-01(2.38E-06)	9.84E-01(2.69E-06)
WFG1	5	8.24E-01(1.71E-04)	7.55E-01(4.00E-04)†	8.20E-01(1.19E-04)†	3.25E-01(2.88E-03)†	8.19E-01(3.60E-05)†	8.25E-01(4.38E-05)
	25	8.71E-01(1.23E-04)‡	8.04E-01(2.20E-04)†	8.66E-01(1.24E-04)	3.18E-01(7.30E-03)†	8.61E-01(1.20E-04)	8.61E-01(1.49E-04)
	50	8.93E-01(3.29E-05)‡	8.18E-01(1.97E-04)†	8.88E-01(5.67E-05)	3.17E-01(8.47E-03)†	8.87E-01(2.35E-05)	8.89E-01(2.01E-05)
	200	9.09E-01(2.65E-05)	8.41E-01(1.17E-04)†	9.08E-01(5.45E-05)	3.20E-01(7.94E-03)†	9.07E-01(2.83E-06)†	9.09E-01(1.09E-05)
WFG2	5	7.37E-01(9.40E-03)†	7.13E-01(8.37E-03)†	7.75E-01(6.40E-03)†	2.08E-01(7.01E-06)†	8.47E-01(8.58E-03)†	9.54E-01(5.32E-05)
	25	8.23E-01(8.54E-03)†	7.54E-01(7.47E-03)†	8.31E-01(8.03E-03)†	2.09E-01(2.95E-06)†	8.76E-01(9.99E-03)†	9.76E-01(5.59E-05)
	50	8.08E-01(9.90E-03)†	7.62E-01(7.86E-03)†	8.13E-01(6.89E-03)†	2.07E-01(2.33E-05)†	8.65E-01(1.02E-02)†	9.80E-01(3.16E-05)
	200	8.07E-01(1.00E-02)†	7.81E-01(8.14E-03)†	8.05E-01(8.61E-03)†	2.09E-01(3.78E-06)†	8.97E-01(8.63E-03)†	9.83E-01(1.67E-05)
WFG3	5	5.33E-01(1.74E-03)	4.23E-01(2.65E-03)†	5.39E-01(1.05E-03)	2.13E-01(1.20E-05)†	5.25E-01(1.10E-03)	5.28E-01(5.90E-04)
	25	5.77E-01(2.14E-03)‡	4.98E-01(1.76E-03)†	5.78E-01(1.68E-03)‡	2.13E-01(1.77E-05)†	5.36E-01(1.04E-03)	5.44E-01(1.05E-03)
	50	5.82E-01(2.36E-03)‡	5.08E-01(1.48E-03)†	5.87E-01(2.15E-03)‡	2.15E-01(4.19E-06)†	5.36E-01(1.27E-03)	5.40E-01(1.17E-03)
	200	5.90E-01(2.09E-03)	5.40E-01(2.04E-03)†	5.83E-01(1.83E-03)	2.16E-01(1.21E-05)†	5.49E-01(1.62E-03)†	5.81E-01(1.04E-03)
WFG4	5	7.16E-01(4.14E-04)†	4.17E-01(2.65E-03)†	6.50E-01(2.47E-04)†	3.28E-01(1.38E-04)†	8.52E-01(2.40E-05)†	8.56E-01(3.76E-05)
	25	7.36E-01(1.75E-04)†	5.01E-01(4.32E-03)†	6.84E-01(4.56E-04)†	3.26E-01(1.11E-04)†	8.71E-01(5.19E-06)†	8.73E-01(6.86E-06)
	50	7.39E-01(1.75E-04)†	5.52E-01(1.72E-03)†	6.84E-01(3.55E-04)†	3.12E-01(2.38E-04)†	8.74E-01(6.05E-06)†	8.76E-01(6.14E-06)
	200	7.59E-01(2.15E-04)†	6.42E-01(9.32E-04)†	7.03E-01(1.47E-04)†	3.18E-01(6.62E-05)†	8.72E-01(5.88E-06)†	8.77E-01(4.20E-06)
WFG5	5	6.81E-01(3.78E-04)†	4.08E-01(1.49E-03)†	6.22E-01(3.23E-04)†	5.18E-01(3.51E-05)†	8.39E-01(4.19E-06)†	8.43E-01(3.36E-06)
	25	6.96E-01(2.85E-04)†	5.25E-01(8.75E-04)†	6.58E-01(3.95E-04)†	5.21E-01(4.92E-05)†	8.46E-01(2.43E-06)†	8.49E-01(2.93E-06)
	50	7.07E-01(2.05E-04)†	5.65E-01(4.94E-04)†	6.68E-01(2.68E-04)†	5.23E-01(2.64E-05)†	8.47E-01(1.34E-06)†	8.50E-01(1.08E-06)
	200	7.16E-01(1.56E-04)†	6.44E-01(2.60E-04)†	6.79E-01(2.74E-04)†	5.26E-01(2.42E-05)†	8.47E-01(1.36E-06)†	8.50E-01(1.02E-06)
WFG6	5	3.56E-01(2.63E-02)†	2.01E-01(1.61E-02)†	3.39E-01(1.92E-02)†	1.30E-01(1.71E-06)†	4.84E-01(3.57E-02)†	5.97E-01(3.57E-02)
	25	4.90E-01(3.99E-02)†	2.64E-01(2.29E-02)†	4.76E-01(3.21E-02)†	1.30E-01(2.33E-06)†	4.53E-01(5.75E-02)†	6.55E-01(4.16E-02)
	50	5.17E-01(4.22E-02)†	2.97E-01(2.87E-02)†	4.52E-01(3.92E-02)†	1.31E-01(1.10E-06)†	4.97E-01(6.59E-02)†	6.28E-01(6.16E-02)
	200	4.83E-01(5.12E-02)†	3.60E-01(3.94E-02)†	4.70E-01(4.09E-02)†	1.31E-01(1.02E-06)†	5.38E-01(7.59E-02)	6.04E-01(6.95E-02)
WFG7	5	6.79E-01(4.82E-04)†	3.99E-01(1.30E-03)†	6.03E-01(4.44E-04)†	6.23E-01(6.33E-04)†	7.90E-01(4.92E-05)†	8.04E-01(4.59E-05)
	25	7.09E-01(2.33E-04)†	5.15E-01(9.20E-04)†	6.49E-01(2.43E-04)†	6.81E-01(5.63E-04)†	8.33E-01(3.96E-05)†	8.38E-01(3.57E-05)
	50	7.18E-01(1.59E-04)†	5.71E-01(1.01E-03)†	6.57E-01(3.21E-04)†	6.92E-01(7.68E-04)†	8.40E-01(4.27E-05)†	8.46E-01(3.55E-05)
	200	7.25E-01(1.74E-04)†	6.53E-01(2.38E-04)†	6.68E-01(3.09E-04)†	7.43E-01(4.77E-04)†	8.43E-01(1.94E-05)†	8.48E-01(3.24E-05)
WFG8	5	6.77E-01(2.56E-04)†	3.84E-01(1.47E-03)†	6.08E-01(3.65E-04)†	6.25E-01(1.22E-03)†	7.92E-01(4.06E-05)†	8.05E-01(3.12E-05)
	25	7.09E-01(2.33E-04)†	5.15E-01(9.20E-04)†	6.49E-01(2.43E-04)†	6.81E-01(6.64E-04)†	8.35E-01(3.04E-05)†	8.39E-01(3.19E-05)
	50	7.16E-01(3.11E-04)†	5.73E-01(2.64E-04)†	6.56E-01(3.08E-04)†	7.05E-01(7.63E-04)†	8.40E-01(2.43E-05)†	8.45E-01(4.68E-05)
	200	7.24E-01(1.17E-04)†	6.54E-01(3.48E-04)†	6.66E-01(3.13E-04)†	7.34E-01(4.47E-04)†	8.43E-01(1.55E-05)†	8.50E-01(1.88E-05)
WFG9	5	5.65E-01(8.75E-03)‡	2.66E-01(9.57E-03)†	4.80E-01(8.43E-03)†	7.15E-01(3.16E-04)‡	5.17E-01(2.08E-02)	5.22E-01(1.86E-02)
	25	7.09E-01(2.33E-04)	5.15E-01(9.20E-04)†	6.49E-01(2.43E-04)	7.35E-01(3.11E-04)	6.27E-01(1.87E-02)	6.61E-01(2.15E-02)
	50	6.26E-01(1.16E-02)	4.15E-01(3.07E-02)†	5.85E-01(6.01E-03)†	7.39E-01(5.98E-04)‡	5.18E-01(3.04E-02)†	6.60E-01(8.47E-03)
	200	6.44E-01(9.84E-03)	5.03E-01(3.24E-02)	6.05E-01(6.95E-03)	7.57E-01(3.88E-04)‡	5.56E-01(2.45E-02)	5.86E-01(2.76E-02)

TABLE 50
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 5 TO 4 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	0.00E+00(0.00E+00)	2.62E-01(5.92E-02)‡	0.00E+00(0.00E+00)	3.14E-02(3.57E-03)‡	0.00E+00(0.00E+00)	0.00E+00(0.00E+00)
	25	0.00E+00(0.00E+00)†	7.69E-01(1.84E-02)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	1.48E-01(3.06E-02)	2.67E-01(6.00E-02)
	50	0.00E+00(0.00E+00)†	8.29E-01(6.84E-03)	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	5.75E-01(7.46E-02)†	7.03E-01(6.31E-02)
	200	0.00E+00(0.00E+00)†	9.16E-01(1.36E-03)	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	6.64E-01(6.15E-02)†	9.05E-01(3.65E-03)
F2	5	7.41E-01(7.35E-03)†	9.45E-01(2.18E-05)†	8.58E-01(2.07E-04)†	8.71E-03(2.35E-03)†	9.54E-01(1.13E-05)†	9.59E-01(7.37E-06)
	25	8.27E-01(4.27E-03)†	9.57E-01(2.19E-06)†	8.85E-01(2.65E-04)†	0.00E+00(0.00E+00)†	9.65E-01(1.13E-06)†	9.67E-01(1.34E-06)
	50	8.75E-01(1.25E-03)†	9.60E-01(9.50E-07)†	9.00E-01(1.45E-04)†	0.00E+00(0.00E+00)†	9.66E-01(1.17E-06)†	9.69E-01(7.15E-07)
	200	9.21E-01(1.26E-04)†	9.65E-01(1.04E-06)†	9.16E-01(1.48E-04)†	2.94E-03(2.67E-04)†	9.68E-01(4.59E-07)†	9.70E-01(2.25E-07)
F3	5	0.00E+00(0.00E+00)	2.06E-02(2.72E-03)‡	0.00E+00(0.00E+00)	0.00E+00(0.00E+00)	0.00E+00(0.00E+00)	1.36E-03(5.70E-05)
	25	0.00E+00(0.00E+00)	1.83E-01(2.85E-02)‡	0.00E+00(0.00E+00)	0.00E+00(0.00E+00)	0.00E+00(0.00E+00)	0.00E+00(0.00E+00)
	50	0.00E+00(0.00E+00)†	3.34E-01(3.33E-02)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	1.72E-02(5.96E-03)†	1.80E-01(5.77E-02)
	200	0.00E+00(0.00E+00)†	5.46E-01(4.15E-02)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	1.27E-01(2.67E-02)†	3.61E-01(5.06E-02)
F4	5	1.57E-01(1.38E-04)†	9.53E-01(1.36E-05)‡	6.74E-01(2.09E-03)†	8.02E-01(3.29E-03)†	9.26E-01(7.54E-05)†	9.37E-01(5.67E-05)
	25	2.74E-01(7.61E-04)†	9.55E-01(2.67E-05)	6.62E-01(1.39E-03)†	9.30E-01(2.91E-04)†	9.57E-01(1.09E-05)	9.58E-01(1.07E-05)
	50	3.90E-01(1.45E-03)†	9.54E-01(1.63E-05)†	7.20E-01(1.44E-03)†	9.37E-01(3.26E-04)†	9.58E-01(1.27E-05)†	9.61E-01(8.91E-06)
	200	7.34E-01(9.35E-04)†	9.62E-01(3.27E-06)	7.89E-01(4.94E-04)†	9.36E-01(3.25E-03)†	9.60E-01(1.42E-05)	9.62E-01(8.04E-06)
WFG1	5	8.01E-01(1.44E-04)†	7.10E-01(6.09E-04)†	7.90E-01(1.08E-04)†	4.77E-01(1.16E-03)†	7.97E-01(4.77E-05)†	8.08E-01(7.88E-05)
	25	8.62E-01(2.03E-04)†	7.76E-01(3.20E-04)†	8.56E-01(1.75E-04)†	4.78E-01(1.68E-03)†	8.69E-01(1.65E-04)†	8.86E-01(6.59E-05)
	50	9.00E-01(3.05E-05)†	7.97E-01(9.88E-05)†	8.96E-01(4.29E-05)†	4.73E-01(2.38E-03)†	9.08E-01(2.13E-05)†	9.13E-01(2.29E-05)
	200	9.27E-01(6.96E-06)†	8.27E-01(1.42E-04)†	9.26E-01(8.70E-06)†	4.82E-01(1.40E-03)†	9.32E-01(4.09E-07)†	9.33E-01(9.29E-07)
WFG2	5	8.62E-01(4.42E-04)†	7.40E-01(6.21E-04)†	8.82E-01(3.97E-04)†	2.46E-01(1.44E-05)†	9.01E-01(1.68E-04)†	9.37E-01(5.70E-05)
	25	9.06E-01(3.12E-04)†	8.06E-01(1.75E-04)†	9.05E-01(7.58E-04)†	2.47E-01(1.69E-05)†	9.51E-01(1.71E-04)†	9.67E-01(3.27E-05)
	50	8.95E-01(7.01E-04)†	8.21E-01(1.61E-04)†	8.84E-01(5.56E-04)†	2.46E-01(2.00E-05)†	9.56E-01(1.12E-04)†	9.68E-01(5.25E-05)
	200	8.93E-01(3.83E-04)†	8.40E-01(3.98E-05)†	8.79E-01(9.41E-04)†	2.47E-01(1.22E-05)†	9.65E-01(5.05E-05)†	9.78E-01(1.04E-05)
WFG3	5	5.77E-01(4.09E-04)‡	4.64E-01(1.13E-03)†	5.80E-01(1.54E-04)‡	2.50E-01(4.37E-05)†	5.70E-01(1.80E-04)‡	5.52E-01(1.15E-04)
	25	6.20E-01(6.23E-04)‡	5.52E-01(5.63E-04)†	6.15E-01(5.03E-04)‡	2.57E-01(2.90E-05)†	5.90E-01(5.87E-04)‡	5.75E-01(3.64E-04)
	50	6.35E-01(4.27E-04)‡	5.64E-01(5.68E-04)†	6.27E-01(3.24E-04)‡	2.57E-01(3.14E-05)†	5.82E-01(2.67E-04)	5.81E-01(5.48E-04)
	200	6.36E-01(6.26E-04)‡	5.53E-01(3.99E-04)†	6.26E-01(4.34E-04)	2.59E-01(2.44E-05)†	5.99E-01(5.36E-04)†	6.15E-01(5.89E-04)
WFG4	5	6.82E-01(1.75E-04)†	4.18E-01(4.15E-03)†	6.30E-01(1.98E-04)†	3.13E-01(1.48E-04)†	7.77E-01(3.95E-05)†	7.86E-01(1.95E-05)
	25	7.21E-01(9.12E-05)†	5.35E-01(2.80E-03)†	6.82E-01(1.03E-04)†	3.25E-01(9.10E-05)†	8.12E-01(1.04E-05)†	8.15E-01(7.25E-06)
	50	7.31E-01(1.11E-04)†	5.80E-01(1.05E-03)†	6.91E-01(1.65E-04)†	3.31E-01(1.24E-04)†	8.16E-01(5.54E-06)†	8.19E-01(5.72E-06)
	200	7.44E-01(7.27E-05)†	6.68E-01(3.52E-04)†	7.03E-01(1.16E-04)†	3.31E-01(6.27E-05)†	8.17E-01(3.31E-06)†	8.21E-01(2.44E-06)
WFG5	5	6.63E-01(2.30E-04)†	4.54E-01(8.03E-04)†	6.03E-01(1.54E-04)†	5.47E-01(3.08E-05)†	7.68E-01(5.28E-05)†	7.72E-01(4.76E-05)
	25	6.93E-01(7.77E-05)†	5.80E-01(5.14E-04)†	6.60E-01(1.64E-04)†	5.63E-01(2.49E-05)†	7.93E-01(3.38E-06)†	7.96E-01(4.94E-06)
	50	7.02E-01(6.34E-05)†	6.26E-01(1.29E-04)†	6.70E-01(1.13E-04)†	5.64E-01(3.54E-05)†	7.96E-01(2.62E-06)†	7.99E-01(2.35E-06)
	200	7.12E-01(1.09E-04)†	6.80E-01(1.03E-04)†	6.81E-01(9.88E-05)†	5.64E-01(1.36E-05)†	7.98E-01(8.67E-07)†	8.00E-01(7.67E-07)
WFG6	5	5.89E-01(6.14E-04)	2.94E-01(1.55E-03)†	5.30E-01(4.10E-04)‡	1.51E-01(3.59E-06)†	4.31E-01(3.19E-02)†	5.22E-01(3.24E-02)
	25	6.64E-01(2.99E-04)	4.73E-01(5.86E-04)†	6.30E-01(1.31E-04)‡	1.54E-01(2.75E-06)†	4.35E-01(4.85E-02)	5.82E-01(5.14E-02)
	50	6.81E-01(1.42E-04)‡	5.20E-01(2.34E-04)†	6.48E-01(2.35E-04)†	1.54E-01(2.37E-06)†	4.87E-01(5.09E-02)†	6.79E-01(3.04E-02)
	200	6.95E-01(2.88E-04)‡	6.27E-01(1.97E-04)†	6.59E-01(1.78E-04)†	1.55E-01(8.77E-07)†	6.85E-01(2.26E-02)†	6.87E-01(3.17E-02)
WFG7	5	6.46E-01(2.54E-04)†	3.83E-01(2.57E-03)†	5.82E-01(3.80E-04)†	5.21E-01(5.63E-04)†	7.16E-01(5.94E-05)†	7.39E-01(7.50E-05)
	25	6.95E-01(2.41E-04)†	5.44E-01(4.92E-04)†	6.49E-01(2.29E-04)†	5.98E-01(5.89E-04)†	7.83E-01(2.47E-05)†	7.91E-01(1.67E-05)
	50	7.07E-01(1.38E-04)†	5.82E-01(2.92E-04)†	6.64E-01(2.10E-04)†	6.16E-01(3.17E-04)†	7.91E-01(2.57E-05)†	7.97E-01(2.29E-05)
	200	7.15E-01(7.21E-05)†	6.60E-01(1.79E-04)†	6.74E-01(2.90E-04)†	6.49E-01(2.33E-04)†	7.97E-01(8.92E-06)†	8.04E-01(1.20E-05)
WFG8	5	6.43E-01(1.86E-04)†	3.70E-01(1.85E-03)†	5.85E-01(3.45E-04)†	5.20E-01(4.43E-04)†	7.22E-01(4.26E-05)†	7.42E-01(6.61E-05)
	25	6.95E-01(2.41E-04)†	5.44E-01(4.92E-04)†	6.49E-01(2.29E-04)†	6.04E-01(3.95E-04)†	7.84E-01(2.40E-05)†	7.92E-01(3.50E-05)
	50	7.06E-01(1.29E-04)†	5.85E-01(3.46E-04)†	6.65E-01(1.21E-04)†	6.13E-01(3.62E-04)†	7.91E-01(2.54E-05)†	7.97E-01(2.02E-05)
	200	7.18E-01(1.15E-04)†	6.56E-01(1.72E-04)†	6.72E-01(1.86E-04)†	6.46E-01(3.62E-04)†	7.98E-01(1.52E-05)†	8.03E-01(1.27E-05)
WFG9	5	6.07E-01(6.75E-04)‡	2.81E-01(1.84E-03)†	5.09E-01(8.05E-04)	6.28E-01(2.51E-04)‡	4.59E-01(2.47E-02)	4.96E-01(1.87E-02)
	25	6.95E-01(2.41E-04)‡	5.44E-01(4.92E-04)†	6.49E-01(2.29E-04)	6.82E-01(2.20E-04)‡	5.96E-01(1.57E-02)	5.86E-01(2.46E-02)
	50	6.98E-01(2.15E-04)	5.52E-01(3.35E-03)†	6.52E-01(2.74E-04)	6.99E-01(1.76E-04)	5.54E-01(2.23E-02)	6.05E-01(2.31E-02)
	200	7.03E-01(3.07E-04)‡	6.38E-01(2.73E-03)‡	6.68E-01(2.41E-04)‡	6.93E-01(2.72E-04)‡	6.32E-01(8.87E-03)	5.93E-01(1.69E-02)

TABLE 51
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 4 TO 3 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	0.00E+00(0.00E+00)	4.88E-04(4.16E-06)	0.00E+00(0.00E+00)	9.16E-02(1.78E-02)†	0.00E+00(0.00E+00)	0.00E+00(0.00E+00)
	25	0.00E+00(0.00E+00)†	7.12E-01(1.74E-02)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	2.67E-02(4.46E-03)†	1.14E-01(2.19E-02)
	50	0.00E+00(0.00E+00)†	7.73E-01(8.13E-03)	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	3.66E-01(5.39E-02)†	6.51E-01(6.62E-02)
	200	0.00E+00(0.00E+00)†	9.25E-01(1.09E-03)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	6.79E-01(4.89E-02)†	8.60E-01(3.00E-02)
F2	5	7.49E-01(6.28E-03)†	8.78E-01(5.51E-05)†	8.38E-01(8.22E-05)†	2.56E-03(7.92E-05)†	9.02E-01(1.68E-05)†	9.11E-01(1.25E-05)
	25	8.78E-01(4.09E-04)†	9.03E-01(4.57E-06)†	8.94E-01(6.00E-05)†	1.94E-03(1.17E-04)†	9.17E-01(1.63E-06)†	9.22E-01(1.86E-06)
	50	9.03E-01(2.70E-05)†	9.08E-01(4.06E-06)†	9.03E-01(1.83E-05)†	3.20E-03(1.97E-04)†	9.19E-01(2.30E-06)†	9.24E-01(1.34E-06)
	200	9.11E-01(1.48E-05)†	9.16E-01(2.54E-06)†	9.04E-01(6.43E-05)†	3.31E-03(2.38E-04)†	9.21E-01(1.10E-06)†	9.25E-01(4.71E-07)
F3	5	0.00E+00(0.00E+00)	5.11E-05(8.10E-08)	0.00E+00(0.00E+00)	0.00E+00(0.00E+00)	0.00E+00(0.00E+00)	0.00E+00(0.00E+00)
	25	0.00E+00(0.00E+00)†	1.34E-01(2.17E-02)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)
	50	0.00E+00(0.00E+00)†	2.73E-01(3.95E-02)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	1.89E-02(4.46E-03)†	1.60E-01(4.71E-02)
	200	0.00E+00(0.00E+00)†	6.06E-01(1.52E-02)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	1.80E-01(4.34E-02)†	4.74E-01(3.05E-02)
F4	5	6.72E-02(2.76E-04)†	8.87E-01(1.05E-04)	6.85E-01(1.01E-03)†	6.46E-01(1.11E-02)†	8.55E-01(2.08E-04)†	8.87E-01(7.10E-05)
	25	5.72E-01(1.61E-03)†	8.90E-01(7.11E-05)†	8.21E-01(2.02E-04)†	8.46E-01(7.25E-03)†	9.00E-01(6.99E-05)†	9.11E-01(1.58E-05)
	50	7.90E-01(3.21E-04)†	8.97E-01(3.46E-05)†	8.45E-01(2.20E-05)†	8.43E-01(6.07E-03)†	9.04E-01(6.27E-05)†	9.14E-01(2.18E-05)
	200	8.56E-01(9.91E-06)†	9.07E-01(2.46E-05)†	8.49E-01(7.95E-05)†	8.63E-01(1.62E-03)†	9.05E-01(3.46E-05)†	9.13E-01(2.31E-05)
WFG1	5	7.79E-01(6.64E-05)†	6.50E-01(4.55E-04)†	7.61E-01(3.98E-05)†	4.28E-01(1.78E-03)†	7.71E-01(4.44E-05)†	7.88E-01(9.79E-05)
	25	8.54E-01(1.11E-04)†	7.40E-01(1.75E-04)†	8.43E-01(1.13E-04)†	4.28E-01(1.81E-03)†	8.65E-01(7.55E-05)†	8.84E-01(4.94E-05)
	50	8.92E-01(6.23E-05)†	7.66E-01(2.06E-04)†	8.84E-01(6.64E-05)†	4.27E-01(1.86E-03)†	9.04E-01(1.99E-05)†	9.15E-01(1.30E-05)
	200	9.23E-01(2.37E-06)†	8.12E-01(1.41E-04)†	9.22E-01(4.49E-06)†	4.27E-01(1.86E-03)†	9.31E-01(1.03E-06)†	9.31E-01(7.69E-07)
WFG2	5	7.77E-01(3.42E-03)†	6.23E-01(2.24E-03)†	7.99E-01(2.32E-03)†	2.61E-01(4.04E-05)†	8.20E-01(3.73E-03)†	8.89E-01(9.12E-04)
	25	8.10E-01(2.81E-03)†	6.98E-01(3.27E-03)†	8.07E-01(3.55E-03)†	2.65E-01(2.87E-05)†	8.65E-01(3.71E-03)†	9.29E-01(4.44E-05)
	50	8.13E-01(3.26E-03)†	7.20E-01(2.38E-03)†	7.98E-01(3.31E-03)†	2.64E-01(3.98E-05)†	8.50E-01(4.03E-03)†	9.30E-01(6.42E-05)
	200	8.07E-01(3.66E-03)†	7.55E-01(2.75E-03)†	8.02E-01(4.09E-03)†	2.66E-01(4.42E-05)†	8.54E-01(4.26E-03)†	9.41E-01(2.14E-05)
WFG3	5	5.40E-01(1.67E-03)†	4.67E-01(1.36E-03)†	5.43E-01(6.66E-04)†	2.66E-01(3.00E-05)†	5.58E-01(5.93E-04)	5.69E-01(4.58E-04)
	25	5.80E-01(1.71E-03)	5.59E-01(9.85E-04)†	5.77E-01(1.49E-03)†	2.70E-01(4.70E-05)†	5.89E-01(8.83E-04)	6.00E-01(4.16E-04)
	50	5.92E-01(1.74E-03)†	5.63E-01(1.22E-03)†	5.79E-01(1.50E-03)†	2.73E-01(3.49E-05)†	6.01E-01(1.72E-03)†	6.26E-01(6.15E-04)
	200	5.94E-01(1.72E-03)†	5.66E-01(1.09E-03)†	5.85E-01(1.95E-03)†	2.76E-01(2.33E-05)†	5.93E-01(1.38E-03)†	6.26E-01(6.00E-04)
WFG4	5	6.34E-01(1.10E-04)†	4.72E-01(1.75E-03)†	5.97E-01(1.02E-04)†	3.04E-01(1.20E-04)†	6.85E-01(3.39E-05)†	6.99E-01(1.39E-05)
	25	6.67E-01(4.17E-05)†	6.08E-01(2.31E-04)†	6.43E-01(7.18E-05)†	3.35E-01(1.07E-04)†	7.23E-01(5.47E-06)†	7.28E-01(5.13E-06)
	50	6.76E-01(4.70E-05)†	6.45E-01(6.42E-05)†	6.45E-01(9.18E-05)†	3.43E-01(7.18E-05)†	7.26E-01(4.26E-06)†	7.32E-01(1.54E-06)
	200	6.85E-01(3.31E-05)†	6.76E-01(9.28E-06)†	6.57E-01(4.51E-05)†	3.54E-01(2.89E-05)†	7.28E-01(1.25E-06)†	7.34E-01(1.45E-06)
WFG5	5	6.19E-01(1.10E-04)†	5.49E-01(3.31E-04)†	5.69E-01(1.15E-04)†	5.74E-01(3.47E-05)†	6.67E-01(5.74E-05)†	6.72E-01(5.31E-05)
	25	6.51E-01(6.34E-05)†	6.35E-01(5.74E-05)†	6.26E-01(7.91E-05)†	5.94E-01(3.37E-05)†	7.06E-01(6.14E-06)†	7.11E-01(6.95E-06)
	50	6.58E-01(3.77E-05)†	6.45E-01(2.81E-05)†	6.36E-01(7.54E-05)†	5.97E-01(2.54E-05)†	7.11E-01(6.35E-07)†	7.15E-01(9.37E-07)
	200	6.66E-01(2.55E-05)†	6.59E-01(3.16E-05)†	6.41E-01(6.29E-05)†	5.98E-01(1.35E-05)†	7.12E-01(7.46E-07)†	7.17E-01(4.54E-07)
WFG6	5	3.68E-01(2.63E-02)†	1.89E-01(1.18E-02)†	3.43E-01(2.21E-02)†	1.77E-01(4.69E-06)†	4.08E-01(2.85E-02)†	4.59E-01(4.10E-02)
	25	3.70E-01(3.84E-02)†	3.24E-01(2.67E-02)†	3.60E-01(3.83E-02)†	1.83E-01(3.30E-06)†	3.80E-01(4.19E-02)†	5.87E-01(3.88E-02)
	50	3.73E-01(3.92E-02)†	3.61E-01(3.30E-02)†	3.55E-01(3.69E-02)†	1.84E-01(2.05E-06)†	4.69E-01(5.07E-02)	5.13E-01(5.77E-02)
	200	3.92E-01(3.91E-02)†	3.71E-01(3.95E-02)†	3.49E-01(3.78E-02)†	1.85E-01(2.45E-06)†	4.28E-01(5.08E-02)†	6.59E-01(1.60E-02)
WFG7	5	6.04E-01(1.41E-04)†	3.84E-01(1.55E-03)†	5.55E-01(2.13E-04)†	4.37E-01(2.63E-04)†	6.35E-01(4.37E-05)†	6.67E-01(4.85E-05)
	25	6.59E-01(6.96E-05)†	5.30E-01(3.08E-04)†	6.29E-01(9.32E-05)†	5.60E-01(1.17E-04)†	7.01E-01(1.67E-05)†	7.12E-01(1.09E-05)
	50	6.66E-01(5.17E-05)†	5.75E-01(1.05E-04)†	6.43E-01(8.24E-05)†	5.78E-01(1.81E-04)†	7.07E-01(1.28E-05)†	7.17E-01(8.77E-06)
	200	6.75E-01(3.21E-05)†	6.44E-01(3.50E-05)†	6.52E-01(1.13E-04)†	6.11E-01(8.30E-05)†	7.13E-01(1.03E-05)†	7.22E-01(9.95E-06)
WFG8	5	5.98E-01(1.48E-04)†	3.96E-01(6.96E-04)†	5.55E-01(1.60E-04)†	4.36E-01(2.03E-04)†	6.39E-01(4.71E-05)†	6.65E-01(5.83E-05)
	25	6.59E-01(6.96E-05)†	5.30E-01(3.08E-04)†	6.29E-01(9.32E-05)†	5.62E-01(2.18E-04)†	7.02E-01(1.29E-05)†	7.12E-01(1.70E-05)
	50	6.69E-01(5.22E-05)†	5.77E-01(1.69E-04)†	6.40E-01(8.43E-05)†	5.80E-01(1.95E-04)†	7.07E-01(1.39E-05)†	7.17E-01(1.76E-05)
	200	6.75E-01(5.09E-05)†	6.43E-01(4.02E-05)†	6.49E-01(1.06E-04)†	6.16E-01(1.14E-04)†	7.14E-01(9.88E-06)†	7.21E-01(5.28E-06)
WFG9	5	5.49E-01(9.95E-03)‡	2.42E-01(6.19E-03)†	4.62E-01(8.64E-03)	5.33E-01(3.68E-04)‡	4.31E-01(1.16E-02)†	4.94E-01(1.09E-02)
	25	6.59E-01(6.96E-05)	5.30E-01(3.08E-04)†	6.29E-01(9.32E-05)	6.15E-01(1.50E-04)	5.72E-01(1.40E-02)	5.76E-01(1.69E-02)
	50	6.31E-01(1.72E-03)	5.19E-01(1.47E-02)	6.13E-01(1.42E-03)	6.31E-01(1.27E-04)	5.18E-01(1.97E-02)†	5.85E-01(1.21E-02)
	200	6.38E-01(2.07E-03)‡	5.94E-01(6.67E-03)‡	6.20E-01(9.27E-04)‡	6.27E-01(2.66E-04)‡	5.14E-01(2.54E-02)	5.53E-01(1.54E-02)

TABLE 52
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 3 TO 2 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	0.00E+00(0.00E+00)	0.00E+00(0.00E+00)	0.00E+00(0.00E+00)	7.28E-02(1.56E-02)‡	0.00E+00(0.00E+00)	4.81E-02(2.41E-02)
	25	0.00E+00(0.00E+00)†	8.32E-02(2.28E-03)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	5.84E-02(3.50E-02)
	50	0.00E+00(0.00E+00)†	1.00E-01(2.74E-03)	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	1.38E-01(3.20E-02)	1.63E-01(2.74E-02)
	200	4.29E-02(1.55E-03)†	2.05E-01(2.03E-03)†	4.47E-02(9.12E-04)†	0.00E+00(0.00E+00)†	2.40E-01(3.66E-02)	2.93E-01(2.96E-02)
F2	5	5.55E-01(6.34E-03)†	5.95E-01(1.13E-03)†	5.45E-01(1.93E-04)†	3.00E-01(3.98E-02)†	7.75E-01(6.45E-05)‡	7.52E-01(1.78E-03)
	25	7.47E-01(3.34E-05)†	7.04E-01(1.12E-04)†	5.90E-01(4.88E-04)†	7.65E-01(7.47E-05)†	7.88E-01(6.47E-05)	7.82E-01(5.75E-04)
	50	7.51E-01(2.45E-05)†	7.20E-01(9.47E-05)†	5.86E-01(4.43E-04)†	7.80E-01(1.32E-05)†	7.89E-01(1.15E-04)	7.93E-01(5.12E-05)
	200	7.55E-01(2.00E-05)†	7.34E-01(1.13E-05)†	5.83E-01(4.54E-04)†	7.89E-01(2.96E-06)†	7.91E-01(5.40E-05)†	7.92E-01(3.76E-04)
F3	5	0.00E+00(0.00E+00)	0.00E+00(0.00E+00)	0.00E+00(0.00E+00)	0.00E+00(0.00E+00)	0.00E+00(0.00E+00)	6.47E-03(1.30E-03)
	25	0.00E+00(0.00E+00)	1.78E-02(8.86E-04)†	0.00E+00(0.00E+00)	0.00E+00(0.00E+00)	0.00E+00(0.00E+00)	3.33E-02(2.05E-02)
	50	0.00E+00(0.00E+00)†	4.34E-02(3.10E-03)	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	5.01E-02(8.49E-03)
	200	3.05E-02(1.17E-03)†	1.94E-01(4.81E-03)	4.29E-02(2.79E-03)†	0.00E+00(0.00E+00)†	1.27E-01(1.78E-02)	1.74E-01(3.18E-02)
F4	5	1.29E-02(5.36E-05)†	5.53E-01(8.83E-04)†	4.00E-01(1.92E-03)†	6.12E-01(2.57E-03)†	6.64E-01(7.93E-04)†	7.23E-01(4.04E-04)
	25	6.40E-01(1.84E-04)†	6.35E-01(5.50E-04)†	6.55E-01(2.44E-03)†	7.57E-01(3.14E-04)‡	7.40E-01(2.28E-04)†	7.49E-01(4.32E-04)
	50	6.90E-01(4.72E-06)†	6.60E-01(1.72E-04)†	6.56E-01(3.16E-03)†	7.58E-01(9.86E-05)	7.41E-01(1.96E-04)†	7.56E-01(1.08E-04)
	200	6.94E-01(9.67E-07)†	6.87E-01(3.61E-05)†	6.53E-01(2.98E-03)†	7.51E-01(2.92E-04)‡	7.42E-01(2.64E-04)	7.46E-01(1.45E-04)
WFG1	5	6.40E-01(6.03E-05)†	5.05E-01(5.11E-04)†	5.52E-01(1.29E-03)†	3.28E-01(1.12E-03)†	6.09E-01(8.11E-05)†	6.61E-01(7.68E-05)
	25	7.23E-01(5.11E-05)†	6.20E-01(1.23E-04)†	6.39E-01(1.47E-03)†	3.28E-01(1.12E-03)†	6.98E-01(1.02E-04)†	7.46E-01(3.05E-05)
	50	7.53E-01(1.83E-05)†	6.59E-01(9.58E-05)†	6.77E-01(1.34E-03)†	3.30E-01(1.03E-03)†	7.31E-01(9.95E-05)†	7.70E-01(6.10E-06)
	200	7.80E-01(6.01E-07)†	7.03E-01(2.71E-05)†	7.12E-01(3.47E-04)†	3.31E-01(1.07E-03)†	7.60E-01(3.08E-05)†	7.84E-01(1.19E-06)
WFG2	5	5.37E-01(1.04E-03)†	3.78E-01(4.98E-03)†	5.45E-01(4.29E-04)†	3.32E-01(3.42E-05)†	6.14E-01(1.53E-03)‡	5.96E-01(1.14E-03)
	25	6.58E-01(1.04E-04)‡	5.73E-01(2.72E-03)†	5.78E-01(3.69E-04)†	3.41E-01(2.48E-06)†	6.56E-01(1.27E-03)‡	6.15E-01(1.04E-03)
	50	6.57E-01(2.40E-04)‡	6.14E-01(1.40E-03)	5.81E-01(1.98E-04)†	3.42E-01(2.31E-06)†	6.54E-01(1.71E-03)‡	6.15E-01(9.43E-04)
	200	6.59E-01(1.37E-04)‡	6.24E-01(7.00E-06)†	5.70E-01(5.06E-04)†	3.44E-01(4.15E-09)†	6.51E-01(5.99E-04)‡	6.26E-01(8.13E-04)
WFG3	5	4.55E-01(8.18E-05)†	4.39E-01(3.31E-04)†	4.33E-01(5.66E-05)†	3.46E-01(6.08E-05)†	5.43E-01(1.87E-04)†	5.74E-01(4.40E-04)
	25	5.12E-01(3.34E-05)†	4.93E-01(1.95E-04)†	4.88E-01(1.02E-04)†	3.60E-01(5.44E-06)†	5.91E-01(5.82E-04)†	6.11E-01(5.10E-04)
	50	5.15E-01(2.74E-05)†	4.98E-01(1.84E-04)†	4.90E-01(5.32E-05)†	3.60E-01(6.48E-06)†	5.81E-01(6.01E-04)†	6.01E-01(1.74E-04)
	200	5.16E-01(3.41E-05)†	5.01E-01(2.00E-04)†	4.91E-01(4.12E-05)†	3.60E-01(4.11E-06)†	5.72E-01(2.73E-04)†	5.92E-01(3.39E-04)
WFG4	5	4.95E-01(9.38E-05)†	3.94E-01(2.86E-04)†	4.49E-01(3.43E-05)†	2.83E-01(1.41E-04)†	5.30E-01(3.27E-05)†	5.36E-01(2.09E-05)
	25	5.20E-01(1.04E-04)†	4.66E-01(6.80E-05)†	4.74E-01(4.18E-05)†	3.08E-01(4.51E-05)†	5.61E-01(1.31E-05)‡	5.57E-01(6.56E-05)
	50	5.24E-01(9.71E-05)†	4.82E-01(6.00E-05)†	4.78E-01(4.50E-05)†	3.17E-01(2.76E-05)†	5.64E-01(1.29E-05)†	5.66E-01(4.42E-05)
	200	5.30E-01(9.03E-05)†	5.01E-01(3.94E-05)†	4.84E-01(5.37E-05)†	3.33E-01(1.59E-05)†	5.64E-01(1.52E-05)†	5.70E-01(4.79E-05)
WFG5	5	4.83E-01(1.35E-04)†	4.27E-01(9.83E-05)†	4.10E-01(5.52E-05)†	5.32E-01(2.59E-05)†	4.87E-01(8.44E-05)	4.90E-01(1.72E-04)
	25	5.13E-01(5.67E-05)†	4.79E-01(4.61E-05)†	4.41E-01(3.46E-05)†	5.51E-01(5.19E-06)‡	5.18E-01(6.58E-05)†	5.40E-01(1.82E-04)
	50	5.18E-01(5.78E-05)†	4.91E-01(2.44E-05)†	4.43E-01(5.90E-05)†	5.50E-01(7.95E-06)	5.18E-01(1.70E-04)†	5.49E-01(7.69E-05)
	200	5.22E-01(4.43E-05)†	5.07E-01(1.62E-05)†	4.46E-01(5.50E-05)†	5.49E-01(1.01E-05)	5.22E-01(1.08E-04)†	5.50E-01(9.76E-05)
WFG6	5	4.29E-01(3.41E-04)†	3.01E-01(4.12E-04)†	3.65E-01(1.41E-04)†	2.23E-01(1.88E-05)†	4.08E-01(8.43E-03)†	5.00E-01(4.64E-04)
	25	4.96E-01(6.40E-05)†	4.20E-01(8.55E-05)†	4.20E-01(7.32E-05)†	2.29E-01(1.16E-05)†	4.87E-01(6.44E-03)†	5.53E-01(3.81E-04)
	50	5.04E-01(6.21E-05)†	4.43E-01(1.28E-04)†	4.30E-01(6.96E-05)†	2.31E-01(7.64E-06)†	5.18E-01(8.79E-04)†	5.63E-01(5.05E-05)
	200	5.08E-01(4.90E-05)†	4.82E-01(1.95E-05)†	4.34E-01(6.79E-05)†	2.32E-01(9.58E-06)†	5.26E-01(2.77E-04)†	5.62E-01(4.90E-04)
WFG7	5	4.71E-01(1.76E-04)†	2.49E-01(1.88E-03)†	3.72E-01(1.27E-04)†	3.82E-01(1.67E-04)†	4.75E-01(9.48E-05)†	5.29E-01(3.80E-05)
	25	5.25E-01(8.19E-05)†	3.46E-01(2.04E-04)†	4.17E-01(2.61E-04)†	4.96E-01(3.63E-05)†	5.20E-01(1.24E-04)†	5.65E-01(1.64E-05)
	50	5.33E-01(8.56E-05)†	3.92E-01(2.18E-04)†	4.24E-01(1.87E-04)†	5.10E-01(2.81E-05)†	5.24E-01(8.80E-05)†	5.68E-01(7.75E-06)
	200	5.40E-01(4.89E-05)†	4.77E-01(8.76E-05)†	4.25E-01(2.10E-04)†	5.19E-01(1.71E-05)†	5.27E-01(1.25E-04)†	5.69E-01(7.52E-06)
WFG8	5	4.65E-01(2.55E-04)†	2.51E-01(2.42E-04)†	3.73E-01(9.94E-05)†	3.80E-01(1.95E-04)†	4.77E-01(7.29E-05)†	5.27E-01(5.80E-05)
	25	5.25E-01(8.19E-05)†	3.46E-01(2.04E-04)†	4.17E-01(2.61E-04)†	4.97E-01(3.94E-05)†	5.23E-01(8.64E-05)†	5.65E-01(1.68E-05)
	50	5.31E-01(1.20E-04)†	3.93E-01(2.74E-04)†	4.26E-01(1.63E-04)†	5.10E-01(3.35E-05)†	5.24E-01(8.24E-05)†	5.69E-01(9.57E-06)
	200	5.37E-01(1.15E-04)†	4.75E-01(1.85E-04)†	4.30E-01(1.22E-04)†	5.19E-01(1.30E-05)†	5.29E-01(3.42E-05)†	5.68E-01(1.20E-05)
WFG9	5	4.43E-01(3.75E-04)‡	2.28E-01(6.59E-04)†	3.50E-01(5.09E-04)	4.53E-01(3.22E-04)‡	3.55E-01(1.03E-03)	3.61E-01(4.34E-03)
	25	5.25E-01(8.19E-05)	3.46E-01(2.04E-04)†	4.17E-01(2.61E-04)	5.32E-01(2.80E-05)	4.37E-01(2.38E-03)	4.57E-01(8.40E-03)
	50	5.13E-01(8.58E-05)	3.96E-01(1.28E-03)	4.57E-01(4.67E-05)g	5.36E-01(2.61E-05)	4.23E-01(1.93E-03)	4.55E-01(7.06E-03)
	200	5.15E-01(9.03E-05)‡	4.80E-01(1.45E-03)‡	4.59E-01(7.59E-05)‡	5.35E-01(5.08E-05)‡	4.25E-01(2.04E-03)	4.43E-01(6.12E-03)

TABLE 53
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 2 TO 3 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	0.00E+00(0.00E+00)†	7.31E-03(5.19E-04)	0.00E+00(0.00E+00)†	3.37E-03(3.52E-04)†	0.00E+00(0.00E+00)†	1.31E-01(9.44E-02)
	25	0.00E+00(0.00E+00)†	9.55E-01(4.16E-05)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	4.16E-01(6.28E-02)†	8.48E-01(2.16E-02)
	50	5.77E-02(9.65E-03)†	9.69E-01(1.15E-07)†	4.65E-02(6.75E-03)†	0.00E+00(0.00E+00)†	9.54E-01(5.79E-04)†	9.92E-01(3.09E-04)
	200	9.70E-01(1.37E-09)†	9.70E-01(8.87E-12)†	9.68E-01(4.74E-07)†	0.00E+00(0.00E+00)†	9.70E-01(1.96E-10)†	9.97E-01(2.01E-07)
F2	5	7.94E-01(7.47E-04)†	8.02E-01(1.21E-04)†	8.39E-01(3.86E-04)†	7.26E-01(5.01E-03)†	8.03E-01(5.02E-04)†	9.23E-01(4.29E-05)
	25	7.67E-01(6.62E-07)†	7.73E-01(2.78E-06)†	7.93E-01(2.92E-04)†	6.27E-01(6.54E-03)†	7.68E-01(1.11E-05)†	9.15E-01(1.11E-03)
	50	7.65E-01(1.45E-07)†	7.69E-01(6.14E-07)†	8.00E-01(9.68E-05)†	4.35E-01(6.32E-03)†	7.66E-01(1.06E-05)†	9.27E-01(1.53E-05)
	200	7.64E-01(1.59E-07)†	7.64E-01(1.77E-08)†	8.02E-01(2.02E-04)†	3.67E-01(1.63E-03)†	7.64E-01(4.09E-07)†	9.26E-01(1.74E-05)
F3	5	0.00E+00(0.00E+00)	0.00E+00(0.00E+00)	0.00E+00(0.00E+00)	0.00E+00(0.00E+00)	0.00E+00(0.00E+00)	3.00E-02(2.60E-02)
	25	0.00E+00(0.00E+00)†	6.83E-01(8.80E-04)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	7.16E-03(8.81E-04)†	2.52E-01(8.96E-02)
	50	1.38E-03(5.87E-05)†	7.58E-01(3.08E-06)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	5.03E-01(7.20E-02)†	8.98E-01(1.16E-02)
	200	7.63E-01(6.07E-08)†	7.63E-01(6.75E-10)†	7.58E-01(1.20E-05)†	0.00E+00(0.00E+00)†	7.64E-01(6.38E-10)†	9.28E-01(3.41E-07)
F4	5	5.17E-01(3.82E-03)†	8.03E-01(1.18E-03)†	8.12E-01(1.75E-03)	7.04E-01(3.82E-04)†	8.04E-01(1.21E-03)†	8.24E-01(2.43E-03)
	25	8.02E-01(1.45E-07)†	8.01E-01(6.62E-08)†	7.95E-01(1.49E-04)†	7.93E-01(4.67E-05)†	8.02E-01(9.52E-08)†	8.05E-01(3.06E-04)
	50	8.03E-01(6.66E-10)‡	8.02E-01(7.34E-09)	8.05E-01(2.13E-04)	7.91E-01(3.84E-05)†	8.03E-01(1.65E-09)‡	7.97E-01(9.84E-05)
	200	8.03E-01(9.45E-11)‡	8.03E-01(4.36E-11)‡	8.03E-01(9.86E-05)	7.89E-01(1.29E-04)†	8.03E-01(1.37E-09)‡	7.98E-01(8.30E-05)
WFG1	5	8.13E-01(1.12E-04)†	6.73E-01(3.87E-04)†	7.82E-01(1.56E-04)†	3.24E-01(1.02E-02)†	7.96E-01(1.50E-04)†	8.36E-01(1.41E-04)
	25	8.15E-01(4.14E-05)†	7.67E-01(3.83E-04)†	8.17E-01(4.24E-04)†	2.38E-01(2.52E-05)†	8.54E-01(4.96E-04)†	8.99E-01(1.06E-03)
	50	8.31E-01(2.31E-06)†	7.96E-01(5.39E-04)†	8.27E-01(3.31E-06)†	2.37E-01(2.20E-05)†	8.32E-01(3.48E-06)†	9.42E-01(8.87E-05)
	200	8.41E-01(1.54E-07)†	8.14E-01(6.32E-06)†	8.41E-01(1.85E-07)†	2.37E-01(2.33E-05)†	8.43E-01(9.25E-08)†	9.50E-01(4.04E-04)
WFG2	5	8.18E-01(1.52E-04)†	7.93E-01(2.66E-04)†	8.33E-01(6.16E-05)†	2.67E-01(6.10E-06)†	8.23E-01(6.65E-05)†	9.45E-01(9.71E-06)
	25	8.26E-01(3.35E-07)†	8.19E-01(3.67E-05)†	8.37E-01(5.27E-05)†	2.73E-01(3.04E-08)†	8.27E-01(3.97E-07)†	9.60E-01(1.90E-06)
	50	8.28E-01(6.30E-08)†	8.23E-01(3.93E-05)†	8.34E-01(4.03E-05)†	2.73E-01(2.20E-09)†	8.28E-01(1.23E-08)†	9.61E-01(3.02E-07)
	200	8.28E-01(3.57E-10)†	8.25E-01(1.48E-05)†	8.37E-01(4.95E-05)†	2.73E-01(3.75E-11)†	8.28E-01(1.77E-09)†	9.61E-01(3.61E-07)
WFG3	5	6.53E-01(3.16E-04)†	5.88E-01(3.84E-04)†	6.02E-01(1.18E-04)†	2.73E-01(3.80E-05)†	6.05E-01(2.42E-04)†	6.70E-01(1.48E-04)
	25	7.13E-01(3.80E-06)‡	6.98E-01(1.98E-06)†	7.11E-01(4.03E-06)‡	2.84E-01(7.64E-08)†	6.96E-01(1.25E-05)†	7.09E-01(3.36E-06)
	50	7.20E-01(2.19E-07)‡	7.10E-01(8.44E-07)†	7.17E-01(4.53E-06)‡	2.85E-01(1.44E-08)†	7.11E-01(3.00E-06)†	7.16E-01(7.04E-07)
	200	7.22E-01(7.42E-09)‡	7.19E-01(7.52E-08)†	7.20E-01(2.53E-06)†	2.85E-01(2.38E-10)†	7.22E-01(6.68E-08)‡	7.22E-01(1.67E-08)
WFG4	5	4.68E-01(1.83E-04)†	5.79E-01(3.27E-04)†	5.13E-01(4.13E-04)†	3.05E-01(1.24E-03)†	4.80E-01(5.02E-04)†	7.08E-01(8.49E-05)
	25	4.56E-01(4.08E-07)†	4.61E-01(3.32E-04)†	5.14E-01(6.12E-04)†	2.38E-01(2.06E-05)†	4.59E-01(1.11E-06)†	7.34E-01(4.17E-06)
	50	4.59E-01(1.01E-07)†	4.51E-01(2.59E-05)†	5.05E-01(3.96E-04)†	2.35E-01(4.79E-06)†	4.60E-01(1.13E-07)†	7.36E-01(1.67E-06)
	200	4.60E-01(8.59E-09)†	4.52E-01(3.75E-06)†	5.22E-01(3.02E-04)†	2.39E-01(6.45E-07)†	4.60E-01(6.03E-08)†	7.36E-01(2.46E-06)
WFG5	5	4.54E-01(4.72E-04)†	5.86E-01(5.79E-04)†	5.18E-01(1.90E-04)†	5.47E-01(1.31E-03)†	5.65E-01(2.32E-03)†	6.84E-01(8.55E-05)
	25	4.34E-01(7.34E-06)†	4.18E-01(1.68E-05)†	5.05E-01(1.54E-04)†	4.39E-01(2.78E-07)†	4.46E-01(2.33E-06)†	7.06E-01(4.41E-05)
	50	4.34E-01(1.09E-05)†	4.18E-01(7.85E-06)†	5.13E-01(2.01E-04)†	4.39E-01(3.48E-07)†	4.47E-01(1.48E-06)†	7.09E-01(1.90E-05)
	200	4.36E-01(2.75E-06)†	4.21E-01(1.55E-05)†	5.23E-01(1.27E-04)†	4.39E-01(2.20E-06)†	4.48E-01(3.57E-08)†	7.08E-01(1.82E-05)
WFG6	5	4.65E-01(1.33E-04)†	5.13E-01(4.87E-04)†	4.94E-01(2.01E-04)†	1.78E-01(4.70E-06)†	4.75E-01(8.88E-04)†	6.88E-01(5.17E-04)
	25	4.38E-01(1.43E-06)†	4.44E-01(2.25E-05)†	4.69E-01(3.17E-04)†	1.88E-01(1.92E-06)†	4.26E-01(3.50E-03)†	7.29E-01(1.79E-04)
	50	4.39E-01(5.09E-07)†	4.40E-01(2.11E-06)†	4.73E-01(1.34E-04)†	1.89E-01(1.02E-06)†	4.39E-01(1.24E-06)†	7.36E-01(9.62E-06)
	200	4.40E-01(3.04E-07)†	4.39E-01(9.37E-08)†	4.82E-01(9.23E-05)†	1.89E-01(8.87E-07)†	4.41E-01(7.88E-08)†	7.37E-01(7.05E-06)
WFG7	5	5.51E-01(7.05E-04)†	4.40E-01(1.11E-03)†	5.62E-01(3.45E-04)†	5.15E-01(1.50E-04)†	5.35E-01(8.06E-04)†	7.03E-01(2.69E-04)
	25	4.41E-01(2.16E-06)†	5.85E-01(1.55E-03)†	4.54E-01(2.38E-04)†	4.59E-01(5.88E-05)†	4.43E-01(8.03E-06)†	7.26E-01(6.29E-05)
	50	4.41E-01(6.44E-08)†	4.58E-01(1.50E-04)†	4.56E-01(2.58E-05)†	4.65E-01(1.82E-05)†	4.41E-01(6.50E-07)†	7.25E-01(4.86E-05)
	200	4.41E-01(1.52E-09)†	4.40E-01(1.06E-06)†	4.66E-01(1.85E-05)†	4.62E-01(1.06E-05)†	4.41E-01(5.62E-09)†	7.28E-01(1.82E-05)
WFG8	5	5.46E-01(3.90E-04)†	4.49E-01(7.41E-04)†	5.57E-01(6.46E-04)†	5.12E-01(2.09E-04)†	5.58E-01(1.30E-03)†	6.93E-01(6.36E-04)
	25	4.41E-01(2.16E-06)†	5.85E-01(1.55E-03)†	4.54E-01(2.38E-04)†	4.62E-01(3.14E-05)†	4.44E-01(4.71E-06)†	7.24E-01(7.45E-05)
	50	4.41E-01(1.15E-07)†	4.64E-01(2.83E-04)†	4.57E-01(4.58E-05)†	4.62E-01(2.14E-05)†	4.41E-01(4.68E-07)†	7.26E-01(5.61E-05)
	200	4.41E-01(4.23E-09)†	4.41E-01(1.57E-06)†	4.66E-01(3.36E-05)†	4.63E-01(1.59E-05)†	4.41E-01(1.38E-08)†	7.29E-01(8.25E-06)
WFG9	5	5.79E-01(1.83E-04)‡	4.14E-01(1.30E-03)†	5.69E-01(9.88E-04)‡	5.66E-01(3.45E-04)‡	5.12E-01(5.12E-03)†	5.65E-01(7.39E-03)
	25	4.41E-01(2.16E-06)†	5.85E-01(1.55E-03)	4.54E-01(2.38E-04)†	5.81E-01(5.41E-04)	5.23E-01(3.29E-03)†	6.32E-01(9.14E-03)
	50	5.64E-01(1.11E-03)	5.67E-01(2.45E-03)	5.57E-01(3.69E-04)	5.83E-01(6.98E-04)	5.02E-01(7.47E-03)†	6.19E-01(8.98E-03)
	200	5.65E-01(1.79E-03)	5.66E-01(3.22E-03)	5.66E-01(1.00E-04)	5.73E-01(6.78E-04)	4.68E-01(7.37E-03)†	5.95E-01(7.76E-03)

TABLE 54
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 3 TO 4 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	0.00E+00(0.00E+00)†	2.68E-01(3.86E-02)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	2.31E-02(8.45E-03)†	1.92E-01(1.11E-01)
	25	3.50E-02(2.33E-02)†	9.96E-01(7.28E-08)	6.57E-03(1.19E-03)†	0.00E+00(0.00E+00)†	9.30E-01(3.54E-03)†	9.86E-01(2.69E-04)
	50	6.96E-01(7.71E-02)†	9.97E-01(1.47E-09)†	8.09E-01(3.23E-02)†	0.00E+00(0.00E+00)†	9.95E-01(2.13E-05)†	1.00E+00(7.30E-08)
	200	9.97E-01(1.25E-09)†	9.97E-01(1.65E-11)†	9.96E-01(1.98E-07)†	0.00E+00(0.00E+00)†	9.97E-01(2.53E-07)†	1.00E+00(1.21E-10)
F2	5	8.47E-01(5.55E-04)†	9.12E-01(6.97E-05)†	8.95E-01(1.56E-04)†	7.84E-01(1.43E-02)†	9.02E-01(9.43E-05)†	9.65E-01(1.39E-04)
	25	8.98E-01(1.03E-04)†	9.16E-01(4.14E-06)†	9.08E-01(2.42E-05)†	8.57E-01(9.96E-05)†	9.15E-01(4.14E-07)†	9.70E-01(1.13E-05)
	50	9.11E-01(3.22E-06)†	9.16E-01(1.07E-06)†	9.05E-01(4.42E-05)†	8.61E-01(1.70E-04)†	9.15E-01(9.92E-07)†	9.70E-01(4.61E-05)
	200	9.12E-01(2.18E-06)†	9.15E-01(7.52E-08)†	9.05E-01(3.17E-05)†	8.54E-01(1.95E-05)†	9.15E-01(1.96E-07)†	9.72E-01(5.79E-06)
F3	5	0.00E+00(0.00E+00)†	2.49E-02(3.42E-03)	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	5.63E-02(3.56E-02)
	25	0.00E+00(0.00E+00)†	8.95E-01(1.27E-05)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	3.74E-01(8.34E-02)†	6.51E-01(1.03E-01)
	50	2.95E-01(1.23E-01)†	9.09E-01(5.99E-07)†	2.80E-01(1.16E-01)†	0.00E+00(0.00E+00)†	8.62E-01(1.09E-02)†	9.72E-01(4.63E-06)
	200	9.12E-01(2.04E-07)†	9.14E-01(1.78E-08)‡	8.94E-01(1.41E-05)†	0.00E+00(0.00E+00)†	9.13E-01(2.88E-05)†	9.73E-01(7.58E-08)
F4	5	7.83E-01(1.66E-03)†	9.08E-01(8.53E-05)	9.07E-01(1.20E-04)	8.21E-01(1.51E-03)†	8.99E-01(3.27E-04)†	8.72E-01(3.04E-03)
	25	8.15E-01(1.15E-03)	9.11E-01(1.26E-03)‡	8.74E-01(3.39E-03)	8.77E-01(2.94E-03)	9.29E-01(3.12E-08)‡	8.57E-01(3.29E-03)
	50	9.27E-01(2.40E-06)‡	9.18E-01(9.51E-04)‡	9.25E-01(6.30E-05)‡	9.07E-01(1.71E-03)‡	9.30E-01(1.34E-08)‡	8.47E-01(2.84E-03)
	200	9.27E-01(1.25E-06)‡	9.29E-01(2.97E-08)‡	9.23E-01(2.25E-05)‡	9.26E-01(1.99E-05)‡	9.30E-01(2.94E-09)‡	8.40E-01(2.90E-03)
WFG1	5	8.64E-01(2.97E-04)†	7.27E-01(8.48E-04)†	8.30E-01(2.18E-04)†	3.93E-01(3.06E-04)†	8.45E-01(2.17E-04)†	8.85E-01(1.35E-04)
	25	9.43E-01(1.47E-05)†	8.22E-01(1.34E-04)†	9.36E-01(3.93E-05)†	3.69E-01(4.01E-04)†	9.46E-01(2.59E-05)†	9.76E-01(5.23E-06)
	50	9.62E-01(5.29E-06)†	8.64E-01(6.86E-05)†	9.59E-01(3.37E-06)†	3.65E-01(1.54E-04)	9.66E-01(2.49E-06)†	9.85E-01(2.18E-06)
	200	9.71E-01(2.96E-07)†	9.29E-01(2.70E-05)†	9.70E-01(2.90E-07)†	3.71E-01(3.64E-04)†	9.74E-01(5.31E-08)†	9.88E-01(1.44E-06)
WFG2	5	8.89E-01(3.95E-04)†	8.61E-01(1.94E-04)†	9.28E-01(9.60E-05)†	2.53E-01(1.20E-06)†	9.28E-01(5.76E-05)†	9.79E-01(7.37E-06)
	25	9.63E-01(2.34E-05)†	9.32E-01(1.36E-05)†	9.66E-01(1.04E-06)†	2.56E-01(2.54E-08)†	9.70E-01(2.06E-07)†	9.93E-01(1.82E-07)
	50	9.69E-01(2.51E-07)†	9.46E-01(4.36E-06)†	9.68E-01(5.51E-07)†	2.56E-01(2.82E-09)†	9.72E-01(3.31E-08)†	9.94E-01(7.79E-08)
	200	9.70E-01(1.74E-07)†	9.59E-01(1.35E-06)†	9.69E-01(5.17E-07)†	2.57E-01(1.80E-10)†	9.73E-01(2.45E-09)†	9.94E-01(1.11E-07)
WFG3	5	6.64E-01(1.62E-04)	6.21E-01(1.61E-04)†	6.40E-01(6.04E-05)†	2.58E-01(2.40E-05)†	6.30E-01(1.06E-04)†	6.67E-01(1.49E-04)
	25	6.95E-01(5.33E-07)†	6.98E-01(5.71E-06)	7.05E-01(1.57E-05)‡	2.68E-01(2.26E-07)†	6.99E-01(5.60E-06)	6.96E-01(7.39E-05)
	50	6.97E-01(1.38E-07)†	7.05E-01(5.15E-06)	7.08E-01(1.46E-05)‡	2.69E-01(3.69E-08)†	7.07E-01(4.43E-06)‡	7.04E-01(3.38E-05)
	200	7.02E-01(2.83E-05)†	7.11E-01(5.76E-06)	7.10E-01(2.70E-05)	2.70E-01(1.23E-09)†	7.10E-01(6.16E-06)	7.12E-01(2.87E-05)
WFG4	5	5.26E-01(1.02E-03)†	6.55E-01(5.62E-04)†	5.68E-01(2.67E-04)†	3.09E-01(8.38E-04)†	6.00E-01(4.33E-04)†	7.98E-01(3.64E-05)
	25	6.37E-01(1.28E-05)†	6.74E-01(7.85E-04)†	6.29E-01(6.73E-05)†	3.13E-01(1.94E-04)†	6.55E-01(4.00E-07)†	8.19E-01(8.59E-06)
	50	6.42E-01(3.93E-06)†	6.75E-01(9.88E-04)†	6.30E-01(9.92E-05)†	3.11E-01(3.20E-05)†	6.58E-01(5.20E-08)†	8.19E-01(4.37E-06)
	200	6.44E-01(2.72E-06)†	6.40E-01(2.15E-04)†	6.29E-01(4.69E-05)†	3.13E-01(7.54E-06)†	6.60E-01(1.88E-09)†	8.21E-01(5.03E-06)
WFG5	5	5.81E-01(6.77E-04)†	6.57E-01(4.24E-04)†	5.77E-01(2.37E-04)†	5.39E-01(3.02E-05)†	6.99E-01(1.30E-03)†	7.64E-01(8.38E-05)
	25	6.07E-01(1.93E-05)†	6.48E-01(7.98E-04)†	6.09E-01(1.48E-04)†	5.47E-01(9.04E-06)†	6.38E-01(1.38E-07)†	7.82E-01(3.22E-05)
	50	6.08E-01(5.17E-05)†	6.18E-01(3.95E-04)†	6.17E-01(1.61E-04)†	5.47E-01(4.74E-06)†	6.40E-01(1.63E-08)†	7.86E-01(1.76E-05)
	200	6.09E-01(1.65E-05)†	6.07E-01(9.27E-05)†	6.13E-01(9.27E-05)†	5.46E-01(1.09E-05)†	6.40E-01(8.04E-09)†	7.87E-01(2.29E-05)
WFG6	5	4.57E-01(6.73E-04)†	5.60E-01(3.75E-04)†	5.18E-01(3.11E-04)†	1.50E-01(5.07E-06)†	5.48E-01(3.80E-04)†	7.85E-01(1.67E-04)
	25	5.68E-01(6.45E-04)†	6.10E-01(9.45E-05)†	6.06E-01(3.52E-05)†	1.60E-01(1.59E-06)†	6.31E-01(2.75E-06)†	8.20E-01(1.18E-05)
	50	6.19E-01(6.97E-06)†	6.20E-01(5.67E-05)†	6.14E-01(7.01E-05)†	1.61E-01(9.19E-08)†	6.37E-01(1.84E-07)†	8.24E-01(1.03E-05)
	200	6.25E-01(5.57E-06)†	6.26E-01(8.76E-06)†	6.15E-01(4.00E-05)†	1.62E-01(5.17E-08)†	6.40E-01(6.89E-08)†	8.26E-01(3.05E-06)
WFG7	5	6.09E-01(3.58E-04)†	5.11E-01(6.26E-04)†	5.77E-01(2.48E-04)†	5.59E-01(3.79E-04)†	6.37E-01(7.09E-04)†	8.09E-01(1.41E-04)
	25	6.30E-01(2.46E-05)†	6.53E-01(7.70E-04)†	6.25E-01(4.14E-05)†	6.13E-01(9.88E-05)†	6.37E-01(1.47E-06)†	8.24E-01(8.06E-06)
	50	6.33E-01(3.77E-05)†	6.58E-01(4.96E-04)†	6.30E-01(4.87E-05)†	6.18E-01(2.49E-05)†	6.39E-01(5.13E-08)†	8.24E-01(6.94E-06)
	200	6.33E-01(1.57E-05)†	6.58E-01(7.06E-04)†	6.29E-01(5.66E-05)†	6.27E-01(8.13E-06)†	6.40E-01(7.07E-10)†	8.26E-01(2.41E-06)
WFG8	5	6.08E-01(2.52E-04)†	5.21E-01(1.28E-03)†	5.81E-01(2.38E-04)†	5.42E-01(4.49E-04)†	6.35E-01(1.12E-03)†	8.05E-01(2.01E-04)
	25	6.30E-01(2.46E-05)†	6.53E-01(7.70E-04)†	6.25E-01(4.14E-05)†	6.16E-01(1.60E-04)†	6.37E-01(2.12E-06)†	8.24E-01(4.05E-06)
	50	6.33E-01(3.87E-05)†	6.61E-01(4.81E-04)†	6.28E-01(3.48E-05)†	6.16E-01(2.58E-05)†	6.39E-01(5.03E-08)†	8.24E-01(4.60E-06)
	200	6.33E-01(1.53E-05)†	6.56E-01(4.65E-04)†	6.26E-01(2.56E-05)†	6.27E-01(1.39E-05)†	6.40E-01(1.08E-09)†	8.25E-01(3.61E-06)
WFG9	5	6.76E-01(1.04E-04)‡	4.66E-01(1.81E-03)†	6.36E-01(4.40E-04)‡	6.34E-01(2.90E-04)‡	5.59E-01(7.79E-03)†	6.10E-01(1.26E-02)
	25	6.30E-01(2.46E-05)	6.53E-01(7.70E-04)	6.25E-01(4.14E-05)	6.81E-01(1.01E-04)	6.41E-01(1.04E-02)†	6.85E-01(1.47E-02)
	50	7.02E-01(1.63E-04)	6.93E-01(4.93E-03)	6.86E-01(5.00E-05)	6.90E-01(2.07E-04)	5.95E-01(1.40E-02)†	6.75E-01(1.39E-02)
	200	7.12E-01(3.88E-04)‡	7.02E-01(3.89E-03)‡	6.90E-01(7.70E-05)‡	6.89E-01(3.10E-04)‡	5.69E-01(1.13E-02)†	6.54E-01(1.06E-02)

TABLE 55
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 4 TO 5 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	0.00E+00(0.00E+00)†	7.70E-01(1.04E-02)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	4.63E-01(1.12E-01)	4.61E-01(1.48E-01)
	25	1.91E-01(8.51E-02)†	1.00E+00(8.30E-10)	8.43E-02(3.06E-02)†	0.00E+00(0.00E+00)†	9.96E-01(4.00E-05)†	9.98E-01(2.66E-05)
	50	9.62E-01(2.33E-03)†	1.00E+00(5.88E-11)†	9.82E-01(1.52E-03)†	0.00E+00(0.00E+00)†	1.00E+00(1.62E-08)†	1.00E+00(7.01E-10)
	200	1.00E+00(1.41E-08)†	1.00E+00(2.49E-12)†	9.99E-01(3.69E-07)†	0.00E+00(0.00E+00)†	1.00E+00(1.74E-08)†	1.00E+00(1.32E-09)
F2	5	8.82E-01(4.72E-04)†	9.58E-01(2.02E-05)†	9.36E-01(4.93E-05)†	4.33E-01(5.13E-02)†	9.56E-01(3.11E-05)†	9.83E-01(2.91E-05)
	25	9.43E-01(6.77E-05)†	9.67E-01(1.02E-06)†	9.55E-01(2.77E-05)†	2.25E-01(4.35E-02)†	9.69E-01(8.05E-07)†	9.86E-01(8.01E-06)
	50	9.60E-01(1.35E-05)†	9.68E-01(7.64E-07)†	9.59E-01(1.47E-05)†	0.00E+00(0.00E+00)†	9.69E-01(7.12E-08)†	9.86E-01(1.80E-05)
	200	9.64E-01(5.98E-06)†	9.69E-01(3.26E-08)†	9.59E-01(1.91E-05)†	0.00E+00(0.00E+00)†	9.70E-01(8.55E-09)†	9.86E-01(5.97E-06)
F3	5	0.00E+00(0.00E+00)†	2.21E-01(2.10E-02)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	2.16E-02(8.78E-03)	1.83E-01(1.03E-01)
	25	2.30E-04(1.64E-06)†	9.60E-01(9.84E-07)	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	8.43E-01(2.86E-02)†	8.60E-01(5.95E-02)
	50	8.53E-01(3.75E-02)†	9.64E-01(3.31E-07)†	8.19E-01(4.11E-02)†	0.00E+00(0.00E+00)†	9.63E-01(2.28E-05)†	9.88E-01(2.06E-06)
	200	9.63E-01(3.77E-06)†	9.68E-01(4.54E-08)†	9.51E-01(6.65E-05)†	0.00E+00(0.00E+00)†	9.67E-01(1.04E-05)†	9.89E-01(4.75E-07)
F4	5	9.11E-01(5.02E-04)	9.39E-01(3.68E-04)	9.31E-01(2.08E-04)	9.07E-01(7.71E-04)	9.42E-01(1.27E-04)‡	8.99E-01(3.64E-03)
	25	9.44E-01(3.23E-04)‡	9.58E-01(3.93E-04)‡	9.67E-01(1.35E-04)‡	9.59E-01(1.34E-04)‡	9.74E-01(2.13E-08)‡	8.94E-01(3.19E-03)
	50	9.70E-01(9.89E-07)‡	9.71E-01(6.20E-05)‡	9.69E-01(5.34E-06)‡	9.67E-01(6.60E-07)‡	9.75E-01(8.36E-09)‡	8.92E-01(2.92E-03)
	200	9.70E-01(2.69E-07)‡	9.74E-01(1.63E-08)‡	9.68E-01(6.96E-06)‡	9.69E-01(1.07E-07)‡	9.75E-01(2.53E-10)‡	8.83E-01(4.59E-03)
WFG1	5	9.16E-01(4.28E-04)	7.59E-01(8.91E-04)†	8.77E-01(3.56E-04)†	3.34E-01(3.66E-03)†	8.94E-01(3.13E-04)†	9.28E-01(9.34E-05)
	25	9.71E-01(5.55E-06)†	8.54E-01(6.31E-05)†	9.63E-01(1.07E-05)†	3.36E-01(3.95E-03)†	9.74E-01(6.67E-06)†	9.90E-01(2.34E-06)
	50	9.83E-01(3.33E-06)†	8.96E-01(7.42E-05)†	9.81E-01(1.72E-06)†	3.59E-01(4.12E-03)†	9.90E-01(6.51E-07)†	9.95E-01(1.96E-07)
	200	9.90E-01(3.94E-07)†	9.48E-01(1.79E-05)†	9.89E-01(4.09E-07)†	3.88E-01(4.06E-03)†	9.94E-01(8.56E-08)†	9.95E-01(2.36E-07)
WFG2	5	9.30E-01(2.18E-04)†	8.70E-01(1.93E-04)†	9.49E-01(4.49E-05)†	2.10E-01(6.13E-07)†	9.60E-01(2.07E-05)†	9.87E-01(1.02E-05)
	25	9.86E-01(7.41E-06)†	9.51E-01(1.11E-05)†	9.88E-01(1.26E-06)†	2.12E-01(1.06E-07)†	9.94E-01(1.61E-07)†	9.98E-01(5.86E-08)
	50	9.92E-01(6.28E-07)†	9.64E-01(5.39E-06)†	9.91E-01(5.88E-07)†	2.11E-01(4.33E-08)†	9.96E-01(1.81E-08)†	9.99E-01(3.87E-08)
	200	9.92E-01(4.75E-07)†	9.80E-01(1.28E-06)†	9.91E-01(6.57E-07)†	2.11E-01(6.54E-08)†	9.96E-01(7.76E-10)†	9.98E-01(2.08E-08)
WFG3	5	6.63E-01(7.69E-05)	6.20E-01(1.92E-04)†	6.37E-01(1.20E-04)†	2.16E-01(1.79E-05)†	6.33E-01(1.20E-04)†	6.62E-01(1.03E-04)
	25	6.77E-01(3.06E-06)†	6.94E-01(1.34E-05)‡	7.01E-01(2.77E-05)‡	2.22E-01(4.22E-08)†	6.93E-01(9.84E-06)‡	6.87E-01(4.40E-05)
	50	6.79E-01(1.02E-05)†	7.00E-01(4.63E-06)‡	7.03E-01(2.54E-05)‡	2.23E-01(2.27E-08)†	6.99E-01(1.14E-05)‡	6.91E-01(5.78E-05)
	200	7.07E-01(2.25E-05)‡	7.07E-01(2.90E-06)‡	7.05E-01(1.88E-05)‡	2.23E-01(1.59E-09)†	7.01E-01(9.18E-06)‡	6.99E-01(3.73E-05)
WFG4	5	5.68E-01(6.86E-04)†	6.98E-01(1.86E-04)†	6.19E-01(2.53E-04)†	3.00E-01(4.99E-04)†	6.56E-01(3.86E-04)†	8.42E-01(4.69E-05)
	25	7.12E-01(7.96E-05)†	7.38E-01(2.76E-04)†	6.90E-01(1.07E-04)†	3.01E-01(1.71E-04)†	7.72E-01(5.50E-07)†	8.65E-01(8.73E-06)
	50	7.24E-01(2.07E-05)†	7.46E-01(2.40E-04)†	6.89E-01(8.09E-05)†	3.00E-01(6.81E-05)†	7.76E-01(1.57E-07)†	8.66E-01(1.07E-05)
	200	7.29E-01(1.65E-05)†	7.56E-01(2.53E-04)†	6.91E-01(6.25E-05)†	2.97E-01(2.10E-05)†	7.80E-01(2.23E-08)†	8.68E-01(5.78E-06)
WFG5	5	6.24E-01(2.37E-03)†	6.97E-01(3.88E-04)†	6.31E-01(1.49E-04)†	5.07E-01(4.10E-05)†	7.65E-01(3.87E-04)†	8.06E-01(1.20E-04)
	25	6.84E-01(7.94E-05)†	7.09E-01(4.25E-04)†	6.66E-01(4.17E-05)†	5.21E-01(3.33E-05)†	7.49E-01(2.70E-06)†	8.26E-01(1.76E-05)
	50	6.89E-01(2.63E-05)†	7.10E-01(2.32E-04)†	6.67E-01(3.19E-05)†	5.20E-01(4.04E-05)†	7.49E-01(2.95E-07)†	8.32E-01(1.75E-05)
	200	6.94E-01(1.76E-04)†	7.14E-01(1.40E-04)†	6.72E-01(7.89E-05)†	5.18E-01(3.88E-05)†	7.50E-01(1.79E-07)†	8.33E-01(1.59E-05)
WFG6	5	4.63E-01(8.87E-04)†	6.01E-01(3.60E-04)†	5.68E-01(2.92E-04)†	1.28E-01(8.06E-06)†	6.25E-01(2.73E-04)†	8.29E-01(2.82E-04)
	25	6.47E-01(8.64E-04)†	6.99E-01(5.25E-05)†	6.74E-01(1.29E-04)†	1.34E-01(8.90E-07)†	7.51E-01(4.01E-06)†	8.71E-01(1.38E-05)
	50	7.00E-01(5.11E-05)†	7.14E-01(5.07E-05)†	6.83E-01(6.37E-05)†	1.35E-01(3.38E-07)†	7.59E-01(4.07E-07)†	8.74E-01(6.99E-06)
	200	7.13E-01(2.10E-05)†	7.35E-01(1.18E-05)†	6.83E-01(4.47E-05)†	1.36E-01(6.30E-08)†	7.63E-01(9.28E-07)†	8.74E-01(4.73E-06)
WFG7	5	6.82E-01(2.83E-04)†	5.78E-01(1.47E-03)†	6.47E-01(3.16E-04)†	5.44E-01(3.18E-04)†	7.15E-01(2.79E-04)†	8.63E-01(1.32E-04)
	25	7.32E-01(9.88E-05)†	7.07E-01(3.68E-04)†	7.08E-01(8.18E-05)†	6.41E-01(2.09E-04)†	7.59E-01(1.41E-06)†	8.79E-01(4.59E-06)
	50	7.32E-01(9.90E-05)†	7.20E-01(2.25E-04)†	7.10E-01(9.66E-05)†	6.52E-01(9.73E-05)†	7.61E-01(1.73E-07)†	8.78E-01(2.35E-06)
	200	7.36E-01(1.26E-04)†	7.55E-01(1.74E-04)†	7.07E-01(9.50E-05)†	6.55E-01(3.23E-05)†	7.65E-01(8.78E-09)†	8.79E-01(2.84E-06)
WFG8	5	6.90E-01(7.17E-04)†	5.83E-01(8.38E-04)†	6.56E-01(3.48E-04)†	5.31E-01(4.38E-04)†	7.25E-01(3.08E-04)†	8.59E-01(2.30E-04)
	25	7.32E-01(9.88E-05)†	7.07E-01(3.68E-04)†	7.08E-01(8.18E-05)†	6.44E-01(3.18E-04)†	7.60E-01(1.63E-06)†	8.79E-01(4.72E-06)
	50	7.36E-01(5.95E-05)†	7.28E-01(3.39E-04)†	7.10E-01(9.18E-05)†	6.45E-01(7.36E-05)†	7.62E-01(1.50E-07)†	8.79E-01(2.67E-06)
	200	7.34E-01(6.38E-05)†	7.57E-01(1.49E-04)†	7.06E-01(7.96E-05)†	6.54E-01(5.56E-05)†	7.65E-01(8.28E-09)†	8.79E-01(4.04E-06)
WFG9	5	7.41E-01(1.19E-04)‡	4.91E-01(5.53E-03)†	6.88E-01(3.76E-04)‡	6.37E-01(7.15E-04)†	5.98E-01(1.59E-02)	6.37E-01(1.48E-02)
	25	7.32E-01(9.88E-05)	7.07E-01(3.68E-04)	7.08E-01(8.18E-05)	7.46E-01(1.11E-04)	6.94E-01(1.94E-02)†	7.22E-01(1.79E-02)
	50	7.77E-01(4.23E-05)	7.56E-01(8.65E-03)	7.46E-01(7.41E-05)	7.58E-01(1.66E-04)	6.30E-01(1.87E-02)†	7.01E-01(1.86E-02)
	200	7.79E-01(5.87E-05)‡	7.80E-01(5.60E-03)‡	7.48E-01(7.45E-05)‡	7.62E-01(2.57E-04)‡	6.27E-01(1.66E-02)†	6.67E-01(1.63E-02)

TABLE 56
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 5 TO 6 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	0.00E+00(0.00E+00)†	9.47E-01(1.56E-03)	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	9.17E-01(3.50E-02)‡	6.58E-01(1.57E-01)
	25	3.99E-01(1.41E-01)†	1.00E+00(9.92E-10)‡	2.30E-01(9.69E-02)†	0.00E+00(0.00E+00)†	1.00E+00(2.70E-07)†	1.00E+00(7.40E-08)
	50	9.87E-01(4.28E-04)†	1.00E+00(5.41E-12)†	9.93E-01(2.54E-04)†	0.00E+00(0.00E+00)†	1.00E+00(1.03E-09)†	1.00E+00(4.09E-11)
	200	9.18E-01(6.06E-02)†	1.00E+00(2.45E-13)†	5.11E-01(1.59E-01)†	0.00E+00(0.00E+00)†	1.00E+00(2.63E-10)†	1.00E+00(6.34E-09)
F2	5	9.10E-01(3.37E-04)†	9.77E-01(9.14E-06)†	9.57E-01(2.92E-05)†	2.21E-01(3.05E-02)†	9.77E-01(7.77E-06)†	9.92E-01(4.23E-06)
	25	9.66E-01(2.58E-05)†	9.87E-01(3.99E-07)†	9.80E-01(1.01E-05)†	0.00E+00(0.00E+00)†	9.88E-01(5.15E-08)†	9.94E-01(3.32E-06)
	50	9.80E-01(7.39E-06)†	9.87E-01(1.72E-07)†	9.82E-01(1.24E-05)†	0.00E+00(0.00E+00)†	9.88E-01(1.21E-08)†	9.94E-01(1.95E-06)
	200	9.80E-01(1.10E-05)†	9.88E-01(1.57E-08)†	9.78E-01(1.40E-05)†	0.00E+00(0.00E+00)†	9.89E-01(2.39E-09)†	9.94E-01(2.66E-06)
F3	5	0.00E+00(0.00E+00)†	6.29E-01(1.23E-02)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	3.37E-01(1.23E-01)	3.69E-01(1.26E-01)
	25	7.68E-03(8.76E-04)†	9.83E-01(3.82E-07)	6.87E-03(1.04E-03)†	0.00E+00(0.00E+00)†	9.61E-01(4.81E-03)‡	9.42E-01(2.61E-02)
	50	9.60E-01(6.96E-05)†	9.85E-01(1.68E-07)†	9.50E-01(1.93E-04)†	0.00E+00(0.00E+00)†	9.86E-01(4.09E-06)†	9.95E-01(1.38E-06)
	200	6.96E-01(9.57E-02)†	9.87E-01(1.80E-08)†	2.32E-01(1.48E-01)†	0.00E+00(0.00E+00)†	9.86E-01(5.15E-06)†	9.95E-01(2.53E-06)
F4	5	9.55E-01(2.08E-04)‡	9.61E-01(3.62E-04)‡	9.53E-01(1.91E-04)‡	9.51E-01(1.58E-04)	9.72E-01(6.62E-05)‡	9.30E-01(2.27E-03)
	25	9.83E-01(1.91E-05)‡	9.86E-01(3.89E-05)‡	9.82E-01(5.79E-06)‡	9.81E-01(4.74E-05)‡	9.90E-01(1.94E-08)‡	9.23E-01(1.96E-03)
	50	9.85E-01(3.19E-06)‡	9.89E-01(7.88E-06)‡	9.77E-01(2.44E-05)‡	9.85E-01(1.18E-05)‡	9.91E-01(2.34E-09)‡	9.24E-01(1.37E-03)
	200	9.67E-01(6.48E-05)‡	9.90E-01(4.48E-09)‡	9.59E-01(8.65E-05)	9.87E-01(1.32E-07)‡	9.91E-01(1.99E-10)‡	9.19E-01(4.10E-03)
WFG1	5	9.59E-01(1.76E-04)	7.79E-01(5.77E-04)†	9.34E-01(3.08E-04)†	3.49E-01(1.10E-02)†	9.47E-01(1.78E-04)†	9.64E-01(4.46E-05)
	25	9.81E-01(4.37E-06)†	8.70E-01(1.36E-04)†	9.76E-01(5.30E-06)†	4.45E-01(4.92E-03)†	9.85E-01(2.62E-06)†	9.94E-01(5.28E-07)
	50	9.89E-01(2.74E-06)†	9.02E-01(9.26E-05)†	9.87E-01(1.74E-06)†	4.48E-01(5.76E-03)†	9.94E-01(3.93E-07)†	9.96E-01(1.88E-07)
	200	9.94E-01(2.90E-07)†	9.46E-01(3.07E-05)†	9.93E-01(3.21E-07)†	3.42E-01(1.65E-02)†	9.96E-01(8.47E-08)	9.96E-01(1.56E-07)
WFG2	5	9.56E-01(7.94E-05)†	8.98E-01(1.15E-04)†	9.69E-01(2.78E-05)†	2.05E-01(4.42E-06)†	9.78E-01(1.23E-05)†	9.91E-01(1.06E-05)
	25	9.93E-01(1.25E-06)†	9.60E-01(1.41E-05)†	9.94E-01(1.17E-06)†	2.06E-01(2.48E-06)†	9.98E-01(6.50E-08)†	9.99E-01(3.77E-08)
	50	9.96E-01(2.57E-07)†	9.72E-01(7.76E-06)†	9.95E-01(5.62E-07)†	2.05E-01(1.34E-09)†	9.99E-01(2.70E-09)†	1.00E+00(1.63E-08)
	200	9.96E-01(2.74E-07)†	9.86E-01(1.08E-06)†	9.96E-01(9.30E-07)†	2.05E-01(2.59E-09)†	9.99E-01(7.30E-11)†	9.99E-01(1.62E-08)
WFG3	5	6.64E-01(6.65E-05)	6.04E-01(2.28E-04)†	6.42E-01(1.21E-04)†	2.16E-01(1.89E-06)†	6.40E-01(1.66E-04)†	6.61E-01(1.11E-04)
	25	6.69E-01(6.16E-05)†	6.76E-01(1.90E-05)†	6.95E-01(5.10E-05)‡	2.19E-01(4.16E-08)†	6.85E-01(2.01E-05)	6.82E-01(1.39E-04)
	50	6.85E-01(2.05E-04)	6.83E-01(2.62E-05)	6.96E-01(5.63E-05)‡	2.20E-01(3.27E-08)†	6.87E-01(3.93E-05)	6.84E-01(1.83E-04)
	200	7.02E-01(7.70E-05)‡	6.94E-01(3.17E-05)‡	6.98E-01(7.96E-05)‡	2.20E-01(4.24E-09)†	6.86E-01(6.47E-05)	6.83E-01(1.21E-04)
WFG4	5	6.06E-01(8.12E-04)†	6.95E-01(4.58E-04)†	6.35E-01(2.21E-04)†	2.78E-01(2.43E-04)†	7.08E-01(2.23E-04)†	8.62E-01(2.22E-04)
	25	7.46E-01(1.10E-04)†	7.48E-01(1.28E-04)†	7.06E-01(2.35E-04)†	2.91E-01(1.54E-04)†	8.44E-01(1.62E-06)†	8.96E-01(9.60E-06)
	50	7.53E-01(2.04E-04)†	7.69E-01(1.83E-04)†	7.11E-01(3.07E-04)†	2.85E-01(1.17E-04)†	8.49E-01(5.37E-07)†	8.97E-01(6.15E-06)
	200	7.68E-01(7.17E-05)†	7.99E-01(9.00E-05)†	7.14E-01(1.64E-04)†	2.75E-01(1.81E-05)†	8.49E-01(1.24E-07)†	8.99E-01(6.85E-06)
WFG5	5	6.39E-01(1.98E-03)†	6.89E-01(7.47E-04)†	6.47E-01(1.56E-04)†	4.88E-01(2.90E-05)†	8.12E-01(1.55E-04)	8.17E-01(1.45E-04)
	25	7.16E-01(2.25E-04)†	7.20E-01(3.06E-04)†	6.83E-01(1.16E-04)†	4.97E-01(2.48E-05)†	8.12E-01(1.48E-06)†	8.46E-01(2.00E-05)
	50	7.28E-01(1.96E-04)†	7.38E-01(2.29E-04)†	6.92E-01(1.74E-04)†	4.97E-01(3.07E-05)†	8.13E-01(1.71E-06)†	8.51E-01(7.82E-05)
	200	7.33E-01(2.22E-04)†	7.56E-01(6.91E-05)†	6.93E-01(1.84E-04)†	4.94E-01(1.21E-05)†	8.13E-01(4.30E-07)†	8.54E-01(5.27E-05)
WFG6	5	4.79E-01(9.71E-04)†	5.83E-01(5.64E-04)†	6.00E-01(3.24E-04)†	1.09E-01(9.62E-06)†	6.80E-01(2.09E-04)†	8.56E-01(1.66E-04)
	25	6.82E-01(3.79E-04)†	6.94E-01(2.11E-04)†	7.00E-01(1.47E-04)†	1.12E-01(1.50E-06)†	8.23E-01(4.71E-05)†	8.97E-01(4.54E-05)
	50	7.27E-01(7.84E-05)†	7.26E-01(1.72E-04)†	7.07E-01(7.56E-05)†	1.13E-01(6.18E-07)†	8.35E-01(7.27E-07)†	9.01E-01(2.46E-05)
	200	7.50E-01(6.60E-05)†	7.77E-01(3.21E-05)†	7.16E-01(1.35E-04)†	1.14E-01(1.85E-07)†	8.37E-01(6.68E-07)†	9.02E-01(3.20E-05)
WFG7	5	7.47E-01(3.14E-04)†	5.81E-01(2.00E-03)†	6.97E-01(2.86E-04)†	5.38E-01(4.96E-04)†	7.93E-01(2.38E-04)†	9.00E-01(2.84E-05)
	25	7.75E-01(1.80E-04)†	6.95E-01(6.61E-04)†	7.24E-01(1.57E-04)†	6.91E-01(2.99E-04)†	8.36E-01(1.00E-06)†	9.12E-01(3.79E-06)
	50	7.71E-01(7.68E-05)†	7.44E-01(1.96E-04)†	7.26E-01(2.08E-04)†	6.91E-01(2.16E-04)†	8.38E-01(3.02E-07)†	9.10E-01(6.55E-06)
	200	7.74E-01(1.07E-04)†	7.93E-01(1.27E-04)†	7.26E-01(1.51E-04)†	7.40E-01(5.21E-05)†	8.39E-01(5.97E-08)†	9.12E-01(6.12E-06)
WFG8	5	7.42E-01(5.13E-04)†	5.88E-01(2.04E-03)†	6.93E-01(3.28E-04)†	5.24E-01(7.01E-04)†	7.94E-01(1.97E-04)†	8.97E-01(1.15E-04)
	25	7.75E-01(1.80E-04)†	6.95E-01(6.61E-04)†	7.24E-01(1.57E-04)†	6.76E-01(3.32E-04)†	8.37E-01(2.93E-06)†	9.11E-01(7.02E-06)
	50	7.75E-01(8.56E-05)†	7.37E-01(2.43E-04)†	7.21E-01(2.36E-04)†	6.88E-01(1.74E-04)†	8.38E-01(4.22E-07)†	9.11E-01(4.54E-06)
	200	7.76E-01(6.79E-05)†	7.96E-01(1.31E-04)†	7.28E-01(1.96E-04)†	7.41E-01(6.41E-05)†	8.40E-01(4.13E-08)†	9.12E-01(6.48E-06)
WFG9	5	7.71E-01(1.40E-04)‡	4.42E-01(1.36E-02)†	7.17E-01(3.32E-04)‡	5.99E-01(1.76E-03)	6.19E-01(2.68E-02)	6.39E-01(1.87E-02)
	25	7.75E-01(1.80E-04)	6.95E-01(6.61E-04)	7.24E-01(1.57E-04)	7.64E-01(1.34E-04)	7.25E-01(2.68E-02)	7.25E-01(2.68E-02)
	50	7.98E-01(6.71E-05)	7.68E-01(1.21E-02)	7.59E-01(1.47E-04)	7.78E-01(7.06E-05)	6.45E-01(2.41E-02)†	7.05E-01(2.68E-02)
	200	8.08E-01(6.78E-05)‡	8.12E-01(9.48E-03)‡	7.55E-01(1.90E-04)‡	7.93E-01(1.14E-04)‡	6.49E-01(2.41E-02)	6.57E-01(2.32E-02)

TABLE 57
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 6 TO 7 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	0.00E+00(0.00E+00)†	9.87E-01(5.52E-05)	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	1.00E+00(1.56E-08)‡	8.42E-01(2.26E-01)
	25	4.56E-01(1.65E-01)†	1.00E+00(1.44E-10)	2.11E-01(1.08E-01)†	0.00E+00(0.00E+00)†	1.00E+00(7.40E-08)†	1.00E+00(3.23E-02)
	50	9.21E-01(3.14E-02)†	1.00E+00(6.45E-13)	9.23E-01(4.95E-02)†	0.00E+00(0.00E+00)†	1.00E+00(2.01E-10)†	1.00E+00(2.56E-11)
	200	6.79E-01(5.10E-02)†	1.00E+00(1.15E-31)	3.93E-02(2.43E-02)†	0.00E+00(0.00E+00)†	1.00E+00(6.64E-11)†	1.00E+00(9.99E-12)
F2	5	9.29E-01(2.37E-04)†	9.90E-01(1.83E-06)†	9.69E-01(1.45E-05)†	2.01E-01(2.79E-02)†	9.88E-01(2.60E-06)†	9.95E-01(3.27E-06)
	25	9.79E-01(1.51E-05)†	9.95E-01(8.69E-08)†	9.80E-01(2.16E-05)†	6.63E-03(1.36E-03)†	9.95E-01(1.96E-08)†	9.97E-01(7.36E-07)
	50	9.78E-01(2.73E-05)†	9.95E-01(5.98E-08)†	9.69E-01(5.52E-05)†	2.08E-02(6.58E-03)†	9.96E-01(3.79E-09)†	9.97E-01(5.88E-07)
	200	9.45E-01(2.22E-04)†	9.96E-01(2.65E-09)†	9.48E-01(1.18E-04)†	0.00E+00(0.00E+00)†	9.96E-01(1.15E-09)†	9.97E-01(8.53E-07)
F3	5	0.00E+00(0.00E+00)†	8.90E-01(1.71E-03)	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	9.85E-01(3.85E-05)‡	6.38E-01(1.75E-01)
	25	6.58E-02(4.14E-02)†	9.94E-01(7.06E-08)	1.03E-01(6.61E-02)†	0.00E+00(0.00E+00)†	9.91E-01(6.32E-06)	9.85E-01(1.57E-01)
	50	9.50E-01(2.79E-03)†	9.94E-01(1.62E-08)†	9.36E-01(1.18E-02)†	0.00E+00(0.00E+00)†	9.94E-01(1.98E-06)†	9.98E-01(1.10E-06)
	200	8.49E-02(2.40E-02)†	9.95E-01(3.45E-09)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	9.94E-01(1.14E-06)‡	9.92E-01(1.13E-03)
F4	5	9.77E-01(8.12E-05)‡	9.82E-01(4.78E-05)‡	9.77E-01(5.37E-05)‡	9.68E-01(1.64E-04)	9.88E-01(9.16E-06)‡	9.52E-01(1.38E-03)
	25	9.89E-01(7.39E-06)‡	9.95E-01(3.62E-06)‡	9.73E-01(3.71E-05)‡	9.89E-01(8.85E-06)‡	9.96E-01(2.73E-06)‡	9.37E-01(1.78E-03)
	50	9.66E-01(1.81E-04)‡	9.96E-01(9.48E-07)‡	9.34E-01(1.76E-04)	9.92E-01(2.58E-06)‡	9.96E-01(6.89E-10)‡	9.49E-01(5.62E-04)
	200	8.42E-01(6.65E-04)†	9.96E-01(2.89E-10)‡	8.87E-01(5.83E-04)†	9.94E-01(2.17E-06)‡	9.97E-01(5.55E-11)‡	9.43E-01(2.20E-03)
WFG1	5	9.89E-01(4.78E-06)†	8.42E-01(5.77E-04)†	9.80E-01(1.02E-05)†	2.10E-01(1.65E-03)†	9.93E-01(1.43E-06)†	9.95E-01(1.83E-06)
	25	9.87E-01(3.52E-06)†	8.94E-01(9.50E-05)†	9.83E-01(3.29E-06)†	2.10E-01(1.72E-03)†	9.92E-01(1.01E-06)†	9.96E-01(2.23E-07)
	50	9.91E-01(1.14E-06)†	9.17E-01(5.50E-05)†	9.89E-01(1.13E-06)†	1.99E-01(1.89E-03)†	9.96E-01(3.18E-07)†	9.96E-01(2.14E-07)
	200	9.95E-01(2.70E-07)†	9.50E-01(2.37E-05)†	9.95E-01(3.44E-07)†	1.95E-01(1.80E-03)†	9.97E-01(1.29E-07)‡	9.97E-01(2.12E-07)
WFG2	5	9.70E-01(1.95E-05)†	9.12E-01(1.13E-04)†	9.78E-01(1.45E-05)†	1.70E-01(3.75E-06)†	9.88E-01(6.48E-06)†	9.95E-01(3.69E-06)
	25	9.95E-01(9.76E-07)†	9.68E-01(1.84E-05)†	9.95E-01(1.40E-06)†	1.68E-01(6.90E-07)†	9.99E-01(3.55E-08)†	1.00E+00(1.07E-08)
	50	9.97E-01(3.45E-07)†	9.78E-01(5.84E-06)†	9.97E-01(5.82E-07)†	1.68E-01(6.94E-10)†	1.00E+00(7.10E-10)†	1.00E+00(1.14E-09)
	200	9.98E-01(1.57E-07)†	9.89E-01(1.05E-06)†	9.98E-01(2.99E-07)†	1.68E-01(5.32E-10)†	1.00E+00(7.18E-12)‡	1.00E+00(8.89E-10)
WFG3	5	6.70E-01(6.78E-05)‡	5.82E-01(3.14E-04)†	6.41E-01(7.13E-05)†	1.78E-01(5.67E-07)†	6.44E-01(2.00E-04)†	6.55E-01(2.94E-04)
	25	6.72E-01(1.57E-04)‡	6.52E-01(6.55E-05)†	6.86E-01(3.15E-05)‡	1.81E-01(3.42E-08)†	6.73E-01(4.04E-05)‡	6.58E-01(3.16E-04)
	50	6.92E-01(8.28E-05)‡	6.64E-01(2.66E-05)	6.85E-01(4.53E-05)‡	1.81E-01(1.85E-08)†	6.69E-01(3.75E-05)‡	6.60E-01(2.04E-04)
	200	6.96E-01(3.79E-05)‡	6.76E-01(2.68E-05)‡	6.89E-01(5.15E-05)‡	1.82E-01(7.10E-09)†	6.71E-01(6.82E-05)	6.64E-01(2.42E-04)
WFG4	5	6.32E-01(4.94E-04)†	6.83E-01(2.75E-04)†	6.31E-01(2.87E-04)†	2.69E-01(3.56E-04)†	7.43E-01(1.56E-04)†	8.73E-01(4.09E-04)
	25	7.50E-01(2.14E-04)†	7.27E-01(4.67E-04)†	6.92E-01(2.97E-04)†	2.85E-01(1.03E-04)†	8.90E-01(4.09E-06)†	9.15E-01(7.48E-06)
	50	7.56E-01(3.91E-04)†	7.43E-01(3.37E-04)†	6.84E-01(3.64E-04)†	2.78E-01(2.05E-04)†	8.95E-01(8.54E-07)†	9.18E-01(6.62E-06)
	200	7.73E-01(3.06E-04)†	7.88E-01(2.86E-04)†	7.10E-01(3.27E-04)†	2.64E-01(2.36E-05)†	8.92E-01(2.66E-07)†	9.21E-01(9.97E-06)
WFG5	5	6.53E-01(1.20E-03)†	6.66E-01(8.13E-04)†	6.26E-01(1.83E-04)†	4.59E-01(3.68E-05)†	8.50E-01(1.24E-04)‡	8.28E-01(1.56E-04)
	25	7.24E-01(3.08E-04)†	6.84E-01(3.30E-04)†	6.72E-01(1.90E-04)†	4.67E-01(3.41E-05)†	8.47E-01(1.34E-06)†	8.61E-01(3.52E-05)
	50	7.24E-01(3.55E-04)†	6.98E-01(1.84E-04)†	6.80E-01(4.07E-04)†	4.60E-01(4.72E-05)†	8.47E-01(9.83E-07)†	8.65E-01(4.90E-05)
	200	7.30E-01(3.94E-04)†	7.39E-01(7.24E-05)†	6.87E-01(2.46E-04)†	4.60E-01(2.04E-05)†	8.46E-01(4.03E-07)†	8.69E-01(1.32E-05)
WFG6	5	4.96E-01(7.07E-04)†	5.70E-01(8.90E-04)†	6.07E-01(4.19E-04)†	8.87E-02(1.24E-05)†	7.17E-01(2.55E-04)†	8.65E-01(1.58E-04)
	25	6.98E-01(1.52E-04)†	6.50E-01(4.28E-04)†	6.97E-01(1.23E-04)†	9.24E-02(8.36E-07)†	8.73E-01(2.36E-05)†	9.14E-01(2.76E-05)
	50	7.33E-01(1.66E-04)†	6.77E-01(3.10E-04)†	7.08E-01(2.48E-04)†	9.32E-02(3.06E-07)†	8.86E-01(1.38E-06)†	9.15E-01(1.01E-05)
	200	7.59E-01(1.88E-04)†	7.46E-01(3.26E-04)†	7.19E-01(1.55E-04)†	9.35E-02(1.40E-08)†	8.85E-01(1.96E-06)†	9.17E-01(3.58E-06)
WFG7	5	7.76E-01(3.59E-04)†	6.19E-01(1.19E-03)†	7.08E-01(5.09E-04)†	5.53E-01(8.72E-04)†	8.44E-01(1.12E-04)†	9.15E-01(1.18E-04)
	25	7.79E-01(2.22E-04)†	6.96E-01(7.23E-04)†	7.17E-01(2.09E-04)†	7.06E-01(4.90E-04)†	8.88E-01(5.38E-07)†	9.16E-01(1.02E-05)
	50	7.85E-01(1.23E-04)†	7.47E-01(5.35E-04)†	7.07E-01(4.36E-04)†	7.55E-01(6.30E-04)†	8.86E-01(8.09E-07)†	9.15E-01(1.22E-05)
	200	7.92E-01(9.32E-05)†	7.99E-01(1.87E-04)†	7.20E-01(2.61E-04)†	7.90E-01(1.08E-04)†	8.86E-01(7.88E-08)†	9.17E-01(9.24E-06)
WFG8	5	7.69E-01(3.75E-04)†	6.14E-01(1.60E-03)†	7.01E-01(3.48E-04)†	5.44E-01(1.04E-03)†	8.40E-01(1.07E-04)†	9.17E-01(7.56E-05)
	25	7.79E-01(2.22E-04)†	6.96E-01(7.23E-04)†	7.17E-01(2.09E-04)†	6.96E-01(4.76E-04)†	8.88E-01(1.67E-06)†	9.16E-01(9.52E-06)
	50	7.87E-01(9.87E-05)†	7.37E-01(3.81E-04)†	7.19E-01(3.73E-04)†	7.48E-01(2.99E-04)†	8.86E-01(5.24E-07)†	9.16E-01(9.26E-06)
	200	7.98E-01(1.45E-04)†	7.98E-01(2.04E-04)†	7.19E-01(3.59E-04)†	7.91E-01(1.63E-04)†	8.86E-01(4.51E-08)†	9.17E-01(1.14E-05)
WFG9	5	7.79E-01(1.66E-04)‡	3.80E-01(2.51E-02)†	7.17E-01(5.66E-04)‡	5.61E-01(1.77E-03)	6.21E-01(3.82E-02)	6.22E-01(2.65E-02)
	25	7.79E-01(2.22E-04)	6.96E-01(7.23E-04)	7.17E-01(2.09E-04)	7.48E-01(3.10E-04)	7.32E-01(3.81E-02)	7.16E-01(3.84E-02)
	50	7.94E-01(1.71E-04)	7.44E-01(1.83E-02)	7.43E-01(6.01E-04)	7.70E-01(1.44E-04)	6.41E-01(3.18E-02)	6.90E-01(3.85E-02)
	200	8.12E-01(1.89E-04)‡	8.08E-01(1.28E-02)‡	7.50E-01(3.01E-04)‡	7.88E-01(2.11E-04)‡	6.46E-01(3.40E-02)	6.36E-01(3.34E-02)

TABLE 58
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 7 TO 6 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	3.19E+02(3.92E+01)†	4.78E+01(9.43E+01)†	2.89E+02(2.49E+01)†	1.04E+03(2.90E+03)†	2.61E+01(1.95E+01)	2.74E+01(9.69E+00)
	25	3.21E+02(4.15E+01)†	4.82E+01(1.01E+02)†	2.89E+02(4.01E+01)†	1.07E+03(4.12E+03)†	2.80E+01(4.12E+01)	2.75E+01(9.02E+00)
	50	3.20E+02(5.97E+01)†	5.00E+01(6.61E+01)†	2.88E+02(5.08E+01)†	1.05E+03(2.81E+03)†	2.66E+01(1.94E+01)	2.69E+01(7.99E+00)
	200	3.19E+02(5.26E+01)†	4.99E+01(9.28E+01)†	2.90E+02(3.53E+01)†	1.05E+03(4.07E+03)†	2.63E+01(1.50E+01)	2.61E+01(1.45E+01)
F2	5	9.51E-01(1.24E-03)†	1.88E-01(7.62E-04)†	8.54E-01(7.28E-04)†	5.57E+00(2.16E-02)†	1.74E-01(2.57E-05)	1.74E-01(3.18E-05)
	25	9.64E-01(6.92E-04)†	1.84E-01(9.18E-04)	8.60E-01(3.38E-04)†	5.60E+00(2.43E-02)†	1.75E-01(2.25E-05)	1.73E-01(3.42E-05)
	50	9.65E-01(5.94E-04)†	1.89E-01(7.81E-04)†	8.53E-01(6.94E-04)†	5.56E+00(2.68E-02)†	1.74E-01(4.22E-05)†	1.69E-01(2.84E-05)
	200	9.57E-01(9.41E-04)†	1.90E-01(8.15E-04)†	8.64E-01(5.82E-04)†	5.55E+00(4.17E-02)†	1.74E-01(3.62E-05)	1.72E-01(3.50E-05)
F3	5	7.66E+02(3.68E+02)†	1.33E+02(6.34E+02)†	7.17E+02(5.27E+02)†	9.10E+02(1.06E+03)†	6.98E+01(7.18E+01)‡	7.93E+01(9.53E+01)
	25	7.66E+02(5.00E+02)†	1.28E+02(7.93E+02)†	7.25E+02(4.72E+02)†	9.09E+02(7.24E+02)†	7.33E+01(1.11E+02)	7.72E+01(6.19E+01)
	50	7.65E+02(6.71E+02)†	1.31E+02(5.17E+02)†	7.19E+02(2.10E+02)†	9.04E+02(1.42E+03)†	7.44E+01(9.91E+01)‡	7.95E+01(3.19E+01)
	200	7.75E+02(7.12E+02)†	1.29E+02(6.95E+02)†	7.22E+02(3.15E+02)†	9.03E+02(8.17E+02)†	7.32E+01(1.28E+02)	7.66E+01(7.96E+01)
F4	5	1.16E+00(7.99E-05)†	1.94E-01(1.09E-03)‡	1.01E+00(7.26E-05)†	3.53E-01(1.58E-01)	2.19E-01(2.63E-05)†	2.14E-01(3.22E-05)
	25	1.16E+00(4.50E-05)†	2.00E-01(8.93E-04)‡	1.01E+00(4.80E-05)†	3.01E-01(9.37E-02)	2.18E-01(3.75E-05)	2.16E-01(5.94E-05)
	50	1.16E+00(8.35E-05)†	2.01E-01(7.62E-04)‡	1.01E+00(5.80E-05)†	2.69E-01(6.27E-02)	2.19E-01(3.93E-05)	2.16E-01(3.11E-05)
	200	1.15E+00(7.67E-05)†	2.01E-01(7.92E-04)‡	1.01E+00(1.05E-04)†	2.97E-01(1.11E-01)	2.18E-01(3.86E-05)	2.17E-01(4.15E-05)
WFG1	5	6.40E-01(5.25E-04)†	4.79E-01(1.51E-02)	8.68E-01(6.15E-04)†	1.39E+00(9.14E-04)†	4.13E-01(1.38E-04)	4.10E-01(9.66E-05)
	25	6.30E-01(4.48E-04)†	5.25E-01(1.29E-02)†	8.67E-01(2.19E-04)†	1.39E+00(1.02E-03)†	4.13E-01(1.28E-04)	4.13E-01(1.29E-04)
	50	6.34E-01(5.44E-04)†	5.24E-01(1.30E-02)†	8.68E-01(4.58E-04)†	1.39E+00(5.23E-04)†	4.12E-01(1.38E-04)	4.17E-01(1.79E-04)
	200	6.36E-01(4.54E-04)†	5.23E-01(1.30E-02)†	8.58E-01(4.57E-04)†	1.39E+00(1.18E-03)†	4.16E-01(7.96E-05)	4.12E-01(1.92E-04)
WFG2	5	1.88E+00(1.06E-02)†	7.24E-01(1.57E-02)	1.93E+00(6.71E-03)†	3.03E-01(3.03E-04)‡	6.71E-01(8.55E-04)‡	6.94E-01(1.09E-03)
	25	1.87E+00(9.22E-03)†	7.59E-01(1.20E-02)†	1.93E+00(5.54E-03)†	2.99E-01(2.35E-04)‡	6.76E-01(8.71E-04)‡	7.11E-01(1.07E-03)
	50	1.88E+00(7.39E-03)†	7.64E-01(1.27E-02)†	1.93E+00(6.02E-03)†	3.01E-01(2.15E-04)‡	6.63E-01(9.47E-04)‡	7.03E-01(1.58E-03)
	200	1.91E+00(7.81E-03)†	7.63E-01(1.31E-02)†	1.93E+00(7.10E-03)†	3.03E-01(3.02E-04)‡	6.68E-01(7.41E-04)‡	7.09E-01(7.77E-04)
WFG3	5	3.28E+00(1.33E-02)†	3.19E+00(2.20E-01)	2.91E+00(1.04E-02)‡	8.65E-01(6.40E-04)‡	3.10E+00(1.08E-02)	3.11E+00(8.60E-03)
	25	3.23E+00(1.04E-02)†	2.94E+00(1.90E-01)‡	2.94E+00(2.14E-02)‡	8.69E-01(9.76E-04)‡	3.09E+00(9.83E-03)	3.13E+00(1.07E-02)
	50	3.24E+00(1.54E-02)†	2.91E+00(2.08E-01)‡	2.92E+00(1.01E-02)‡	8.73E-01(9.88E-04)‡	3.15E+00(1.13E-02)†	3.09E+00(7.24E-03)
	200	3.27E+00(2.01E-02)†	2.93E+00(2.01E-01)‡	2.88E+00(1.80E-02)‡	8.81E-01(7.55E-04)‡	3.11E+00(1.08E-02)†	3.10E+00(7.88E-03)
WFG4	5	1.12E+00(2.01E-03)†	5.20E-01(1.76E-03)†	1.11E+00(1.30E-03)†	4.78E-01(1.60E-04)†	4.47E-01(2.06E-04)‡	4.70E-01(1.16E-04)
	25	1.13E+00(1.21E-03)†	5.34E-01(1.42E-03)†	1.11E+00(1.07E-03)†	4.82E-01(1.49E-04)†	4.47E-01(1.76E-04)‡	4.67E-01(1.40E-04)
	50	1.13E+00(1.08E-03)†	5.33E-01(1.41E-03)†	1.12E+00(9.21E-04)†	4.73E-01(1.56E-04)	4.47E-01(1.81E-04)‡	4.73E-01(8.42E-05)
	200	1.11E+00(1.58E-03)†	5.34E-01(1.40E-03)†	1.11E+00(1.54E-03)†	4.78E-01(1.79E-04)†	4.44E-01(1.58E-04)‡	4.71E-01(1.16E-04)
WFG5	5	1.14E+00(1.96E-03)†	6.14E-01(4.77E-03)†	1.19E+00(6.37E-04)†	4.17E-02(6.97E-05)‡	5.10E-01(1.30E-04)‡	5.33E-01(7.58E-05)
	25	1.13E+00(1.99E-03)†	6.40E-01(4.04E-03)†	1.19E+00(1.43E-03)†	4.22E-02(9.34E-05)‡	5.08E-01(8.41E-05)‡	5.33E-01(1.13E-04)
	50	1.13E+00(6.25E-04)†	6.38E-01(3.68E-03)†	1.19E+00(1.33E-03)†	4.58E-02(1.05E-04)‡	5.08E-01(1.20E-04)‡	5.33E-01(5.83E-05)
	200	1.13E+00(1.40E-03)†	6.38E-01(3.71E-03)†	1.20E+00(1.04E-03)†	4.65E-02(1.07E-04)‡	5.06E-01(1.54E-04)‡	5.32E-01(9.30E-05)
WFG6	5	1.27E+00(2.34E-03)	7.76E-01(9.41E-03)‡	1.34E+00(1.04E-03)	2.79E-02(2.87E-06)‡	1.24E+00(3.31E-01)	1.33E+00(3.44E-01)
	25	1.25E+00(1.48E-03)	8.18E-01(4.36E-03)	1.32E+00(1.31E-03)	2.73E-02(2.82E-06)‡	1.46E+00(3.26E-01)	1.35E+00(3.54E-01)
	50	1.25E+00(1.09E-03)	8.13E-01(5.30E-03)‡	1.33E+00(1.05E-03)	2.85E-02(3.78E-06)‡	1.43E+00(3.49E-01)	1.44E+00(3.37E-01)
	200	1.26E+00(1.34E-03)	8.23E-01(4.79E-03)‡	1.33E+00(1.07E-03)	2.81E-02(4.16E-06)‡	1.50E+00(3.33E-01)	1.45E+00(3.48E-01)
WFG7	5	1.21E+00(1.19E-03)†	5.80E-01(9.07E-03)†	1.30E+00(1.15E-03)†	1.45E-01(3.89E-05)‡	5.19E-01(6.59E-05)†	5.14E-01(9.27E-05)
	25	1.21E+00(7.78E-04)†	6.14E-01(7.82E-03)†	1.29E+00(9.60E-04)†	1.48E-01(3.22E-05)‡	5.24E-01(1.08E-04)†	5.14E-01(7.95E-05)
	50	1.21E+00(9.92E-04)†	6.14E-01(7.36E-03)†	1.30E+00(7.84E-04)†	1.47E-01(1.41E-04)‡	5.22E-01(9.57E-05)†	5.14E-01(8.01E-05)
	200	1.21E+00(8.45E-04)†	6.15E-01(7.59E-03)†	1.30E+00(1.13E-03)†	1.43E-01(1.09E-04)‡	5.19E-01(9.21E-05)†	5.14E-01(8.67E-05)
WFG8	5	1.22E+00(1.03E-03)†	5.81E-01(8.84E-03)†	1.30E+00(6.56E-04)†	1.45E-01(3.06E-05)‡	5.19E-01(8.61E-05)†	5.12E-01(8.99E-05)
	25	1.21E+00(7.78E-04)†	6.14E-01(7.82E-03)†	1.29E+00(9.60E-04)†	1.46E-01(3.19E-05)‡	5.22E-01(3.23E-05)†	5.12E-01(5.65E-05)
	50	1.21E+00(8.48E-04)†	6.12E-01(7.02E-03)†	1.30E+00(6.13E-04)†	1.45E-01(9.03E-05)‡	5.19E-01(9.78E-05)†	5.13E-01(6.93E-05)
	200	1.21E+00(1.26E-03)†	6.15E-01(7.49E-03)†	1.30E+00(7.05E-04)†	1.44E-01(6.99E-05)‡	5.21E-01(7.03E-05)	5.16E-01(9.48E-05)
WFG9	5	1.42E+00(1.03E-03)†	7.80E-01(8.48E-03)‡	1.45E+00(6.66E-04)†	1.20E-01(3.43E-04)‡	1.21E+00(2.05E-01)	1.26E+00(1.42E-01)
	25	1.21E+00(7.78E-04)†	6.14E-01(7.82E-03)†	1.29E+00(9.60E-04)†	1.23E-01(2.31E-04)‡	1.15E+00(1.42E-01)	1.09E+00(1.40E-01)
	50	1.43E+00(1.04E-03)†	8.17E-01(8.45E-03)‡	1.45E+00(1.08E-03)†	1.20E-01(2.08E-04)‡	1.24E+00(1.25E-01)	1.21E+00(1.53E-01)
	200	1.43E+00(2.00E-03)	8.12E-01(8.26E-03)‡	1.45E+00(5.26E-04)	1.25E-01(2.04E-04)‡	1.43E+00(1.68E-01)	1.31E+00(1.51E-01)

TABLE 59
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 6 TO 5 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	3.60E+02(7.81E+01)†	3.56E+01(1.44E+01)‡	3.14E+02(6.54E+01)†	1.15E+03(1.18E+04)†	4.25E+01(4.51E+01)‡	5.64E+01(3.37E+01)
	25	3.55E+02(1.28E+02)†	3.66E+01(9.11E+00)‡	3.27E+02(5.75E+01)†	1.29E+03(6.57E+03)†	3.38E+01(1.24E+01)‡	4.85E+01(2.49E+01)
	50	3.55E+02(2.10E+02)†	3.50E+01(1.04E+01)‡	3.26E+02(9.73E+01)†	1.33E+03(9.96E+03)†	3.27E+01(2.73E+01)‡	3.82E+01(3.69E+01)
	200	3.55E+02(2.29E+02)†	3.07E+01(9.41E+00)†	3.27E+02(9.45E+01)†	1.38E+03(1.24E+04)†	3.12E+01(1.84E+01)†	2.88E+01(1.25E+01)
F2	5	1.02E+00(1.61E-03)†	2.31E-01(2.69E-04)	8.50E-01(9.41E-04)†	6.24E+00(3.26E-01)†	2.55E-01(2.32E-04)†	2.38E-01(2.43E-04)
	25	1.03E+00(2.73E-03)†	2.37E-01(2.24E-04)†	8.91E-01(1.56E-03)†	7.15E+00(3.88E-01)†	2.07E-01(2.33E-04)†	1.90E-01(1.36E-04)
	50	1.01E+00(5.04E-03)†	2.33E-01(1.97E-04)†	8.94E-01(1.86E-03)†	7.18E+00(4.16E-01)†	1.82E-01(1.18E-04)†	1.69E-01(1.18E-04)
	200	9.74E-01(5.36E-03)†	2.06E-01(1.44E-04)†	9.04E-01(3.89E-03)†	7.15E+00(3.98E-01)†	1.66E-01(8.47E-05)†	1.57E-01(5.49E-05)
F3	5	8.20E+02(5.43E+02)†	9.28E+01(1.02E+02)‡	7.69E+02(8.27E+02)†	9.13E+02(4.20E+03)†	1.13E+02(9.93E+01)‡	1.63E+02(2.06E+02)
	25	7.87E+02(6.48E+02)†	9.64E+01(7.37E+01)‡	7.61E+02(7.39E+02)†	9.93E+02(6.93E+03)†	9.42E+01(1.28E+02)‡	1.41E+02(3.52E+02)
	50	7.81E+02(8.35E+02)†	8.51E+01(5.59E+01)‡	7.47E+02(4.68E+02)†	1.03E+03(6.12E+03)†	8.80E+01(6.81E+01)‡	1.05E+02(4.42E+02)
	200	7.80E+02(1.15E+03)†	6.81E+01(7.61E+01)‡	7.43E+02(5.82E+02)‡	1.06E+03(8.33E+03)†	8.28E+01(9.07E+01)	7.83E+01(8.65E+01)
F4	5	1.38E+00(1.15E-04)†	2.14E-01(4.98E-04)‡	1.10E+00(7.50E-04)†	1.83E-01(1.54E-02)‡	3.33E-01(3.69E-04)†	3.15E-01(4.77E-04)
	25	1.35E+00(5.73E-05)†	2.23E-01(2.13E-04)	1.13E+00(7.02E-04)†	9.70E-02(7.74E-03)‡	2.30E-01(2.71E-04)	2.28E-01(2.88E-04)
	50	1.35E+00(1.25E-04)†	2.22E-01(1.59E-04)†	1.14E+00(2.67E-04)†	1.18E-01(2.14E-02)‡	2.01E-01(2.34E-04)	1.97E-01(1.67E-04)
	200	1.33E+00(2.24E-04)†	2.04E-01(1.51E-04)†	1.16E+00(1.81E-04)†	8.58E-02(8.09E-03)‡	1.85E-01(1.24E-04)	1.81E-01(1.38E-04)
WFG1	5	6.56E-01(2.64E-04)†	4.83E-01(9.44E-04)‡	8.56E-01(4.24E-04)†	1.33E+00(1.61E-03)†	5.09E-01(3.12E-05)†	5.03E-01(3.24E-05)
	25	5.75E-01(9.86E-04)†	4.20E-01(6.03E-04)‡	7.92E-01(6.05E-04)†	1.33E+00(5.19E-03)†	4.38E-01(5.69E-04)	4.33E-01(4.83E-04)
	50	5.07E-01(3.36E-04)†	4.06E-01(5.12E-04)†	7.35E-01(3.34E-04)†	1.31E+00(1.05E-02)†	3.51E-01(3.53E-04)	3.46E-01(1.69E-02)
	200	4.69E-01(1.68E-04)†	3.93E-01(4.56E-04)†	7.08E-01(2.92E-04)†	1.31E+00(9.41E-03)†	3.05E-01(1.31E-04)†	2.97E-01(5.59E-03)
WFG2	5	1.46E+00(4.29E-02)†	7.61E-01(5.21E-02)	1.40E+00(2.60E-02)†	3.25E-01(6.75E-05)‡	8.47E-01(3.14E-02)†	6.72E-01(6.96E-03)
	25	1.39E+00(4.39E-02)†	7.21E-01(5.31E-02)	1.42E+00(2.88E-02)†	3.21E-01(5.68E-05)‡	7.92E-01(3.58E-02)†	6.63E-01(4.90E-03)
	50	1.46E+00(3.83E-02)†	7.25E-01(5.35E-02)	1.50E+00(3.04E-02)†	3.19E-01(1.11E-04)‡	8.25E-01(3.43E-02)†	6.61E-01(4.98E-03)
	200	1.48E+00(4.26E-02)†	7.39E-01(5.35E-02)	1.48E+00(3.02E-02)†	3.18E-01(7.58E-05)‡	7.10E-01(2.93E-02)†	5.84E-01(3.59E-03)
WFG3	5	2.84E+00(2.50E-02)†	2.73E+00(2.57E-02)†	2.54E+00(1.75E-02)†	9.72E-01(5.55E-04)‡	2.46E+00(2.74E-02)	2.45E+00(2.85E-02)
	25	2.66E+00(5.45E-02)†	2.71E+00(2.39E-02)†	2.40E+00(2.95E-02)	9.53E-01(5.26E-04)‡	2.49E+00(3.83E-02)	2.42E+00(5.22E-02)
	50	2.63E+00(6.47E-02)	2.77E+00(4.33E-02)†	2.40E+00(5.07E-02)	9.49E-01(4.75E-04)‡	2.50E+00(3.52E-02)	2.50E+00(5.19E-02)
	200	2.54E+00(7.89E-02)†	2.84E+00(3.53E-02)†	2.34E+00(6.56E-02)	9.39E-01(5.30E-04)‡	2.49E+00(4.21E-02)†	2.30E+00(4.42E-02)
WFG4	5	7.70E-01(8.00E-04)†	4.58E-01(2.10E-04)†	7.93E-01(8.03E-04)†	3.29E-01(1.04E-03)‡	3.59E-01(1.43E-04)	3.56E-01(6.53E-05)
	25	6.93E-01(6.25E-04)†	4.18E-01(7.16E-05)†	7.29E-01(8.12E-04)†	3.01E-01(2.17E-03)	3.00E-01(4.75E-05)‡	3.07E-01(6.45E-05)
	50	6.52E-01(5.99E-04)†	4.04E-01(5.64E-05)†	7.08E-01(4.77E-04)†	3.73E-01(3.53E-03)†	2.92E-01(6.83E-05)‡	2.98E-01(6.31E-05)
	200	6.18E-01(3.51E-04)†	3.77E-01(3.45E-05)†	6.71E-01(3.42E-04)†	3.67E-01(4.62E-03)†	2.74E-01(8.93E-05)‡	2.82E-01(3.85E-05)
WFG5	5	7.81E-01(1.11E-03)†	4.79E-01(2.36E-04)†	8.73E-01(5.72E-04)†	8.69E-02(8.10E-05)‡	3.92E-01(1.22E-04)	3.96E-01(8.94E-05)
	25	6.95E-01(9.82E-04)†	4.39E-01(9.87E-05)†	7.89E-01(8.99E-04)†	7.94E-02(1.11E-04)‡	3.42E-01(6.04E-05)‡	3.48E-01(6.11E-05)
	50	6.57E-01(4.50E-04)†	4.30E-01(7.46E-05)†	7.61E-01(4.28E-04)†	7.47E-02(9.08E-05)‡	3.31E-01(5.69E-05)‡	3.37E-01(3.45E-05)
	200	6.25E-01(4.10E-04)†	4.04E-01(1.26E-04)†	7.31E-01(4.33E-04)†	8.06E-02(7.04E-05)‡	3.25E-01(4.55E-05)‡	3.31E-01(3.66E-05)
WFG6	5	1.53E+00(1.16E-01)†	8.47E-01(1.09E-01)‡	1.60E+00(1.08E-01)†	6.83E-02(8.79E-05)‡	1.24E+00(1.43E-01)†	1.02E+00(1.35E-01)
	25	1.22E+00(1.98E-01)†	8.38E-01(1.23E-01)	1.28E+00(1.73E-01)†	7.77E-02(7.68E-05)‡	1.25E+00(2.74E-01)†	8.78E-01(2.45E-01)
	50	1.14E+00(2.21E-01)†	8.43E-01(1.29E-01)	1.32E+00(2.20E-01)†	8.25E-02(5.23E-05)‡	1.16E+00(3.04E-01)†	9.41E-01(2.91E-01)
	200	1.20E+00(2.81E-01)†	8.45E-01(1.44E-01)	1.27E+00(2.23E-01)†	8.68E-02(8.29E-05)‡	1.06E+00(3.37E-01)	9.93E-01(3.24E-01)
WFG7	5	8.81E-01(9.43E-04)†	4.87E-01(5.95E-04)†	1.01E+00(5.59E-04)†	1.91E-01(2.99E-04)‡	5.03E-01(1.84E-04)†	4.66E-01(1.05E-04)
	25	8.04E-01(4.72E-04)†	4.06E-01(3.88E-04)†	9.34E-01(7.22E-04)†	1.83E-01(3.08E-04)‡	3.92E-01(1.12E-04)†	3.71E-01(3.94E-05)
	50	7.80E-01(4.29E-04)†	4.09E-01(3.25E-04)†	9.08E-01(4.78E-04)†	1.71E-01(1.98E-04)‡	3.74E-01(8.72E-05)†	3.49E-01(4.74E-05)
	200	7.55E-01(2.71E-04)†	4.20E-01(2.69E-04)†	8.79E-01(4.13E-04)†	1.64E-01(2.49E-04)‡	3.54E-01(5.22E-05)†	3.34E-01(6.02E-05)
WFG8	5	8.87E-01(6.78E-04)†	4.87E-01(6.47E-04)†	1.01E+00(6.55E-04)†	1.94E-01(2.42E-04)‡	5.00E-01(1.52E-04)†	4.64E-01(1.19E-04)
	25	8.04E-01(4.72E-04)†	4.06E-01(3.88E-04)†	9.34E-01(7.22E-04)†	1.88E-01(2.05E-04)‡	3.89E-01(5.38E-05)†	3.71E-01(4.25E-05)
	50	7.73E-01(4.13E-04)†	4.11E-01(2.36E-04)†	9.07E-01(2.16E-04)†	1.65E-01(2.77E-04)‡	3.72E-01(4.00E-05)†	3.51E-01(6.01E-05)
	200	7.55E-01(3.56E-04)†	4.18E-01(3.61E-04)†	8.79E-01(4.67E-04)†	1.66E-01(2.33E-04)‡	3.53E-01(5.19E-05)†	3.33E-01(3.65E-05)
WFG9	5	1.19E+00(3.33E-02)†	7.35E-01(4.55E-02)‡	1.27E+00(4.12E-02)†	1.40E-01(1.68E-04)‡	1.09E+00(8.88E-02)	1.07E+00(1.01E-01)
	25	8.04E-01(4.72E-04)†	4.06E-01(3.88E-04)‡	9.34E-01(7.22E-04)†	1.41E-01(1.26E-04)‡	8.24E-01(8.30E-02)	7.39E-01(7.24E-02)
	50	1.01E+00(4.76E-02)†	6.87E-01(8.93E-02)‡	1.03E+00(2.48E-02)†	1.37E-01(1.96E-04)‡	1.02E+00(1.50E-01)†	7.37E-01(2.24E-02)
	200	9.78E-01(3.22E-02)†	6.79E-01(8.71E-02)‡	9.84E-01(3.11E-02)†	1.29E-01(8.53E-05)‡	9.40E-01(1.31E-01)	9.06E-01(1.45E-01)

TABLE 60
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 5 TO 4 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	3.72E+02(1.73E+02)†	4.11E+01(1.94E+01)‡	3.24E+02(9.01E+01)†	1.34E+03(2.71E+03)†	5.91E+01(9.15E+01)‡	9.10E+01(9.26E+01)
	25	3.30E+02(5.34E+02)†	3.96E+01(7.81E+00)‡	3.13E+02(1.68E+02)†	1.54E+03(3.51E+03)†	4.11E+01(2.11E+01)‡	7.26E+01(9.96E+01)
	50	3.13E+02(4.65E+02)†	3.76E+01(8.55E+00)	3.00E+02(2.11E+02)†	1.66E+03(3.18E+03)†	3.86E+01(2.96E+01)	4.05E+01(1.41E+02)
	200	2.69E+02(1.06E+03)†	3.28E+01(5.82E+00)†	2.78E+02(4.85E+02)†	1.81E+03(4.54E+03)†	3.45E+01(4.03E+01)†	3.13E+01(3.48E+01)
F2	5	1.01E+00(5.26E-03)†	2.80E-01(5.23E-04)†	7.53E-01(1.11E-03)†	1.35E+01(3.65E-01)†	2.51E-01(6.56E-04)†	2.00E-01(2.91E-04)
	25	8.62E-01(7.58E-03)†	2.48E-01(1.28E-04)†	6.81E-01(1.78E-03)†	1.57E+01(1.30E-01)†	1.36E-01(1.57E-04)†	1.29E-01(1.14E-04)
	50	7.26E-01(4.92E-03)†	2.30E-01(7.48E-05)†	6.23E-01(1.54E-03)†	1.59E+01(8.64E-01)†	1.22E-01(1.07E-04)†	1.11E-01(9.04E-05)
	200	6.14E-01(2.14E-03)†	1.88E-01(7.35E-05)†	5.64E-01(3.04E-03)†	1.39E+01(1.13E+01)†	1.03E-01(6.36E-05)†	9.53E-02(7.04E-05)
F3	5	7.88E+02(1.20E+03)†	1.11E+02(1.53E+02)‡	7.45E+02(8.29E+02)†	1.87E+03(8.63E+03)†	1.53E+02(3.65E+02)‡	2.54E+02(4.81E+02)
	25	6.45E+02(1.28E+03)†	1.06E+02(5.72E+01)‡	6.50E+02(1.01E+03)†	2.13E+03(9.25E+03)†	1.13E+02(1.24E+02)‡	2.06E+02(9.21E+02)
	50	6.10E+02(1.85E+03)†	9.90E+01(3.93E+01)‡	6.23E+02(7.97E+02)†	2.32E+03(1.03E+04)†	9.29E+01(7.39E+01)‡	1.13E+02(7.22E+02)
	200	5.58E+02(1.32E+03)†	7.99E+01(4.56E+01)‡	5.70E+02(8.55E+02)†	2.60E+03(3.88E+03)†	8.23E+01(5.33E+01)	8.56E+01(9.12E+01)
F4	5	1.58E+00(2.53E-04)†	2.62E-01(4.80E-04)‡	1.12E+00(1.59E-03)†	2.52E-01(2.05E-02)‡	4.07E-01(8.61E-04)†	3.53E-01(1.53E-03)
	25	1.44E+00(5.44E-04)†	2.71E-01(2.45E-04)†	1.04E+00(2.08E-03)†	6.25E-02(2.64E-03)‡	2.12E-01(4.22E-04)	2.07E-01(4.46E-04)
	50	1.32E+00(1.27E-03)†	2.73E-01(1.29E-04)†	9.60E-01(1.95E-03)†	4.85E-02(1.44E-03)‡	1.93E-01(2.38E-04)	1.85E-01(3.66E-04)
	200	1.01E+00(1.29E-03)†	2.42E-01(1.06E-04)†	8.67E-01(2.18E-03)†	3.87E-02(2.45E-03)‡	1.73E-01(3.20E-04)	1.73E-01(2.08E-04)
WFG1	5	5.95E-01(2.04E-04)†	5.43E-01(8.40E-04)†	7.80E-01(1.26E-04)†	1.28E+00(1.85E-03)†	5.42E-01(1.23E-05)†	5.15E-01(5.46E-05)
	25	4.44E-01(5.33E-04)†	3.99E-01(4.01E-04)†	6.52E-01(3.37E-04)†	1.30E+00(5.00E-03)†	3.63E-01(6.04E-04)†	3.17E-01(3.67E-03)
	50	3.51E-01(2.66E-04)†	3.61E-01(2.80E-04)†	5.74E-01(2.05E-04)†	1.29E+00(3.67E-03)†	2.55E-01(2.60E-04)†	2.39E-01(1.15E-02)
	200	2.96E-01(1.12E-04)†	3.22E-01(1.82E-04)†	5.26E-01(9.36E-05)†	1.30E+00(1.53E-03)†	1.91E-01(1.99E-05)†	1.86E-01(2.19E-03)
WFG2	5	9.23E-01(6.50E-03)†	5.41E-01(3.70E-04)†	8.87E-01(2.80E-03)†	2.65E-01(1.66E-04)‡	5.03E-01(2.43E-03)	4.96E-01(1.05E-03)
	25	9.12E-01(5.90E-03)†	4.91E-01(7.24E-05)†	9.64E-01(7.56E-03)†	2.60E-01(3.13E-04)‡	3.64E-01(1.38E-03)‡	4.34E-01(7.74E-04)
	50	9.59E-01(2.45E-03)†	4.87E-01(9.96E-05)†	1.04E+00(3.38E-03)†	2.61E-01(4.86E-04)‡	3.55E-01(1.47E-03)‡	4.14E-01(8.30E-04)
	200	1.04E+00(2.18E-03)†	4.82E-01(1.01E-04)†	1.08E+00(4.12E-03)†	2.59E-01(3.15E-04)‡	3.47E-01(3.11E-04)‡	4.15E-01(6.84E-04)
WFG3	5	1.94E+00(2.59E-03)†	1.91E+00(4.14E-03)†	1.75E+00(2.20E-03)	1.04E+00(2.91E-03)‡	1.66E+00(1.79E-03)‡	1.73E+00(2.24E-03)
	25	1.88E+00(4.07E-03)†	2.00E+00(1.91E-03)†	1.74E+00(2.18E-03)†	9.66E-01(3.81E-03)‡	1.69E+00(2.57E-03)	1.68E+00(4.34E-03)
	50	1.85E+00(2.95E-03)†	2.04E+00(1.86E-03)†	1.72E+00(2.90E-03)	9.75E-01(4.52E-03)‡	1.74E+00(3.19E-03)	1.71E+00(4.02E-03)
	200	1.83E+00(3.69E-03)†	2.06E+00(2.04E-03)†	1.73E+00(2.18E-03)	9.59E-01(1.80E-03)‡	1.71E+00(2.72E-03)	1.71E+00(3.99E-03)
WFG4	5	5.06E-01(3.58E-04)†	3.54E-01(4.97E-04)†	5.70E-01(4.02E-04)†	4.55E-01(2.95E-03)†	2.39E-01(9.28E-05)†	2.23E-01(5.16E-05)
	25	3.68E-01(1.34E-04)†	3.02E-01(7.72E-05)†	4.40E-01(3.09E-04)†	4.09E-01(2.08E-03)†	1.65E-01(3.20E-05)	1.66E-01(1.53E-05)
	50	3.31E-01(1.65E-04)†	2.93E-01(8.70E-05)†	4.08E-01(2.71E-04)†	4.29E-01(1.49E-03)†	1.56E-01(2.67E-05)	1.55E-01(2.36E-05)
	200	3.01E-01(1.48E-04)†	2.67E-01(2.87E-05)†	3.74E-01(2.29E-04)†	4.27E-01(1.62E-03)†	1.41E-01(1.88E-05)	1.42E-01(1.62E-05)
WFG5	5	5.21E-01(7.47E-04)†	3.49E-01(4.18E-04)†	6.59E-01(4.82E-04)†	8.83E-02(3.53E-05)‡	2.67E-01(9.37E-05)	2.64E-01(7.50E-05)
	25	3.75E-01(3.27E-04)†	2.81E-01(8.41E-05)†	4.99E-01(7.44E-04)†	7.44E-02(5.73E-05)‡	1.99E-01(2.28E-05)†	1.94E-01(1.01E-05)
	50	3.42E-01(1.98E-04)†	2.72E-01(5.48E-05)†	4.67E-01(2.22E-04)†	7.40E-02(8.59E-05)‡	1.89E-01(1.86E-05)†	1.87E-01(1.47E-05)
	200	3.15E-01(2.10E-04)†	2.61E-01(3.36E-05)†	4.41E-01(2.37E-04)†	7.17E-02(6.13E-05)‡	1.86E-01(2.10E-05)†	1.83E-01(1.78E-05)
WFG6	5	7.71E-01(2.80E-03)	5.08E-01(1.07E-03)‡	9.12E-01(1.09E-03)	9.43E-02(3.29E-05)‡	1.15E+00(1.72E-01)†	9.41E-01(2.04E-01)
	25	5.02E-01(7.25E-04)	4.19E-01(9.00E-05)	6.33E-01(2.59E-04)	9.63E-02(3.44E-05)‡	1.15E+00(2.82E-01)†	9.13E-01(3.06E-01)
	50	4.34E-01(4.34E-04)	4.15E-01(5.71E-05)	5.82E-01(2.15E-04)	9.17E-02(2.82E-05)‡	9.84E-01(3.26E-01)†	7.22E-01(2.22E-01)
	200	4.02E-01(2.45E-04)	3.88E-01(5.49E-05)	5.54E-01(1.92E-04)	9.10E-02(3.93E-05)‡	7.42E-01(1.76E-01)†	6.20E-01(2.24E-01)
WFG7	5	6.23E-01(6.31E-04)†	4.07E-01(7.03E-04)†	7.92E-01(7.09E-04)†	2.29E-01(7.51E-04)‡	3.95E-01(1.89E-04)†	3.45E-01(2.21E-04)
	25	4.66E-01(2.48E-04)†	3.47E-01(2.31E-04)†	6.38E-01(2.52E-04)†	2.00E-01(4.47E-04)‡	2.45E-01(6.91E-05)†	2.19E-01(4.21E-05)
	50	4.37E-01(2.77E-04)†	3.73E-01(4.17E-04)†	6.06E-01(2.69E-04)†	1.90E-01(2.87E-04)‡	2.19E-01(4.09E-05)†	1.99E-01(3.38E-05)
	200	4.17E-01(1.96E-04)†	3.81E-01(2.46E-04)†	5.86E-01(2.08E-04)†	1.77E-01(1.55E-04)‡	2.10E-01(2.72E-05)†	1.89E-01(1.72E-05)
WFG8	5	6.29E-01(4.23E-04)†	4.12E-01(8.52E-04)†	7.93E-01(8.58E-04)†	2.41E-01(8.10E-04)‡	3.94E-01(2.83E-04)†	3.39E-01(1.50E-04)
	25	4.66E-01(2.48E-04)†	3.47E-01(2.31E-04)†	6.38E-01(2.52E-04)†	2.07E-01(2.53E-04)‡	2.43E-01(3.55E-05)†	2.17E-01(3.67E-05)
	50	4.45E-01(3.94E-04)†	3.73E-01(1.88E-04)†	6.07E-01(1.38E-04)†	1.92E-01(2.85E-04)‡	2.20E-01(4.67E-05)†	1.99E-01(1.48E-05)
	200	4.13E-01(2.65E-04)†	3.87E-01(2.69E-04)†	5.87E-01(3.06E-04)†	1.78E-01(2.93E-04)‡	2.09E-01(3.50E-05)†	1.89E-01(2.06E-05)
WFG9	5	8.36E-01(2.64E-03)	6.70E-01(2.98E-03)‡	9.86E-01(1.95E-03)†	1.53E-01(5.39E-04)‡	1.08E+00(1.24E-01)	9.83E-01(9.29E-02)
	25	4.66E-01(2.48E-04)‡	3.47E-01(2.31E-04)‡	6.38E-01(2.52E-04)	1.38E-01(2.06E-04)‡	6.78E-01(8.77E-02)	7.48E-01(1.60E-01)
	50	5.04E-01(6.66E-04)‡	4.64E-01(3.38E-03)‡	6.00E-01(5.05E-04)	1.29E-01(7.55E-05)‡	7.29E-01(1.26E-01)	6.64E-01(1.39E-01)
	200	4.72E-01(4.58E-04)‡	4.37E-01(4.51E-03)‡	5.66E-01(4.37E-04)	1.28E-01(9.90E-05)‡	5.98E-01(5.80E-02)	6.28E-01(9.45E-02)

TABLE 61
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 4 TO 3 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	3.57E+02(2.29E+02)†	4.89E+01(1.85E+01)‡	3.24E+02(9.38E+01)†	3.27E+02(7.25E+03)†	7.42E+01(5.45E+01)‡	1.39E+02(1.06E+02)
	25	1.82E+02(2.34E+02)†	4.25E+01(6.18E+00)‡	2.10E+02(1.46E+02)†	1.76E+02(6.54E+03)†	4.80E+01(2.91E+01)‡	9.90E+01(1.28E+02)
	50	1.27E+02(2.26E+02)†	4.01E+01(5.83E+00)‡	1.67E+02(1.81E+02)†	1.72E+02(8.65E+03)†	3.89E+01(2.10E+01)‡	4.63E+01(9.95E+01)
	200	4.42E+01(9.21E+01)†	3.46E+01(2.95E+00)†	1.04E+02(9.28E+01)†	3.25E+02(1.06E+04)†	4.09E+01(4.13E+01)†	3.24E+01(2.44E+01)
F2	5	8.83E-01(8.92E-03)†	3.43E-01(5.59E-04)†	5.87E-01(1.28E-03)†	6.15E+00(2.86E+00)†	1.58E-01(6.05E-04)†	1.15E-01(1.33E-04)
	25	3.91E-01(5.30E-03)†	2.46E-01(7.68E-05)†	3.39E-01(1.01E-03)†	9.97E+00(5.48E+00)†	7.50E-02(1.86E-04)†	6.37E-02(9.87E-05)
	50	2.19E-01(1.11E-03)†	2.17E-01(4.96E-05)†	2.68E-01(2.67E-04)†	8.91E+00(6.54E+00)†	6.33E-02(2.25E-04)†	5.32E-02(8.35E-05)
	200	1.33E-01(1.62E-04)†	1.73E-01(4.41E-05)†	2.28E-01(7.27E-05)†	1.75E+01(7.57E-03)†	5.60E-02(1.24E-04)†	4.20E-02(5.79E-05)
F3	5	7.05E+02(1.36E+03)†	1.27E+02(1.45E+02)‡	7.26E+02(9.65E+02)†	1.20E+03(5.30E+04)†	1.79E+02(3.06E+02)‡	3.46E+02(4.04E+03)
	25	3.65E+02(5.78E+02)†	1.07E+02(6.34E+01)‡	4.60E+02(4.41E+02)†	1.29E+03(6.76E+04)†	1.25E+02(1.81E+02)‡	2.84E+02(9.45E+02)
	50	2.70E+02(5.19E+02)†	9.40E+01(3.42E+01)‡	3.78E+02(2.94E+02)†	1.52E+03(8.71E+04)†	1.02E+02(1.12E+02)	1.16E+02(1.38E+03)
	200	9.17E+01(1.64E+02)†	7.73E+01(3.87E+01)‡	2.40E+02(1.43E+02)†	1.56E+03(2.78E+04)†	9.30E+01(1.62E+02)†	8.63E+01(5.79E+01)
F4	5	1.70E+00(1.00E-03)†	3.29E-01(9.39E-04)†	1.00E+00(3.56E-03)†	5.66E-01(1.74E-01)†	3.99E-01(1.23E-03)†	2.94E-01(1.80E-03)
	25	1.01E+00(3.39E-03)†	3.08E-01(2.36E-04)†	5.08E-01(2.31E-03)†	9.81E-02(1.61E-02)‡	1.88E-01(9.93E-04)†	1.63E-01(6.03E-04)
	50	5.48E-01(2.47E-03)†	2.88E-01(1.35E-04)†	3.86E-01(1.26E-04)†	9.67E-02(6.91E-03)‡	1.64E-01(8.49E-04)†	1.46E-01(8.40E-04)
	200	2.66E-01(3.47E-05)†	2.44E-01(5.95E-05)†	3.44E-01(3.67E-05)†	8.24E-02(4.11E-03)‡	1.52E-01(4.03E-04)	1.45E-01(5.56E-04)
WFG1	5	5.05E-01(2.35E-04)†	5.62E-01(9.42E-04)†	6.84E-01(1.07E-04)†	9.60E-01(1.42E-03)†	5.22E-01(9.57E-05)†	4.57E-01(2.93E-04)
	25	3.10E-01(4.89E-04)†	3.66E-01(4.36E-04)†	5.10E-01(4.07E-04)†	9.39E-01(1.80E-03)†	2.75E-01(4.11E-04)†	2.16E-01(3.10E-03)
	50	2.17E-01(3.70E-04)†	2.97E-01(2.67E-04)†	4.37E-01(2.39E-04)†	9.00E-01(2.06E-03)†	1.78E-01(1.86E-04)†	1.40E-01(3.90E-03)
	200	1.45E-01(1.96E-05)†	2.16E-01(1.20E-04)†	3.69E-01(1.54E-05)†	8.96E-01(1.25E-03)†	1.09E-01(4.34E-06)†	9.99E-02(6.22E-04)
WFG2	5	6.86E-01(1.70E-02)†	5.16E-01(1.13E-02)	6.77E-01(1.00E-02)†	1.85E-01(3.90E-04)‡	4.07E-01(1.54E-02)	4.46E-01(9.40E-03)
	25	6.12E-01(1.47E-02)†	4.49E-01(1.29E-02)†	6.90E-01(1.36E-02)†	1.84E-01(4.90E-04)‡	2.67E-01(1.63E-02)‡	3.54E-01(1.47E-03)
	50	6.04E-01(1.56E-02)†	4.40E-01(1.32E-02)†	7.21E-01(1.39E-02)†	1.98E-01(1.35E-03)‡	3.06E-01(1.69E-02)	3.36E-01(9.02E-04)
	200	6.44E-01(1.65E-02)†	4.33E-01(1.43E-02)†	7.45E-01(1.36E-02)†	1.75E-01(1.03E-03)‡	2.94E-01(1.88E-02)	3.47E-01(1.25E-03)
WFG3	5	1.45E+00(1.13E-02)†	1.49E+00(5.13E-03)†	1.36E+00(5.44E-03)†	1.67E+00(6.66E-03)†	1.23E+00(7.27E-03)	1.20E+00(6.40E-03)
	25	1.36E+00(1.40E-02)†	1.53E+00(5.39E-03)†	1.32E+00(1.05E-02)†	1.59E+00(1.09E-02)†	1.20E+00(1.34E-02)	1.20E+00(8.18E-03)
	50	1.33E+00(1.74E-02)†	1.54E+00(8.21E-03)†	1.31E+00(1.25E-02)†	1.59E+00(1.50E-02)†	1.20E+00(1.31E-02)	1.16E+00(8.56E-03)
	200	1.32E+00(1.85E-02)†	1.54E+00(9.20E-03)†	1.30E+00(1.52E-02)†	1.65E+00(1.11E-02)†	1.24E+00(1.15E-02)†	1.18E+00(7.68E-03)
WFG4	5	3.25E-01(2.96E-04)†	3.69E-01(6.38E-04)†	4.13E-01(2.19E-04)†	5.76E-01(2.45E-03)†	1.60E-01(1.34E-04)†	1.40E-01(6.95E-05)
	25	2.09E-01(6.27E-05)†	2.79E-01(1.00E-04)†	2.92E-01(5.41E-05)†	4.62E-01(1.48E-03)†	6.86E-02(2.36E-05)‡	7.29E-02(2.65E-05)
	50	1.92E-01(3.63E-05)†	2.55E-01(7.89E-05)†	2.74E-01(1.06E-04)†	4.25E-01(1.50E-03)†	6.13E-02(1.81E-05)†	5.87E-02(1.22E-05)
	200	1.83E-01(4.31E-05)†	2.06E-01(1.85E-05)†	2.62E-01(3.56E-05)†	3.71E-01(2.25E-03)†	4.65E-02(5.74E-06)†	4.30E-02(6.62E-06)
WFG5	5	3.41E-01(4.25E-04)†	3.23E-01(3.60E-04)†	4.89E-01(2.71E-04)†	1.04E-01(1.98E-05)‡	2.15E-01(3.24E-04)	2.16E-01(1.87E-04)
	25	2.27E-01(5.53E-05)†	2.39E-01(1.01E-04)†	3.52E-01(9.32E-05)†	9.54E-02(3.02E-05)‡	1.17E-01(7.01E-05)†	1.06E-01(8.92E-05)
	50	2.06E-01(5.83E-05)†	2.20E-01(4.10E-05)†	3.32E-01(6.04E-05)†	9.22E-02(1.56E-05)‡	1.07E-01(4.05E-05)†	9.51E-02(2.05E-05)
	200	1.92E-01(4.93E-05)†	1.91E-01(1.62E-05)†	3.15E-01(5.79E-05)†	9.21E-02(1.44E-05)†	1.01E-01(2.27E-05)†	8.79E-02(2.48E-05)
WFG6	5	1.03E+00(1.78E-01)†	9.26E-01(9.87E-02)	1.12E+00(1.32E-01)†	9.21E-02(1.50E-05)‡	8.87E-01(2.02E-01)	8.33E-01(2.37E-01)
	25	1.00E+00(2.82E-01)†	9.77E-01(1.39E-01)†	1.06E+00(2.31E-01)†	8.75E-02(2.47E-05)‡	9.60E-01(2.78E-01)†	5.46E-01(2.90E-01)
	50	9.89E-01(2.68E-01)†	9.33E-01(1.62E-01)	1.07E+00(2.24E-01)†	8.86E-02(2.10E-05)‡	7.48E-01(3.47E-01)	7.36E-01(3.73E-01)
	200	9.43E-01(2.75E-01)†	9.37E-01(1.96E-01)†	1.09E+00(2.27E-01)†	9.06E-02(1.30E-05)‡	8.42E-01(3.40E-01)†	4.35E-01(2.02E-01)
WFG7	5	4.18E-01(4.45E-04)†	5.06E-01(2.55E-03)†	6.20E-01(3.51E-04)†	3.76E-01(3.45E-03)†	3.27E-01(1.52E-04)†	2.43E-01(2.45E-04)
	25	2.49E-01(1.02E-04)†	4.85E-01(5.31E-04)†	4.39E-01(9.85E-05)†	2.40E-01(5.41E-04)†	1.56E-01(3.44E-05)†	1.15E-01(2.64E-05)
	50	2.21E-01(8.14E-05)†	4.56E-01(4.98E-04)†	4.11E-01(9.61E-05)†	2.08E-01(6.41E-04)†	1.40E-01(2.88E-05)†	1.03E-01(1.25E-05)
	200	2.04E-01(9.79E-05)†	3.24E-01(2.52E-04)†	3.98E-01(6.63E-05)†	1.76E-01(1.88E-04)†	1.33E-01(3.03E-05)†	9.55E-02(1.75E-05)
WFG8	5	4.25E-01(2.76E-04)†	5.14E-01(2.55E-03)†	6.13E-01(4.04E-04)†	3.70E-01(3.00E-03)†	3.21E-01(3.02E-04)†	2.44E-01(2.22E-04)
	25	2.49E-01(1.02E-04)†	4.85E-01(5.31E-04)†	4.39E-01(9.85E-05)†	2.30E-01(5.75E-04)†	1.56E-01(3.09E-05)†	1.15E-01(2.41E-05)
	50	2.18E-01(8.89E-05)†	4.55E-01(4.83E-04)†	4.11E-01(8.73E-05)†	2.10E-01(2.41E-04)†	1.41E-01(3.76E-05)†	1.02E-01(2.97E-05)
	200	2.05E-01(6.20E-05)†	3.23E-01(3.72E-04)†	3.93E-01(1.57E-04)†	1.72E-01(2.07E-04)†	1.31E-01(4.58E-05)†	9.65E-02(1.22E-05)
WFG9	5	6.32E-01(5.29E-02)‡	9.09E-01(3.21E-02)†	8.42E-01(4.76E-02)†	2.24E-01(1.74E-03)‡	8.54E-01(7.38E-02)	7.74E-01(6.30E-02)
	25	2.49E-01(1.02E-04)‡	4.85E-01(5.31E-04)	4.39E-01(9.85E-05)	1.43E-01(2.23E-04)‡	4.95E-01(6.89E-02)	5.21E-01(1.02E-01)
	50	3.27E-01(1.04E-02)	6.28E-01(7.27E-02)	4.09E-01(4.58E-03)	1.36E-01(1.95E-04)‡	6.04E-01(1.15E-01)†	4.55E-01(6.82E-02)
	200	3.07E-01(1.11E-02)‡	4.33E-01(5.50E-02)‡	3.90E-01(1.91E-03)‡	1.31E-01(3.24E-04)‡	6.10E-01(1.50E-01)	5.59E-01(1.14E-01)

TABLE 62
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 3 TO 2 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	2.83E+02(5.63E+02)†	6.17E+01(3.48E+01)‡	3.06E+02(1.71E+02)†	3.68E+02(3.83E+03)†	8.56E+01(1.34E+02)‡	1.65E+02(3.54E+03)
	25	9.74E+01(8.63E+01)‡	4.31E+01(5.92E+00)‡	1.80E+02(2.96E+02)†	1.30E+02(1.63E+03)†	5.46E+01(4.81E+01)‡	1.01E+02(1.35E+03)
	50	5.92E+01(4.01E+01)†	4.08E+01(1.02E+00)	1.35E+02(7.18E+01)†	9.05E+01(4.62E+02)†	4.39E+01(3.85E+01)†	4.12E+01(1.74E+02)
	200	4.30E+01(1.79E+01)†	3.97E+01(7.57E-02)†	1.12E+02(1.90E+01)†	4.05E+01(1.19E+02)†	4.87E+01(5.92E+01)†	2.40E+01(6.44E+01)
F2	5	6.30E-01(1.44E-02)†	2.91E-01(3.47E-04)†	4.84E-01(1.03E-03)†	2.20E+00(8.24E-01)†	6.06E-02(2.50E-04)†	3.99E-02(1.47E-04)
	25	1.15E-01(8.89E-05)†	1.60E-01(8.65E-06)†	2.30E-01(6.56E-05)†	1.66E-01(3.43E-03)†	2.15E-02(3.78E-05)†	1.68E-02(4.39E-05)
	50	9.50E-02(1.08E-05)†	1.39E-01(3.36E-06)†	2.24E-01(3.98E-05)†	9.16E-02(3.91E-04)†	1.85E-02(6.70E-05)†	1.21E-02(4.03E-05)
	200	9.26E-02(1.03E-05)†	1.18E-01(1.28E-07)†	2.21E-01(2.49E-05)†	5.95E-02(4.07E-04)†	1.45E-02(5.83E-05)†	7.79E-03(1.25E-05)
F3	5	5.31E+02(1.46E+03)†	1.43E+02(1.10E+02)‡	6.51E+02(7.13E+02)†	9.60E+02(2.29E+04)†	1.85E+02(3.33E+02)‡	3.81E+02(1.40E+04)
	25	1.90E+02(3.37E+02)‡	1.03E+02(2.44E+01)‡	3.74E+02(3.15E+02)†	4.44E+02(8.90E+03)†	1.22E+02(1.22E+02)‡	2.71E+02(1.02E+04)
	50	1.15E+02(2.94E+02)†	1.02E+02(8.14E+00)	2.91E+02(3.01E+02)†	2.80E+02(6.53E+03)†	9.96E+01(1.33E+02)	1.05E+02(1.87E+03)
	200	1.05E+02(5.86E+01)†	9.80E+01(7.90E-01)†	2.80E+02(6.12E+01)†	9.86E+01(1.28E+03)†	1.02E+02(3.04E+02)†	6.91E+01(3.98E+02)
F4	5	1.67E+00(2.70E-03)†	3.90E-01(1.19E-03)†	8.48E-01(2.75E-03)†	3.97E-01(3.22E-02)†	3.31E-01(2.41E-03)†	1.66E-01(1.57E-03)
	25	3.66E-01(8.46E-04)†	2.88E-01(2.22E-05)†	3.59E-01(4.42E-05)†	1.07E-01(1.95E-03)‡	1.58E-01(6.83E-04)†	1.19E-01(7.57E-04)
	50	2.53E-01(1.84E-06)†	2.63E-01(1.20E-05)†	3.49E-01(3.30E-05)†	9.83E-02(6.25E-04)‡	1.37E-01(4.57E-04)†	1.15E-01(4.57E-04)
	200	2.46E-01(2.84E-07)†	2.36E-01(2.90E-06)†	3.47E-01(2.36E-05)†	1.13E-01(2.19E-03)‡	1.32E-01(2.91E-04)	1.34E-01(2.98E-04)
WFG1	5	4.29E-01(4.98E-04)†	6.68E-01(6.88E-04)†	5.98E-01(1.91E-04)†	1.63E+00(4.42E-04)†	4.49E-01(3.68E-04)†	3.52E-01(3.85E-04)
	25	2.09E-01(3.13E-04)†	3.88E-01(2.98E-04)†	4.05E-01(2.80E-04)†	1.65E+00(9.26E-05)†	2.19E-01(1.81E-04)†	1.40E-01(2.40E-03)
	50	1.31E-01(1.20E-04)†	2.89E-01(1.57E-04)†	3.38E-01(9.48E-05)†	1.65E+00(1.07E-04)†	1.41E-01(4.71E-05)†	8.14E-02(1.42E-03)
	200	6.46E-02(1.61E-06)†	1.71E-01(2.52E-05)†	2.78E-01(5.64E-06)†	1.65E+00(7.92E-05)†	8.93E-02(1.03E-05)†	4.92E-02(2.19E-04)
WFG2	5	3.46E-01(9.02E-04)‡	3.96E-01(1.94E-03)‡	4.42E-01(5.09E-04)	7.73E-01(8.62E-04)†	1.75E-01(7.01E-04)‡	4.35E-01(1.31E-03)
	25	2.19E-01(6.40E-05)‡	2.17E-01(1.27E-05)‡	3.63E-01(2.30E-04)‡	7.86E-01(5.52E-05)†	7.52E-02(1.52E-04)‡	3.83E-01(9.47E-04)
	50	2.18E-01(5.97E-05)‡	2.04E-01(7.94E-06)‡	3.63E-01(1.26E-04)‡	7.84E-01(1.96E-05)†	6.94E-02(1.85E-04)‡	3.81E-01(6.08E-04)
	200	2.20E-01(1.34E-04)‡	1.85E-01(1.82E-06)‡	3.66E-01(2.08E-04)	7.80E-01(5.24E-06)†	6.27E-02(1.36E-04)‡	3.75E-01(4.38E-04)
WFG3	5	8.57E-01(6.04E-04)†	8.22E-01(6.25E-04)†	8.89E-01(2.05E-04)†	3.40E+00(7.62E-03)†	4.59E-01(1.48E-03)†	4.00E-01(3.37E-03)
	25	6.62E-01(1.87E-04)†	7.70E-01(5.56E-05)†	6.91E-01(2.15E-04)†	3.28E+00(7.12E-04)†	3.47E-01(8.26E-03)	3.12E-01(3.70E-03)
	50	6.46E-01(1.48E-04)†	7.66E-01(5.80E-05)†	6.73E-01(2.64E-04)†	3.27E+00(3.76E-04)†	3.96E-01(4.84E-03)†	3.37E-01(1.15E-03)
	200	6.44E-01(1.09E-04)†	7.65E-01(3.17E-05)†	6.83E-01(2.22E-04)†	3.27E+00(1.14E-04)†	4.03E-01(1.16E-03)†	3.59E-01(2.38E-03)
WFG4	5	1.90E-01(8.89E-05)†	3.80E-01(5.64E-04)†	2.79E-01(1.06E-04)†	7.71E-01(1.67E-03)†	9.97E-02(4.54E-05)	9.75E-02(5.21E-05)
	25	1.29E-01(2.31E-05)†	2.44E-01(4.70E-05)†	2.05E-01(2.32E-05)†	7.09E-01(6.14E-04)†	2.58E-02(3.12E-06)‡	3.92E-02(2.31E-05)
	50	1.17E-01(9.04E-06)†	2.14E-01(3.03E-05)†	1.94E-01(1.81E-05)†	6.88E-01(4.14E-04)†	2.10E-02(2.16E-06)	2.17E-02(1.21E-05)
	200	1.07E-01(8.27E-06)†	1.70E-01(1.40E-05)†	1.84E-01(1.35E-05)†	6.27E-01(3.05E-04)†	1.93E-02(1.68E-06)†	1.37E-02(4.52E-06)
WFG5	5	2.17E-01(2.80E-04)†	2.99E-01(2.52E-04)†	3.48E-01(1.90E-04)†	1.38E-01(1.90E-04)‡	1.73E-01(3.61E-04)‡	1.96E-01(4.54E-04)
	25	1.50E-01(1.80E-05)†	1.94E-01(4.76E-05)†	2.62E-01(2.54E-05)†	1.05E-01(4.15E-05)†	9.00E-02(1.65E-05)†	8.07E-02(4.58E-04)
	50	1.39E-01(5.84E-06)†	1.74E-01(2.12E-05)†	2.52E-01(1.55E-05)†	1.01E-01(2.71E-05)†	8.67E-02(1.71E-05)†	6.31E-02(5.25E-05)
	200	1.34E-01(5.80E-06)†	1.47E-01(8.65E-06)†	2.43E-01(1.68E-05)†	9.58E-02(1.51E-05)†	8.32E-02(2.33E-05)†	6.11E-02(6.58E-06)
WFG6	5	3.32E-01(4.81E-04)†	5.93E-01(1.52E-03)†	4.96E-01(1.18E-03)†	6.06E-01(8.78E-04)†	3.98E-01(7.22E-02)†	1.67E-01(2.34E-03)
	25	1.82E-01(3.36E-05)†	3.34E-01(1.11E-04)†	3.20E-01(4.40E-05)†	5.85E-01(3.18E-04)†	1.52E-01(4.43E-02)†	5.19E-02(7.85E-04)
	50	1.62E-01(9.57E-06)†	2.88E-01(4.91E-05)†	3.04E-01(3.31E-05)†	5.82E-01(2.13E-04)†	7.40E-02(8.17E-04)†	3.12E-02(2.14E-05)
	200	1.48E-01(2.14E-05)†	2.16E-01(1.70E-05)†	2.90E-01(4.06E-05)†	5.83E-01(3.31E-04)†	6.69E-02(5.06E-04)†	2.98E-02(2.27E-04)
WFG7	5	2.56E-01(1.56E-04)†	6.92E-01(4.35E-03)†	4.64E-01(2.58E-04)†	5.39E-01(2.45E-03)†	2.14E-01(2.53E-04)†	1.13E-01(1.36E-04)
	25	1.16E-01(2.10E-05)†	4.99E-01(7.13E-04)†	3.08E-01(4.42E-05)†	2.35E-01(2.15E-04)†	8.85E-02(3.71E-05)†	3.08E-02(2.07E-05)
	50	9.73E-02(7.29E-06)†	4.01E-01(5.95E-04)†	2.90E-01(2.52E-05)†	2.06E-01(1.35E-04)†	7.81E-02(3.18E-05)†	2.39E-02(7.42E-06)
	200	8.46E-02(4.63E-06)†	2.16E-01(1.62E-04)†	2.79E-01(2.07E-05)†	1.83E-01(7.46E-05)†	7.40E-02(1.62E-05)†	2.07E-02(1.62E-06)
WFG8	5	2.61E-01(2.30E-04)†	7.13E-01(1.30E-03)†	4.63E-01(1.10E-04)†	5.32E-01(2.56E-03)†	2.12E-01(2.56E-04)†	1.16E-01(1.59E-04)
	25	1.16E-01(2.10E-05)†	4.99E-01(7.13E-04)†	3.08E-01(4.42E-05)†	2.31E-01(2.11E-04)†	8.78E-02(3.30E-05)†	3.05E-02(1.62E-05)
	50	9.74E-02(1.44E-05)†	3.96E-01(6.50E-04)†	2.91E-01(2.96E-05)†	2.08E-01(1.53E-04)†	7.92E-02(2.48E-05)†	2.36E-02(5.79E-06)
	200	8.42E-02(5.36E-06)†	2.15E-01(1.53E-04)†	2.80E-01(1.59E-05)†	1.81E-01(1.49E-04)†	7.44E-02(2.60E-05)†	2.07E-02(2.38E-06)
WFG9	5	3.00E-01(1.03E-03)‡	7.94E-01(5.00E-03)†	5.72E-01(4.78E-03)	3.33E-01(5.77E-03)‡	5.22E-01(1.05E-02)‡	5.33E-01(3.52E-02)
	25	1.16E-01(2.10E-05)	4.99E-01(7.13E-04)†	3.08E-01(4.42E-05)	1.29E-01(1.27E-04)	2.86E-01(2.30E-02)	2.83E-01(5.47E-02)
	50	1.26E-01(2.73E-05)	3.63E-01(7.60E-03)	2.53E-01(3.37E-05)	1.21E-01(6.90E-05)	3.33E-01(1.88E-02)	2.87E-01(4.71E-02)
	200	1.19E-01(3.22E-05)‡	1.94E-01(7.83E-03)‡	2.46E-01(2.39E-05)‡	1.22E-01(9.98E-05)‡	3.25E-01(1.85E-02)	3.22E-01(4.50E-02)

TABLE 63
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 2 TO 3 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.21E+02(1.20E+02)†	2.67E+01(3.45E+01)‡	1.90E+02(2.00E+02)†	1.70E+02(1.98E+03)†	4.31E+01(3.66E+01)‡	7.39E+01(1.22E+03)
	25	2.00E+01(3.01E+01)†	1.11E-01(2.28E-03)‡	8.96E+01(8.41E+01)†	5.58E+01(7.14E+02)†	5.89E+00(5.20E+00)†	1.13E+00(7.35E-01)
	50	4.87E+00(3.59E+00)†	5.87E-03(3.07E-06)	6.82E+01(6.47E+00)†	4.13E+01(1.49E+02)†	6.52E-01(7.23E-01)†	1.97E-01(4.62E-01)
	200	1.88E-03(2.74E-09)†	1.86E-03(7.13E-12)†	6.34E+01(4.78E+00)†	1.30E+02(9.95E+02)†	1.85E-03(6.38E-11)†	1.71E-03(1.89E-09)
F2	5	1.29E-01(7.43E-03)†	8.87E-02(1.49E-04)†	2.12E-01(2.49E-04)†	5.10E-01(7.21E-02)†	2.24E-02(2.77E-05)†	1.14E-02(1.41E-05)
	25	5.44E-03(9.32E-09)†	8.10E-03(1.43E-07)†	1.39E-01(3.34E-05)†	2.20E-01(2.58E-03)†	5.68E-03(1.29E-07)†	5.26E-03(3.88E-07)
	50	5.23E-03(8.43E-09)†	5.67E-03(1.72E-08)†	1.37E-01(2.19E-05)†	2.61E-01(1.06E-02)†	5.21E-03(2.62E-08)†	4.87E-03(1.98E-07)
	200	5.31E-03(8.56E-09)†	5.01E-03(1.03E-08)†	1.39E-01(3.08E-05)†	2.13E-01(7.61E-03)†	5.16E-03(3.12E-09)†	4.56E-03(1.26E-08)
F3	5	2.33E+02(4.72E+02)†	5.95E+01(1.19E+02)‡	4.22E+02(5.36E+02)†	5.16E+02(1.79E+04)†	1.01E+02(2.37E+02)‡	1.63E+02(7.97E+03)
	25	5.24E+01(1.29E+02)†	3.41E-01(1.25E-02)‡	2.18E+02(1.33E+02)†	1.94E+02(3.97E+03)†	1.65E+01(4.37E+01)†	4.01E+00(2.19E+01)
	50	1.19E+01(1.91E+01)†	1.89E-02(3.42E-05)‡	1.81E+02(4.47E+01)†	1.30E+02(3.60E+03)†	1.94E+00(2.98E+00)†	8.55E-02(7.27E-02)
	200	5.46E-03(4.95E-08)†	5.24E-03(2.26E-10)†	1.73E+02(4.45E+01)†	3.74E+02(1.45E+04)†	5.16E-03(2.56E-09)†	4.68E-03(1.05E-07)
F4	5	1.00E+00(5.01E-03)†	1.09E-01(2.31E-04)†	3.37E-01(6.18E-04)†	2.75E-02(1.18E-04)†	1.19E-01(9.68E-04)†	2.59E-02(7.45E-03)
	25	5.98E-03(8.01E-07)†	8.97E-03(7.08E-07)†	1.38E-01(3.73E-05)†	5.50E-03(1.10E-05)†	4.15E-03(4.44E-07)†	3.27E-03(1.15E-07)
	50	3.04E-03(5.13E-09)	4.33E-03(2.95E-08)†	1.37E-01(1.93E-05)†	1.72E-02(1.95E-04)†	2.93E-03(2.20E-08†	2.86E-03(2.83E-07)
	200	2.98E-03(3.78E-09)†	2.82E-03(4.52E-11)	1.35E-01(4.21E-05)†	3.04E-02(3.50E-04)†	2.77E-03(2.96E-09)	2.59E-03(2.51E-07)
WFG1	5	3.72E-01(6.78E-04)†	8.04E-01(7.71E-04)†	5.98E-01(4.49E-04)†	6.71E-01(1.47E-04)†	4.08E-01(3.43E-04)†	2.94E-01(3.65E-04)
	25	9.00E-02(6.30E-05)†	3.73E-01(6.87E-04)†	3.35E-01(4.91E-05)†	6.53E-01(1.34E-05)†	9.81E-02(6.87E-05)†	7.14E-02(6.17E-04)
	50	4.47E-02(1.02E-05)†	2.29E-01(3.21E-04)†	2.91E-01(1.27E-05)†	6.50E-01(8.64E-06)†	3.83E-02(1.12E-05)	3.81E-02(3.09E-04)
	200	2.83E-02(4.00E-07)‡	8.32E-02(2.87E-05)†	2.75E-01(8.99E-06)†	6.48E-01(7.11E-06)†	2.24E-02(6.38E-08)†	3.01E-02(8.29E-05)
WFG2	5	1.61E-01(3.66E-04)†	5.09E-01(4.01E-03)†	3.51E-01(2.63E-04)†	1.70E-01(2.86E-04)†	1.51E-01(2.78E-04)†	1.09E-01(1.08E-04)
	25	7.78E-02(4.91E-06)‡	1.42E-01(5.14E-05)†	2.81E-01(1.27E-04)†	1.62E-01(7.60E-06)†	7.46E-02(3.33E-06)‡	8.18E-02(6.60E-06)
	50	8.12E-02(1.26E-06)‡	1.16E-01(1.65E-05)†	2.85E-01(1.11E-04)†	1.61E-01(2.32E-06)†	7.35E-02(1.19E-06)‡	8.30E-02(3.65E-06)
	200	8.20E-02(1.49E-06)‡	9.96E-02(7.61E-06)†	2.88E-01(1.31E-04)†	1.62E-01(5.38E-07)†	7.40E-02(5.20E-07)‡	8.36E-02(2.80E-06)
WFG3	5	4.34E-01(6.51E-03)†	6.33E-01(7.15E-03)†	6.76E-01(1.20E-03)†	1.48E+00(5.20E-03)†	5.51E-01(3.21E-03)†	2.19E-01(2.69E-03)
	25	3.38E-02(4.21E-05)‡	9.87E-02(3.94E-05)†	2.24E-01(3.96E-05)†	1.47E+00(1.13E-04)†	9.26E-02(2.09E-04)†	4.40E-02(3.44E-05)
	50	1.01E-02(2.34E-06)‡	5.02E-02(1.01E-05)†	2.07E-01(3.97E-05)†	1.47E+00(3.74E-05)†	3.63E-02(2.50E-05)†	1.66E-02(2.49E-06)
	200	1.48E-03(7.07E-08)†	1.41E-02(6.82E-07)†	2.02E-01(3.47E-05)†	1.48E+00(2.77E-06)†	2.81E-03(5.95E-07)†	1.28E-03(1.66E-07)
WFG4	5	9.30E-02(6.85E-05)†	3.50E-01(1.07E-03)†	2.23E-01(7.44E-05)†	4.07E-01(2.33E-03)†	6.68E-02(3.26E-05)†	5.88E-02(2.60E-05)
	25	2.02E-02(2.65E-06)†	1.11E-01(3.39E-05)†	1.31E-01(1.59E-05)†	2.71E-01(5.70E-04)†	1.41E-02(1.59E-07)‡	1.87E-02(5.32E-07)
	50	1.47E-02(1.53E-07)‡	8.05E-02(1.25E-05)†	1.24E-01(1.38E-05)†	2.49E-01(2.57E-04)†	1.31E-02(5.14E-08)‡	1.78E-02(2.74E-07)
	200	1.36E-02(5.31E-08)‡	4.81E-02(3.86E-06)†	1.21E-01(1.29E-05)†	2.47E-01(1.00E-04)†	1.30E-02(9.34E-09)‡	1.76E-02(3.11E-07)
WFG5	5	1.35E-01(2.26E-04)†	2.37E-01(3.23E-04)†	3.07E-01(1.34E-04)†	8.49E-02(1.25E-05)‡	1.09E-01(2.46E-04)	1.05E-01(4.65E-04)
	25	7.28E-02(7.87E-06)†	8.76E-02(2.03E-05)†	2.22E-01(1.94E-05)†	9.69E-02(4.95E-06)†	3.71E-02(4.30E-06)‡	4.18E-02(8.26E-06)
	50	6.80E-02(9.96E-06)†	7.65E-02(2.87E-06)†	2.17E-01(2.29E-05)†	9.38E-02(4.68E-06)†	3.48E-02(5.40E-09)‡	4.15E-02(1.11E-06)
	200	6.47E-02(1.61E-05)†	7.01E-02(7.76E-07)†	2.14E-01(2.53E-05)†	9.24E-02(1.38E-06)†	3.46E-02(9.86E-10)‡	4.19E-02(5.77E-08)
WFG6	5	1.74E-01(4.32E-04)†	5.12E-01(3.23E-03)†	4.09E-01(1.15E-03)†	8.80E-02(1.29E-04)	2.60E-01(4.33E-03)†	9.64E-02(7.20E-04)
	25	3.74E-02(3.14E-05)†	9.43E-02(3.77E-05)†	2.34E-01(4.15E-05)†	6.77E-02(1.21E-05)†	8.39E-02(7.71E-02)†	2.15E-02(1.29E-06)
	50	2.52E-02(4.49E-06)†	5.37E-02(1.14E-05)†	2.24E-01(2.70E-05)†	6.47E-02(1.05E-05)†	1.95E-02(1.54E-07)†	1.87E-02(2.58E-07)
	200	2.04E-02(1.33E-06)†	2.60E-02(3.40E-07)†	2.19E-01(1.99E-05)†	6.42E-02(6.04E-06)†	1.84E-02(1.04E-08)†	1.81E-02(3.24E-07)
WFG7	5	1.51E-01(9.47E-05)†	7.61E-01(9.08E-03)†	4.00E-01(2.65E-04)†	2.08E-01(5.49E-04)†	1.51E-01(2.12E-04)†	5.81E-02(7.18E-05)
	25	2.38E-02(1.27E-06)†	2.67E-01(2.21E-03)†	2.52E-01(2.84E-05)†	9.53E-02(3.57E-05)†	2.10E-02(3.07E-07)†	1.73E-02(3.19E-07)
	50	1.97E-02(9.54E-08)†	8.42E-02(9.10E-05)†	2.47E-01(1.70E-05)†	9.22E-02(1.99E-05)†	1.89E-02(9.89E-08)†	1.61E-02(2.80E-07)
	200	1.91E-02(1.13E-07)†	2.70E-02(7.44E-07)†	2.45E-01(2.70E-05)†	9.62E-02(2.25E-05)†	1.83E-02(3.75E-09)†	1.61E-02(1.91E-07)
WFG8	5	1.52E-01(1.81E-04)†	7.88E-01(2.04E-03)†	4.03E-01(2.41E-04)†	2.15E-01(3.91E-04)†	1.49E-01(2.23E-04)†	5.51E-02(6.54E-05)
	25	2.38E-02(1.27E-06)†	2.67E-01(2.21E-03)†	2.52E-01(2.84E-05)†	9.56E-02(1.43E-05)†	2.10E-02(3.18E-07)†	1.76E-02(3.22E-07)
	50	1.98E-02(1.37E-07)†	8.51E-02(9.43E-05)†	2.48E-01(2.99E-05)†	9.40E-02(1.49E-05)†	1.90E-02(1.43E-07)†	1.61E-02(2.07E-07)
	200	1.91E-02(8.10E-08)†	2.70E-02(6.48E-07)†	2.47E-01(2.44E-05)†	9.73E-02(1.89E-05)†	1.83E-02(3.86E-09)†	1.59E-02(2.82E-07)
WFG9	5	1.14E-01(3.52E-04)†	7.53E-01(2.85E-03)†	4.40E-01(1.11E-02)†	1.40E-01(2.05E-04)†	4.79E-01(4.45E-02)†	4.52E-01(5.18E-02)
	25	2.38E-02(1.27E-06)†	2.67E-01(2.21E-03)†	2.52E-01(2.84E-05)†	1.21E-01(4.27E-05)†	2.10E-01(3.85E-02)†	2.30E-01(3.79E-02)
	50	2.20E-02(1.50E-06)†	9.78E-02(2.47E-02)†	1.87E-01(2.88E-05)†	1.21E-01(2.22E-05)†	2.83E-01(3.11E-02)†	2.51E-01(3.72E-02)
	200	1.79E-02(5.29E-07)†	5.18E-02(9.29E-03)†	1.82E-01(2.40E-05)†	1.25E-01(3.99E-05)†	2.67E-01(3.38E-02)†	3.02E-01(3.20E-02)

TABLE 64
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 3 TO 4 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	8.89E+01(7.33E+01)†	8.89E+00(8.84E+00)‡	1.56E+02(1.31E+02)†	1.52E+02(5.76E+03)†	3.46E+01(5.39E+01)	4.21E+01(5.76E+02)
	25	1.15E+01(2.30E+01)†	2.75E-02(1.64E-05)‡	7.29E+01(7.41E+01)†	5.89E+01(8.74E+02)†	2.27E+00(1.75E+00)†	6.43E-01(8.78E-01)
	50	1.76E+00(8.54E-01)†	1.14E-02(6.95E-07)‡	5.44E+01(3.04E+00)†	7.50E+01(2.19E+03)†	1.70E-01(1.02E-01)†	2.43E-02(3.60E-03)
	200	9.60E-03(2.31E-05)†	7.88E-03(2.00E-09)†	5.34E+01(5.90E+00)†	1.04E+02(4.18E+03)†	1.90E-02(2.24E-03)†	7.09E-03(2.41E-08)
F2	5	6.94E-02(2.47E-03)†	1.18E-01(3.13E-04)†	1.59E-01(6.47E-05)†	4.74E-01(1.47E-01)†	4.25E-02(6.43E-05)†	2.55E-02(4.73E-06)
	25	2.61E-02(3.87E-07)†	3.94E-02(5.20E-06)†	1.38E-01(2.94E-05)†	1.37E-01(3.69E-03)†	2.29E-02(7.00E-07)	2.25E-02(3.62E-07)
	50	2.61E-02(2.13E-07)†	3.03E-02(8.43E-07)†	1.39E-01(3.01E-05)†	8.16E-02(4.78E-04)†	2.18E-02(3.31E-07)‡	2.25E-02(3.91E-07)
	200	2.60E-02(2.91E-07)†	2.40E-02(5.97E-08)†	1.37E-01(2.72E-05)†	5.57E-02(6.02E-04)†	2.23E-02(3.62E-07)	2.22E-02(3.14E-07)
F3	5	1.95E+02(3.74E+02)†	2.26E+01(3.21E+01)‡	3.61E+02(4.24E+02)†	3.33E+02(1.22E+04)†	9.02E+01(2.90E+02)	1.11E+02(3.87E+03)
	25	3.65E+01(1.48E+02)†	1.07E-01(2.47E-04)‡	1.91E+02(1.76E+02)†	1.65E+02(1.05E+04)†	6.51E+00(1.05E+01)‡	2.33E+00(7.78E+00)
	50	4.26E+00(5.61E+00)†	4.06E-02(1.33E-05)‡	1.53E+02(3.08E+01)†	1.91E+02(1.86E+04)†	9.81E-01(1.43E+00)‡	4.17E-02(5.84E-03)
	200	1.11E-01(2.12E-01)†	2.42E-02(4.39E-08)†	1.51E+02(2.56E+01)†	2.24E+02(1.38E+04)†	4.20E-02(1.18E-02)	2.21E-02(5.63E-07)
F4	5	6.29E-01(4.33E-03)†	8.49E-02(9.59E-04)†	2.12E-01(2.34E-04)†	1.70E-02(1.35E-04)	6.67E-02(2.86E-04)†	2.13E-02(1.57E-03)
	25	1.18E-02(2.33E-06)†	3.25E-02(1.60E-04)†	1.28E-01(3.77E-05)†	5.04E-03(1.28E-06)‡	1.68E-02(2.90E-07)†	1.11E-02(2.34E-06)
	50	1.89E-02(6.54E-07)†	2.91E-02(4.28E-05)†	1.32E-01(3.10E-05)†	5.15E-03(5.94E-07)‡	1.61E-02(1.20E-07)†	1.09E-02(1.24E-07)
	200	1.94E-02(1.89E-07)†	1.82E-02(1.99E-07)†	1.32E-01(3.78E-05)†	5.00E-03(1.20E-07)‡	1.62E-02(4.61E-08)†	1.06E-02(1.73E-06)
WFG1	5	3.52E-01(1.07E-03)†	9.02E-01(1.95E-03)†	6.18E-01(6.34E-04)†	8.39E-01(2.97E-02)†	3.98E-01(4.84E-04)†	2.95E-01(3.35E-04)
	25	1.44E-01(7.38E-05)†	4.81E-01(6.78E-04)†	4.08E-01(5.19E-05)†	5.43E-01(1.28E-02)†	1.36E-01(8.16E-05)	1.34E-01(2.11E-03)
	50	1.48E-01(6.92E-05)†	3.36E-01(4.64E-04)†	4.03E-01(1.11E-04)†	5.11E-01(9.70E-04)†	1.21E-01(1.03E-05)	1.19E-01(3.03E-03)
	200	1.65E-01(5.01E-05)†	1.84E-01(4.03E-05)†	4.20E-01(3.90E-05)†	4.84E-01(5.03E-05)†	1.13E-01(2.52E-06)	1.13E-01(1.19E-03)
WFG2	5	3.05E-01(4.18E-04)‡	4.97E-01(1.34E-03)†	5.29E-01(3.26E-04)†	2.45E-01(2.16E-05)‡	3.43E-01(7.89E-04)†	3.27E-01(4.69E-04)
	25	3.11E-01(1.38E-04)‡	3.06E-01(6.19E-05)‡	5.28E-01(3.66E-04)†	2.38E-01(1.33E-07)‡	2.98E-01(4.21E-05)‡	3.29E-01(4.00E-04)
	50	3.12E-01(1.55E-04)‡	2.94E-01(1.95E-05)‡	5.34E-01(5.61E-04)†	2.38E-01(6.11E-08)‡	3.03E-01(5.78E-05)‡	3.27E-01(2.13E-04)
	200	3.18E-01(1.73E-04)‡	2.89E-01(3.87E-06)‡	5.27E-01(2.45E-04)†	2.38E-01(7.61E-08)‡	2.98E-01(8.66E-06)‡	3.26E-01(1.16E-04)
WFG3	5	3.42E-01(6.18E-03)‡	1.24E+00(8.82E-03)†	7.64E-01(4.50E-03)†	9.68E-01(7.91E-04)†	7.69E-01(4.25E-03)†	4.64E-01(3.28E-02)
	25	1.42E-02(6.30E-06)‡	1.09E+00(2.25E-02)†	5.55E-01(9.02E-03)	9.21E-01(5.23E-05)†	6.43E-01(1.90E-03)	6.13E-01(1.04E-01)
	50	5.08E-03(1.64E-06)‡	1.09E+00(2.45E-02)†	6.26E-01(2.55E-02)	9.15E-01(1.80E-05)	6.44E-01(2.69E-03)	6.97E-01(1.01E-01)
	200	1.11E-01(3.41E-02)‡	1.11E+00(2.79E-02)†	6.62E-01(3.18E-02)	9.15E-01(8.56E-06)	6.37E-01(5.33E-03)	8.06E-01(1.17E-01)
WFG4	5	1.34E-01(5.38E-05)†	4.37E-01(1.33E-03)†	2.71E-01(8.62E-05)†	3.93E-01(4.93E-03)†	1.35E-01(5.74E-05)†	1.26E-01(1.73E-05)
	25	1.19E-01(4.71E-06)†	2.72E-01(1.94E-04)†	2.26E-01(3.05E-05)†	3.56E-01(9.30E-04)†	9.30E-02(4.92E-06)‡	1.07E-01(1.02E-05)
	50	1.17E-01(8.10E-06)†	2.37E-01(7.26E-05)†	2.22E-01(3.24E-05)†	3.21E-01(7.42E-04)†	8.94E-02(3.02E-06)‡	1.07E-01(7.38E-06)
	200	1.17E-01(8.64E-06)†	1.80E-01(2.13E-05)†	2.19E-01(2.23E-05)†	2.95E-01(1.40E-04)†	9.12E-02(2.32E-06)‡	1.10E-01(8.86E-06)
WFG5	5	1.68E-01(7.92E-05)†	3.42E-01(6.59E-04)†	3.54E-01(7.87E-05)†	6.34E-02(8.78E-05)‡	1.61E-01(2.23E-04)†	1.48E-01(1.39E-04)
	25	1.45E-01(6.05E-06)†	2.03E-01(1.13E-04)†	3.04E-01(4.55E-05)†	4.63E-02(1.93E-05)‡	1.02E-01(4.71E-06)‡	1.25E-01(1.07E-05)
	50	1.44E-01(1.05E-05)†	1.82E-01(4.19E-05)†	2.99E-01(3.64E-05)†	4.14E-02(1.96E-05)‡	1.00E-01(3.11E-06)‡	1.26E-01(6.92E-06)
	200	1.43E-01(2.23E-05)†	1.51E-01(1.54E-05)†	2.99E-01(3.93E-05)†	3.49E-02(1.24E-05)‡	1.01E-01(1.44E-06)‡	1.30E-01(1.00E-05)
WFG6	5	1.96E-01(2.98E-04)†	5.91E-01(1.18E-03)†	4.46E-01(8.83E-04)†	9.84E-02(4.05E-05)‡	3.32E-01(1.60E-03)†	1.50E-01(2.33E-04)
	25	1.32E-01(2.14E-05)†	2.73E-01(1.27E-04)†	3.39E-01(4.34E-05)†	1.13E-01(3.05E-05)	1.12E-01(7.29E-06)	1.11E-01(8.24E-06)
	50	1.31E-01(7.06E-06)†	2.24E-01(4.19E-05)†	3.34E-01(6.98E-05)†	1.04E-01(7.59E-06)‡	1.05E-01(3.22E-06)‡	1.13E-01(7.64E-06)
	200	1.29E-01(5.43E-06)†	1.64E-01(1.39E-05)†	3.33E-01(5.66E-05)†	9.60E-02(3.23E-06)‡	1.07E-01(1.88E-06)‡	1.13E-01(1.01E-05)
WFG7	5	1.76E-01(5.70E-05)†	8.72E-01(1.04E-02)†	4.22E-01(2.01E-04)†	2.11E-01(1.07E-03)†	2.12E-01(2.29E-04)†	1.19E-01(2.45E-05)
	25	1.26E-01(4.65E-06)†	4.81E-01(2.05E-03)†	3.47E-01(4.33E-05)†	1.09E-01(2.64E-05)†	1.06E-01(5.61E-06)†	1.02E-01(4.98E-06)
	50	1.25E-01(8.91E-06)†	3.49E-01(4.92E-04)†	3.47E-01(4.15E-05)†	9.08E-02(8.90E-06)‡	1.06E-01(2.96E-06)†	1.04E-01(8.81E-06)
	200	1.25E-01(6.22E-06)†	2.09E-01(7.53E-05)†	3.48E-01(1.96E-05)†	8.72E-02(6.65E-06)‡	1.08E-01(1.15E-06)†	1.03E-01(8.56E-06)
WFG8	5	1.77E-01(6.61E-05)†	8.67E-01(2.31E-03)†	4.23E-01(1.29E-04)†	2.18E-01(1.17E-03)†	2.04E-01(2.07E-04)†	1.21E-01(4.99E-05)
	25	1.26E-01(4.65E-06)†	4.81E-01(2.05E-03)†	3.47E-01(4.33E-05)†	1.07E-01(3.40E-05)†	1.06E-01(5.66E-06)†	1.03E-01(6.25E-06)
	50	1.25E-01(7.61E-06)†	3.51E-01(3.54E-04)†	3.46E-01(6.72E-05)†	9.11E-02(1.33E-05)‡	1.05E-01(3.61E-06)†	1.03E-01(1.04E-05)
	200	1.25E-01(6.49E-06)†	2.04E-01(4.35E-05)†	3.49E-01(3.74E-05)†	8.72E-02(3.92E-06)‡	1.07E-01(1.37E-06)†	1.03E-01(1.10E-05)
WFG9	5	1.56E-01(7.64E-05)‡	8.53E-01(1.74E-03)†	4.03E-01(4.60E-03)‡	1.38E-01(1.50E-04)‡	5.56E-01(7.06E-02)	5.20E-01(5.60E-02)
	25	1.26E-01(4.65E-06)	4.81E-01(2.05E-03)†	3.47E-01(4.33E-05)	1.28E-01(2.03E-05)	2.87E-01(4.00E-02)‡	3.25E-01(3.89E-02)
	50	1.19E-01(7.30E-06)‡	2.30E-01(2.55E-02)	2.81E-01(2.29E-05)	1.25E-01(1.93E-05)	3.61E-01(3.07E-02)	3.43E-01(3.77E-02)
	200	1.17E-01(7.02E-06)‡	1.69E-01(1.62E-02)‡	2.80E-01(3.11E-05)‡	1.25E-01(2.16E-05)‡	3.48E-01(3.39E-02)‡	4.10E-01(3.61E-02)

TABLE 65
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 4 TO 5 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	7.87E+01(9.70E+01)†	2.74E+00(1.53E+00)‡	1.42E+02(1.12E+02)†	2.88E+02(1.66E+04)†	2.12E+01(2.89E+01)‡	2.98E+01(3.79E+02)
	25	7.12E+00(1.28E+01)†	2.63E-02(3.65E-06)‡	5.79E+01(1.02E+02)†	5.22E+02(5.71E+04)†	7.65E-01(3.48E-01)†	5.75E-01(1.37E+00)
	50	7.72E-01(2.89E-01)†	1.71E-02(1.36E-06)‡	4.56E+01(3.81E+00)†	7.19E+02(4.72E+04)†	5.65E-02(5.55E-03)†	3.96E-02(4.42E-03)
	200	1.57E-01(3.33E-02)†	5.11E-03(1.38E-07)‡	4.51E+01(3.40E+00)†	8.97E+02(3.01E+04)†	3.51E-02(5.59E-03)†	3.30E-02(9.81E-03)
F2	5	8.01E-02(7.60E-04)†	1.41E-01(2.16E-04)†	1.62E-01(4.44E-05)†	3.59E-01(1.17E-01)†	7.56E-02(2.17E-05)†	5.16E-02(3.51E-06)
	25	6.03E-02(1.01E-06)†	7.66E-02(1.13E-05)†	1.50E-01(2.54E-05)†	3.43E-01(3.49E-02)†	4.77E-02(1.80E-06)‡	4.97E-02(2.19E-06)
	50	6.18E-02(1.42E-06)†	6.21E-02(3.08E-06)†	1.54E-01(2.86E-05)†	8.02E-02(4.62E-03)	4.51E-02(1.37E-06)‡	5.08E-02(1.98E-06)
	200	6.54E-02(2.09E-05)†	4.64E-02(3.37E-07)‡	1.52E-01(1.84E-05)†	7.08E-06(5.02E-16)†	4.16E-02(1.63E-06)‡	5.18E-02(2.69E-06)
F3	5	1.89E+02(4.21E+02)†	6.87E+00(7.29E+00)‡	3.32E+02(4.70E+02)†	1.13E+02(2.99E+03)†	6.52E+01(2.40E+02)	6.92E+01(2.43E+03)
	25	2.86E+01(1.75E+02)†	1.08E-01(6.30E-05)‡	1.67E+02(4.39E+02)†	7.43E+01(1.15E+03)†	2.18E+00(2.21E+00)†	1.93E+00(1.57E+01)
	50	2.16E+00(1.10E+01)†	7.36E-02(1.71E-05)‡	1.32E+02(1.84E+01)†	6.92E+01(8.54E+02)†	1.94E-01(6.22E-02)†	7.64E-02(1.66E-02)
	200	2.63E-01(1.54E-01)†	4.85E-02(1.08E-06)	1.32E+02(1.99E+01)†	1.45E+00(1.57E+01)†	8.94E-02(1.36E-02)†	6.94E-02(5.02E-03)
F4	5	4.17E-01(4.21E-03)†	5.76E-02(4.17E-04)†	1.65E-01(1.06E-04)†	1.03E-02(5.04E-05)‡	7.40E-02(3.99E-04)†	2.81E-02(1.62E-04)
	25	3.91E-02(1.75E-05)†	4.05E-02(2.61E-04)†	1.43E-01(6.84E-05)†	5.22E-03(8.05E-07)‡	3.65E-02(1.37E-06)†	2.04E-02(1.59E-05)
	50	5.13E-02(4.04E-06)†	4.43E-02(4.15E-05)†	1.44E-01(2.33E-05)†	4.32E-03(1.11E-06)‡	3.07E-02(1.83E-06)†	1.81E-02(9.75E-06)
	200	6.10E-02(6.13E-05)†	1.79E-02(2.67E-06)†	1.43E-01(3.48E-05)†	2.39E-03(9.23E-08)‡	1.44E-02(1.63E-06)	1.50E-02(3.31E-06)
WFG1	5	3.98E-01(1.58E-03)†	8.85E-01(6.01E-03)†	6.79E-01(7.77E-04)†	1.18E+00(2.77E-02)†	4.09E-01(1.03E-03)†	3.39E-01(4.41E-04)
	25	2.90E-01(4.13E-04)†	4.71E-01(5.57E-04)†	5.56E-01(2.44E-04)†	1.02E+00(7.47E-03)†	2.52E-01(2.00E-04)	2.54E-01(7.56E-03)
	50	3.21E-01(2.29E-04)†	3.75E-01(2.32E-04)†	5.78E-01(1.81E-04)†	1.08E+00(1.11E-03)†	2.69E-01(8.15E-05)†	2.43E-01(1.27E-02)
	200	3.49E-01(1.88E-04)†	2.94E-01(2.82E-05)†	5.98E-01(1.16E-04)†	1.23E+00(2.24E-03)†	2.58E-01(3.29E-05)†	2.39E-01(5.23E-03)
WFG2	5	6.90E-01(5.02E-04)	6.74E-01(1.97E-03)‡	8.46E-01(7.61E-04)†	3.13E-01(5.69E-06)‡	6.69E-01(1.43E-03)‡	7.07E-01(2.01E-03)
	25	6.83E-01(8.41E-04)‡	5.31E-01(9.95E-05)‡	8.55E-01(1.16E-03)†	3.06E-01(1.58E-08)‡	6.03E-01(2.53E-04)‡	7.12E-01(1.33E-03)
	50	7.14E-01(6.78E-04)†	5.22E-01(3.58E-05)‡	8.75E-01(1.47E-03)†	3.06E-01(3.37E-09)‡	5.94E-01(2.59E-04)‡	6.89E-01(8.19E-04)
	200	7.67E-01(2.63E-03)†	5.15E-01(2.06E-05)‡	8.98E-01(9.18E-04)†	3.06E-01(6.77E-10)‡	5.83E-01(3.82E-05)‡	7.09E-01(5.43E-04)
WFG3	5	4.32E-01(5.68E-03)‡	2.23E+00(1.99E-02)†	1.27E+00(2.34E-02)†	9.11E-01(8.00E-04)†	1.31E+00(7.36E-03)†	7.49E-01(9.49E-02)
	25	2.82E-02(4.43E-03)‡	2.20E+00(4.44E-02)†	1.34E+00(2.92E-02)	8.65E-01(1.23E-05)‡	1.45E+00(1.51E-02)	1.20E+00(2.62E-01)
	50	5.19E-02(1.16E-02)‡	2.11E+00(4.70E-02)†	1.47E+00(3.05E-02)	8.60E-01(4.69E-06)‡	1.56E+00(1.60E-02)†	1.31E+00(1.91E-01)
	200	1.47E+00(4.68E-02)	2.06E+00(3.44E-02)†	1.54E+00(2.45E-02)	8.53E-01(4.29E-06)‡	1.61E+00(3.18E-02)	1.50E+00(1.26E-01)
WFG4	5	3.16E-01(9.49E-05)†	5.94E-01(9.84E-04)†	4.69E-01(1.59E-04)†	3.00E-01(6.10E-03)	3.29E-01(2.09E-04)†	2.95E-01(1.01E-04)
	25	3.50E-01(4.30E-05)†	4.24E-01(1.45E-04)†	4.42E-01(8.74E-05)†	3.06E-01(4.87E-04)†	2.36E-01(3.46E-05)‡	2.84E-01(8.09E-05)
	50	3.51E-01(6.27E-05)†	3.84E-01(1.18E-04)†	4.36E-01(3.72E-05)†	2.94E-01(5.59E-04)	2.29E-01(2.53E-05)‡	2.91E-01(1.56E-04)
	200	3.54E-01(3.82E-05)†	3.17E-01(3.29E-05)	4.33E-01(2.76E-05)†	3.34E-01(2.69E-04)†	2.62E-01(1.89E-05)‡	3.16E-01(6.90E-05)
WFG5	5	3.41E-01(1.19E-04)†	5.02E-01(9.38E-04)†	5.60E-01(1.88E-04)†	7.06E-02(1.18E-04)‡	3.07E-01(2.64E-04)‡	3.29E-01(2.95E-04)
	25	3.59E-01(4.22E-05)†	3.70E-01(1.11E-04)†	5.16E-01(6.72E-05)†	5.41E-02(9.04E-05)‡	2.49E-01(3.09E-05)‡	3.13E-01(1.05E-04)
	50	3.60E-01(6.21E-05)†	3.36E-01(5.33E-05)	5.09E-01(1.29E-04)†	6.15E-02(6.12E-05)‡	2.43E-01(2.43E-05)‡	3.34E-01(1.28E-04)
	200	3.63E-01(1.08E-04)†	2.92E-01(1.56E-05)‡	5.08E-01(9.39E-05)†	5.06E-02(2.62E-05)‡	2.50E-01(4.02E-05)‡	3.44E-01(7.59E-05)
WFG6	5	3.78E-01(2.71E-04)†	7.39E-01(1.73E-03)†	6.29E-01(7.84E-04)†	5.49E-02(3.31E-04)‡	4.75E-01(1.15E-03)†	3.25E-01(2.03E-04)
	25	3.70E-01(5.32E-05)†	4.49E-01(1.66E-04)†	5.65E-01(9.79E-05)†	9.84E-02(2.44E-05)‡	2.72E-01(4.11E-05)‡	2.94E-01(9.15E-05)
	50	3.78E-01(6.58E-05)†	3.95E-01(8.63E-05)†	5.69E-01(4.79E-05)†	1.05E-01(1.35E-05)‡	2.68E-01(4.27E-05)‡	3.05E-01(1.42E-04)
	200	3.82E-01(4.12E-05)†	3.31E-01(2.47E-05)†	5.70E-01(6.77E-05)†	1.17E-01(1.46E-05)‡	2.69E-01(2.91E-05)‡	3.26E-01(8.00E-05)
WFG7	5	3.90E-01(8.71E-05)†	8.39E-01(2.15E-02)†	6.07E-01(1.84E-04)†	2.91E-01(9.46E-04)	3.60E-01(3.19E-04)†	2.83E-01(1.19E-04)
	25	3.86E-01(5.42E-05)†	6.46E-01(1.46E-03)†	5.77E-01(1.41E-04)†	1.14E-01(1.06E-04)‡	2.65E-01(2.48E-05)‡	2.71E-01(1.36E-04)
	50	3.92E-01(8.85E-05)†	5.32E-01(4.82E-04)†	5.84E-01(8.33E-05)†	8.23E-02(2.64E-05)‡	2.63E-01(2.09E-05)‡	2.73E-01(1.45E-04)
	200	3.97E-01(5.65E-05)†	3.91E-01(1.64E-04)†	5.84E-01(4.79E-05)†	6.55E-02(1.02E-05)‡	2.79E-01(1.76E-05)	2.90E-01(3.68E-04)
WFG8	5	3.91E-01(1.16E-04)†	8.52E-01(1.11E-02)†	6.09E-01(2.03E-04)†	2.91E-01(2.30E-03)	3.52E-01(2.42E-04)†	2.87E-01(8.46E-05)
	25	3.86E-01(5.42E-05)†	6.46E-01(1.46E-03)†	5.77E-01(1.41E-04)†	1.17E-01(1.24E-04)‡	2.65E-01(3.01E-05)‡	2.74E-01(1.32E-04)
	50	3.90E-01(6.40E-05)†	5.39E-01(4.43E-04)†	5.83E-01(8.22E-05)†	8.36E-02(1.88E-05)‡	2.63E-01(2.56E-05)‡	2.77E-01(2.43E-04)
	200	3.94E-01(8.03E-05)†	3.89E-01(1.47E-04)†	5.85E-01(8.38E-05)†	6.49E-02(7.73E-06)‡	2.78E-01(6.59E-06)‡	2.91E-01(2.69E-04)
WFG9	5	3.73E-01(1.02E-04)‡	9.25E-01(4.91E-03)†	5.59E-01(1.10E-03)‡	1.54E-01(3.13E-04)‡	7.10E-01(7.35E-02)†	6.80E-01(4.76E-02)
	25	3.86E-01(5.42E-05)	6.46E-01(1.46E-03)	5.77E-01(1.41E-04)	1.17E-01(2.93E-05)‡	4.56E-01(4.88E-02)‡	5.18E-01(4.26E-02)
	50	3.57E-01(5.95E-05)	4.02E-01(2.45E-02)	5.08E-01(6.77E-05)	1.06E-01(4.07E-05)‡	5.49E-01(4.17E-02)	5.49E-01(4.22E-02)
	200	3.61E-01(6.76E-05)‡	3.34E-01(1.98E-02)‡	5.06E-01(6.77E-05)‡	9.79E-02(8.97E-05)‡	5.30E-01(4.20E-02)‡	6.13E-01(3.61E-02)

TABLE 66
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 5 TO 6 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	7.58E+01(1.45E+02)†	8.04E-01(2.24E-01)‡	1.17E+02(1.03E+02)†	3.63E+02(1.59E+04)†	1.29E+01(1.25E+01)	1.93E+01(2.88E+02)
	25	6.16E+00(2.09E+01)†	3.10E-02(7.79E-07)‡	5.11E+01(3.27E+02)†	6.85E+02(3.26E+04)†	2.71E-01(3.22E-01)	1.23E-01(2.09E-02)
	50	1.28E+00(1.24E+00)†	2.88E-02(7.34E-07)‡	3.77E+01(3.66E+00)†	8.68E+02(9.09E+03)†	7.31E-02(9.10E-03)†	3.29E-02(1.38E-03)
	200	4.94E+01(9.15E+02)†	2.47E-02(8.77E-08)‡	8.37E+01(4.05E+02)†	1.00E+03(1.85E+04)†	7.44E-02(1.86E-02)†	4.16E-02(4.17E-03)
F2	5	1.12E-01(3.71E-04)†	1.63E-01(1.15E-04)†	1.84E-01(5.53E-05)†	3.28E-01(4.39E-02)†	1.08E-01(2.79E-05)†	8.05E-02(8.20E-06)
	25	1.03E-01(7.18E-06)†	1.14E-01(1.93E-05)†	2.01E-01(2.78E-04)†	2.18E-01(1.08E-02)†	7.52E-02(3.14E-06)	7.46E-02(7.34E-06)
	50	1.28E-01(5.10E-04)†	9.78E-02(1.34E-05)†	2.30E-01(5.65E-04)†	7.46E-02(1.51E-03)	6.99E-02(2.01E-06)‡	7.43E-02(9.23E-06)
	200	2.71E-01(1.75E-03)†	7.48E-02(1.39E-06)†	3.17E-01(2.21E-03)†	6.76E-03(1.30E-05)‡	6.12E-02(1.17E-06)‡	7.33E-02(5.56E-06)
F3	5	1.74E+02(4.99E+02)†	2.06E+00(1.13E+00)‡	2.71E+02(7.18E+02)†	7.20E+01(6.45E+02)†	3.95E+01(2.03E+02)	4.89E+01(2.73E+03)
	25	1.86E+01(7.13E+01)†	1.23E-01(2.63E-05)	1.26E+02(1.46E+02)†	6.93E+01(2.24E+02)†	1.04E+00(7.36E+00)	1.91E+00(2.50E+01)
	50	1.10E+00(1.49E+00)†	1.04E-01(2.79E-05)‡	1.08E+02(1.64E+01)†	4.83E+01(1.42E+02)†	3.44E-01(4.01E-01)†	1.06E-01(8.15E-03)
	200	5.01E+01(1.76E+03)†	7.48E-02(3.68E-06)	1.85E+02(3.14E+03)†	6.69E+00(6.80E+01)†	2.03E-01(1.08E-01)	8.39E-02(1.36E-03)
F4	5	3.43E-01(3.09E-03)†	5.07E-02(1.81E-04)†	1.72E-01(1.60E-04)†	7.21E-03(7.13E-05)‡	8.25E-02(1.48E-04)†	4.14E-02(7.49E-05)
	25	8.74E-02(1.36E-04)†	6.44E-02(1.15E-04)†	2.64E-01(1.16E-03)†	5.15E-03(3.87E-06)‡	5.93E-02(4.23E-06)†	3.78E-02(3.54E-05)
	50	1.51E-01(1.14E-03)†	7.37E-02(3.40E-05)†	3.59E-01(3.31E-03)†	3.84E-03(3.72E-07)‡	5.91E-02(1.44E-06)†	3.84E-02(2.77E-05)
	200	5.00E-01(5.80E-03)†	7.18E-02(1.67E-06)†	5.22E-01(1.42E-03)†	2.98E-03(1.11E-06)‡	6.17E-02(2.62E-07)†	3.97E-02(1.09E-04)
WFG1	5	4.79E-01(1.94E-03)†	7.61E-01(1.35E-02)†	7.52E-01(8.00E-04)†	1.21E+00(2.08E-02)†	3.99E-01(9.13E-04)‡	4.13E-01(7.19E-04)
	25	4.39E-01(5.92E-04)†	4.80E-01(4.24E-04)†	7.07E-01(4.58E-04)†	1.13E+00(1.20E-02)†	4.11E-01(3.05E-04)†	3.91E-01(1.81E-02)
	50	4.67E-01(4.13E-04)†	4.35E-01(1.20E-04)†	7.25E-01(3.81E-04)†	1.24E+00(5.69E-03)†	4.14E-01(1.12E-04)†	3.62E-01(2.81E-02)
	200	5.01E-01(3.49E-04)†	3.99E-01(3.13E-05)†	7.58E-01(4.15E-04)†	1.33E+00(7.15E-04)†	3.85E-01(1.15E-04)†	3.65E-01(1.22E-02)
WFG2	5	8.55E-01(2.44E-03)‡	6.82E-01(2.28E-03)‡	1.09E+00(1.02E-03)†	2.84E-01(1.71E-06)‡	7.38E-01(1.51E-03)‡	9.44E-01(1.10E-02)
	25	9.08E-01(4.22E-03)	5.49E-01(1.59E-04)‡	1.16E+00(2.80E-03)†	2.80E-01(2.07E-08)‡	7.29E-01(7.52E-04)‡	9.29E-01(3.13E-03)
	50	1.11E+00(1.02E-02)†	5.46E-01(1.04E-04)‡	1.32E+00(6.46E-03)†	2.80E-01(4.57E-09)‡	7.17E-01(5.10E-04)‡	8.79E-01(1.76E-03)
	200	1.23E+00(4.28E-03)†	5.54E-01(4.75E-05)‡	1.38E+00(7.25E-03)†	2.80E-01(4.30E-12)‡	7.08E-01(8.63E-05)‡	9.54E-01(1.19E-03)
WFG3	5	7.25E-01(3.97E-02)‡	2.90E+00(2.18E-02)†	1.80E+00(3.02E-02)†	8.08E-01(3.79E-04)‡	1.78E+00(8.75E-03)†	1.40E+00(1.83E-01)
	25	2.85E-01(1.67E-01)‡	2.89E+00(1.48E-01)†	2.09E+00(9.63E-02)	7.68E-01(3.06E-06)‡	1.93E+00(3.73E-02)	1.93E+00(4.73E-01)
	50	1.10E+00(5.95E-01)‡	2.74E+00(1.35E-01)†	2.20E+00(1.63E-01)	7.64E-01(1.77E-06)‡	2.11E+00(1.07E-01)‡	2.41E+00(2.62E-01)
	200	2.44E+00(3.37E-01)	2.98E+00(2.80E-01)†	2.32E+00(1.77E-01)	7.59E-01(3.68E-07)‡	2.21E+00(1.64E-01)	2.35E+00(5.75E-01)
WFG4	5	6.47E-01(6.74E-04)†	8.07E-01(1.78E-03)†	8.29E-01(4.93E-04)†	3.00E-01(2.60E-03)‡	6.37E-01(4.65E-04)†	5.55E-01(9.21E-04)
	25	7.11E-01(1.85E-04)†	6.19E-01(2.64E-04)†	8.07E-01(2.79E-04)†	2.66E-01(7.19E-04)‡	4.64E-01(8.92E-05)‡	4.90E-01(3.67E-04)
	50	7.17E-01(1.31E-04)†	5.85E-01(2.83E-04)†	8.09E-01(3.07E-04)†	2.69E-01(8.47E-04)‡	4.34E-01(5.12E-05)‡	4.78E-01(3.25E-04)
	200	7.33E-01(2.85E-04)†	5.55E-01(7.68E-05)†	7.94E-01(2.29E-04)†	3.56E-01(1.41E-04)‡	3.86E-01(5.65E-05)‡	4.58E-01(3.74E-04)
WFG5	5	6.74E-01(4.05E-04)†	8.23E-01(1.58E-03)†	9.52E-01(5.44E-04)†	7.11E-02(8.74E-05)‡	5.64E-01(6.33E-04)‡	5.87E-01(1.18E-03)
	25	7.18E-01(1.83E-04)†	6.68E-01(3.88E-04)†	9.02E-01(2.11E-04)†	3.18E-02(6.88E-05)‡	4.89E-01(9.24E-05)‡	5.59E-01(4.80E-04)
	50	7.31E-01(6.14E-04)†	6.19E-01(1.80E-04)†	8.83E-01(2.78E-04)†	3.09E-02(8.80E-05)‡	4.78E-01(6.28E-05)‡	5.74E-01(1.29E-03)
	200	7.39E-01(4.25E-04)†	5.65E-01(5.55E-05)	8.62E-01(2.24E-04)†	2.88E-02(9.54E-05)‡	4.51E-01(1.01E-04)‡	5.70E-01(9.75E-04)
WFG6	5	6.99E-01(3.15E-04)†	1.03E+00(3.28E-03)†	9.85E-01(7.13E-04)†	2.11E-02(3.91E-06)‡	7.43E-01(1.03E-03)†	5.87E-01(7.88E-04)
	25	7.43E-01(1.60E-04)†	6.85E-01(5.08E-04)†	9.17E-01(2.00E-04)†	2.35E-02(3.98E-06)‡	5.09E-01(2.60E-04)‡	5.35E-01(5.32E-04)
	50	7.52E-01(1.52E-04)†	6.37E-01(9.80E-05)†	9.26E-01(1.72E-04)†	3.05E-02(3.28E-06)‡	4.80E-01(6.53E-05)‡	5.41E-01(4.99E-04)
	200	7.59E-01(2.44E-04)†	5.95E-01(3.04E-05)†	9.22E-01(3.14E-04)†	3.87E-02(9.98E-07)‡	4.40E-01(1.04E-04)‡	5.02E-01(1.48E-03)
WFG7	5	7.44E-01(2.43E-04)†	8.47E-01(2.82E-02)†	9.53E-01(2.82E-04)†	2.92E-01(2.14E-03)‡	5.88E-01(3.65E-04)†	5.16E-01(6.16E-04)
	25	8.02E-01(3.57E-04)†	6.87E-01(2.21E-03)†	9.72E-01(2.96E-04)†	1.12E-01(1.46E-04)‡	4.79E-01(1.26E-04)‡	4.95E-01(3.89E-04)
	50	8.15E-01(3.28E-04)†	6.78E-01(6.83E-04)†	9.78E-01(1.77E-04)†	7.95E-02(5.03E-05)‡	4.43E-01(6.48E-05)‡	4.79E-01(4.06E-04)
	200	8.18E-01(3.74E-04)†	6.53E-01(2.12E-04)†	9.77E-01(2.31E-04)†	4.74E-02(9.11E-06)‡	4.01E-01(4.14E-05)‡	4.27E-01(3.92E-04)
WFG8	5	7.44E-01(2.03E-04)†	8.97E-01(1.79E-02)†	9.54E-01(4.39E-04)†	2.99E-01(2.59E-03)‡	5.82E-01(3.56E-04)†	5.16E-01(6.26E-04)
	25	8.02E-01(3.57E-04)†	6.87E-01(2.21E-03)†	9.72E-01(2.96E-04)†	1.11E-01(1.22E-04)‡	4.75E-01(8.57E-05)‡	4.96E-01(5.84E-04)
	50	8.19E-01(3.42E-04)†	6.69E-01(7.71E-04)†	9.80E-01(4.59E-04)†	8.10E-02(3.84E-05)‡	4.41E-01(1.11E-04)‡	4.83E-01(4.02E-04)
	200	8.18E-01(3.51E-04)†	6.51E-01(2.66E-04)†	9.76E-01(3.62E-04)†	4.78E-02(1.48E-05)‡	4.03E-01(6.36E-05)‡	4.30E-01(1.30E-04)
WFG9	5	7.34E-01(2.64E-04)‡	1.13E+00(3.98E-02)†	9.18E-01(9.35E-04)‡	1.44E-01(2.80E-04)‡	1.02E+00(1.07E-01)†	9.74E-01(6.20E-02)
	25	8.02E-01(3.57E-04)‡	6.87E-01(2.21E-03)‡	9.72E-01(2.96E-04)†	1.12E-01(3.88E-05)‡	7.36E-01(7.65E-02)‡	8.08E-01(6.48E-02)
	50	7.65E-01(3.03E-04)‡	6.92E-01(3.53E-02)‡	9.09E-01(2.14E-04)†	9.85E-02(2.72E-05)‡	8.50E-01(7.19E-02)†	8.30E-01(7.45E-02)
	200	7.75E-01(2.17E-04)‡	6.16E-01(2.43E-02)‡	9.14E-01(2.00E-04)†	8.56E-02(6.68E-05)‡	8.12E-01(9.13E-02)‡	9.06E-01(6.83E-02)

TABLE 67
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR TRANSFERRED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 6 TO 7 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	8.73E+01(1.69E+02)†	3.21E-01(2.51E-02)‡	1.06E+02(8.86E+01)†	3.28E+02(7.89E+03)†	4.59E+00(4.86E+00)‡	1.34E+01(1.83E+02)
	25	1.25E+01(3.15E+02)†	3.48E-02(5.51E-07)	6.05E+01(1.10E+03)†	7.08E+02(7.16E+03)†	7.69E-02(1.81E-02)	6.98E-02(5.62E-03)
	50	1.01E+01(1.86E+02)†	3.20E-02(3.16E-07)‡	3.56E+01(1.09E+02)†	8.04E+02(5.63E+03)†	4.42E-02(6.95E-04)‡	6.18E-02(2.08E-02)
	200	2.10E+02(1.40E+02)†	2.81E-02(1.01E-07)	1.89E+02(1.11E+02)†	8.99E+02(1.00E+04)†	5.74E-02(4.71E-03)‡	1.01E-01(8.76E-02)
F2	5	1.54E-01(3.30E-04)†	1.66E-01(7.81E-05)†	2.22E-01(1.20E-04)†	2.05E-01(1.22E-02)†	1.34E-01(4.38E-05)†	1.06E-01(1.70E-05)
	25	1.77E-01(5.39E-04)†	1.28E-01(1.92E-05)†	3.36E-01(1.98E-03)†	1.76E-01(7.71E-03)†	9.00E-02(6.77E-06)‡	9.62E-02(1.52E-05)
	50	3.26E-01(2.92E-03)†	1.13E-01(1.72E-05)†	4.58E-01(2.35E-03)†	1.33E-01(3.54E-03)†	8.36E-02(3.31E-06)‡	9.77E-02(1.15E-05)
	200	6.50E-01(1.62E-03)†	9.28E-02(1.20E-06)†	5.93E-01(1.33E-03)†	5.83E-02(9.37E-04)‡	8.47E-02(2.56E-06)‡	9.56E-02(7.88E-06)
F3	5	1.96E+02(7.27E+02)†	9.35E-01(4.33E-01)‡	2.40E+02(5.48E+02)†	4.65E+01(1.69E+02)†	1.54E+01(6.68E+01)	3.88E+01(1.63E+03)
	25	2.26E+01(2.31E+02)†	1.34E-01(3.69E-05)	1.28E+02(2.17E+03)†	4.20E+01(9.64E+01)†	3.25E-01(2.94E-01)	7.47E-01(4.46E+00)
	50	4.55E+00(2.93E+01)†	1.27E-01(1.30E-05)‡	8.88E+01(3.53E+01)†	4.33E+01(9.98E+01)†	2.14E-01(9.10E-02)	1.63E-01(2.62E-02)
	200	4.43E+02(2.02E+03)†	1.09E-01(3.22E-06)‡	4.58E+02(8.08E+02)†	1.56E+01(1.89E+01)†	2.27E-01(7.30E-02)	1.53E+00(6.09E+01)
F4	5	3.20E-01(2.73E-03)†	4.73E-02(6.75E-05)‡	1.95E-01(1.76E-04)†	9.22E-03(6.68E-05)‡	1.06E-01(1.48E-04)†	5.27E-02(5.01E-05)
	25	2.20E-01(2.81E-03)†	7.19E-02(5.59E-05)†	4.71E-01(1.83E-03)†	6.14E-03(2.62E-05)‡	6.86E-02(1.07E-05)†	4.78E-02(2.51E-05)
	50	5.23E-01(8.10E-03)†	8.02E-02(1.87E-05)†	6.40E-01(8.33E-04)†	4.07E-03(4.92E-06)‡	6.40E-02(2.41E-06)†	5.08E-02(2.18E-05)
	200	8.64E-01(5.70E-04)†	7.87E-02(1.12E-06)†	7.64E-01(2.77E-04)†	2.97E-03(3.38E-06)‡	6.61E-02(1.14E-06)†	5.16E-02(8.13E-05)
WFG1	5	5.86E-01(9.92E-04)†	5.03E-01(1.13E-02)	8.41E-01(5.87E-04)†	1.27E+00(1.25E-02)†	4.62E-01(6.88E-04)‡	5.25E-01(1.47E-03)
	25	5.80E-01(7.58E-04)†	4.18E-01(2.40E-04)‡	8.51E-01(9.84E-04)†	1.27E+00(3.19E-03)†	5.11E-01(3.75E-04)	5.16E-01(3.15E-02)
	50	6.16E-01(6.60E-04)†	3.97E-01(1.15E-04)‡	8.68E-01(7.56E-04)†	1.32E+00(1.52E-03)†	4.83E-01(3.70E-04)	4.86E-01(5.04E-02)
	200	6.51E-01(4.19E-04)†	3.79E-01(5.05E-05)‡	9.16E-01(8.43E-04)†	1.35E+00(1.02E-03)†	4.37E-01(3.37E-04)‡	4.66E-01(2.03E-02)
WFG2	5	2.05E+00(6.37E-03)‡	8.79E-01(7.57E-03)‡	2.18E+00(7.75E-03)‡	3.34E-01(2.74E-07)‡	2.07E+00(1.21E-02)‡	2.31E+00(1.71E-02)
	25	2.11E+00(9.64E-03)	7.73E-01(3.85E-04)‡	2.16E+00(1.20E-02)	3.33E-01(1.50E-08)‡	1.62E+00(2.56E-03)‡	2.16E+00(1.45E-02)
	50	2.12E+00(9.00E-03)	7.90E-01(4.73E-04)‡	2.10E+00(8.15E-03)	3.33E-01(1.41E-09)‡	1.58E+00(1.72E-03)‡	2.09E+00(1.32E-02)
	200	2.12E+00(4.98E-03)†	8.06E-01(6.98E-05)‡	2.10E+00(1.02E-02)	3.33E-01(2.36E-12)‡	1.51E+00(1.58E-04)‡	2.07E+00(6.92E-03)
WFG3	5	1.41E+00(3.23E-01)‡	3.66E+00(7.35E-02)†	2.56E+00(3.03E-02)†	9.67E-01(2.44E-04)‡	2.43E+00(3.12E-02)†	1.98E+00(3.02E-01)
	25	1.38E+00(5.87E-01)‡	3.51E+00(7.98E-02)†	2.89E+00(1.14E-01)‡	9.35E-01(2.90E-05)‡	2.90E+00(1.57E-01)‡	3.14E+00(3.63E-01)
	50	2.78E+00(3.57E-01)	3.61E+00(1.12E-01)†	2.89E+00(1.32E-01)‡	9.29E-01(1.51E-05)‡	3.04E+00(1.97E-01)	3.10E+00(2.88E-01)
	200	3.16E+00(1.66E-01)	3.48E+00(1.55E-01)	2.83E+00(7.21E-02)‡	9.24E-01(2.06E-05)‡	2.96E+00(1.89E-01)‡	3.16E+00(2.59E-01)
WFG4	5	1.12E+00(1.44E-03)†	9.28E-01(7.47E-03)†	1.34E+00(7.99E-04)†	2.12E-01(2.37E-03)‡	1.00E+00(9.92E-04)†	8.75E-01(3.48E-03)
	25	1.24E+00(1.17E-03)†	6.05E-01(4.81E-04)‡	1.36E+00(1.04E-03)†	1.98E-01(2.15E-03)‡	6.63E-01(2.01E-04)‡	7.72E-01(2.13E-03)
	50	1.29E+00(2.90E-03)†	5.69E-01(2.42E-04)‡	1.38E+00(1.49E-03)†	2.37E-01(5.12E-03)‡	6.16E-01(2.34E-04)‡	7.79E-01(7.18E-04)
	200	1.33E+00(2.09E-03)†	5.31E-01(2.14E-04)‡	1.37E+00(2.00E-03)†	3.65E-01(2.96E-04)‡	4.55E-01(2.37E-04)‡	6.84E-01(1.97E-03)
WFG5	5	1.16E+00(1.03E-03)†	1.20E+00(3.62E-03)†	1.51E+00(1.38E-03)†	5.16E-02(6.92E-05)‡	8.18E-01(9.01E-04)‡	9.05E-01(3.96E-03)
	25	1.25E+00(1.61E-03)†	8.49E-01(1.76E-03)‡	1.47E+00(1.03E-03)†	1.56E-02(2.25E-05)‡	6.70E-01(2.98E-04)‡	8.81E-01(9.55E-04)
	50	1.28E+00(1.37E-03)†	7.30E-01(8.54E-04)‡	1.46E+00(1.19E-03)†	1.35E-02(2.71E-05)‡	6.57E-01(1.93E-04)‡	9.23E-01(1.77E-03)
	200	1.33E+00(2.44E-03)†	6.27E-01(2.56E-04)‡	1.44E+00(8.52E-04)†	1.55E-02(2.91E-05)‡	6.61E-01(2.11E-04)‡	9.29E-01(1.34E-03)
WFG6	5	1.18E+00(5.65E-04)†	1.21E+00(8.09E-03)†	1.54E+00(1.59E-03)†	1.27E-02(3.33E-06)‡	1.08E+00(1.84E-03)†	8.90E-01(2.19E-03)
	25	1.27E+00(8.33E-04)†	6.77E-01(4.12E-04)‡	1.45E+00(8.03E-04)†	1.76E-02(2.17E-06)‡	6.97E-01(3.55E-04)‡	7.85E-01(1.03E-03)
	50	1.30E+00(1.06E-03)†	6.36E-01(1.77E-04)‡	1.45E+00(1.69E-03)†	1.97E-02(6.18E-07)‡	6.62E-01(1.93E-04)‡	7.84E-01(1.05E-03)
	200	1.31E+00(1.10E-03)†	6.23E-01(1.08E-04)‡	1.45E+00(7.87E-04)†	2.30E-02(6.57E-08)‡	5.75E-01(1.31E-03)‡	7.55E-01(4.55E-03)
WFG7	5	1.24E+00(9.25E-04)†	7.18E-01(2.33E-02)‡	1.48E+00(9.98E-04)†	2.10E-01(1.97E-03)‡	8.06E-01(8.73E-04)†	7.81E-01(6.74E-04)
	25	1.38E+00(1.07E-03)†	5.14E-01(1.11E-03)‡	1.56E+00(1.11E-03)†	1.01E-01(3.67E-04)‡	6.18E-01(2.34E-04)‡	7.07E-01(8.64E-04)
	50	1.40E+00(1.01E-03)†	5.66E-01(5.33E-04)‡	1.58E+00(1.05E-03)†	5.32E-02(1.69E-04)‡	5.80E-01(3.35E-04)‡	6.66E-01(5.25E-04)
	200	1.40E+00(1.41E-03)†	6.34E-01(1.11E-04)†	1.55E+00(8.41E-04)†	3.15E-02(2.77E-05)‡	4.42E-01(1.80E-04)‡	4.98E-01(6.56E-04)
WFG8	5	1.24E+00(1.12E-03)†	7.35E-01(2.39E-02)‡	1.49E+00(7.48E-04)†	1.85E-01(1.71E-03)‡	8.10E-01(6.72E-04)†	7.81E-01(5.60E-04)
	25	1.38E+00(1.07E-03)†	5.14E-01(1.11E-03)‡	1.56E+00(1.11E-03)†	9.93E-02(2.97E-04)‡	6.19E-01(1.40E-04)‡	7.12E-01(9.80E-04)
	50	1.39E+00(9.80E-04)†	5.72E-01(5.07E-04)‡	1.56E+00(6.31E-04)†	5.12E-02(8.05E-05)‡	5.78E-01(2.21E-04)‡	6.74E-01(6.23E-04)
	200	1.38E+00(1.30E-03)†	6.34E-01(1.87E-04)‡	1.56E+00(1.25E-03)†	3.14E-02(3.37E-05)‡	4.41E-01(1.52E-04)‡	4.96E-01(7.32E-04)
WFG9	5	1.25E+00(5.39E-04)‡	1.47E+00(1.18E-01)†	1.49E+00(2.78E-03)	1.14E-01(1.56E-04)‡	1.38E+00(1.58E-01)	1.33E+00(7.85E-02)
	25	1.38E+00(1.07E-03)	5.14E-01(1.11E-03)‡	1.56E+00(1.11E-03)†	8.90E-02(4.18E-05)‡	9.84E-01(1.31E-01)‡	1.14E+00(1.05E-01)
	50	1.41E+00(1.05E-03)	7.94E-01(6.67E-02)‡	1.50E+00(8.70E-04)†	7.15E-02(2.82E-05)‡	1.14E+00(1.29E-01)	1.17E+00(1.27E-01)
	200	1.40E+00(9.13E-04)	6.87E-01(3.79E-02)‡	1.50E+00(6.18E-04)†	5.28E-02(5.43E-05)‡	1.07E+00(2.15E-01)‡	1.24E+00(1.31E-01)

TABLE 68
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 7 TO 6 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.99E-01(5.29E-07)	7.64E-01(8.21E-03)†	1.00E+00(1.13E-08)‡	9.86E-01(1.06E-03)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.99E-01(1.66E-05)	7.34E-01(6.23E-03)†	6.45E-01(2.37E-01)†	9.97E-01(2.45E-04)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.99E-01(6.44E-06)	7.61E-01(9.72E-03)†	1.00E+00(8.59E-09)†	1.00E+00(1.27E-09)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(8.61E-07)	7.71E-01(7.43E-03)†	1.00E+00(5.25E-09)†	1.00E+00(4.82E-09)
F2	5	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(1.56E-08)†	7.24E-01(6.08E-03)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
	25	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(6.36E-09)†	7.16E-01(6.97E-03)†	6.45E-01(2.37E-01)†	1.00E+00(0.00E+00)
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(1.05E-09)†	7.15E-01(4.34E-03)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(9.63E-09)†	7.36E-01(8.86E-03)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
F3	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	5.48E-01(1.34E-02)†	1.00E+00(9.35E-09)‡	9.83E-01(1.83E-03)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(4.80E-09)‡	5.46E-01(1.22E-02)†	6.45E-01(2.37E-01)†	9.94E-01(4.73E-04)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(3.23E-14)‡	5.56E-01(1.41E-02)†	1.00E+00(5.51E-09)†	1.00E+00(2.99E-09)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(1.67E-10)‡	5.88E-01(1.10E-02)†	1.00E+00(9.12E-09)	1.00E+00(1.30E-08)
F4	5	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(1.50E-07)†	9.30E-01(4.15E-03)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
	25	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(2.37E-07)†	9.20E-01(4.73E-03)†	6.45E-01(2.37E-01)†	1.00E+00(0.00E+00)
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(2.06E-07)†	9.29E-01(3.27E-03)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(3.54E-07)†	9.21E-01(3.34E-03)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
WFG1	5	9.72E-01(2.18E-05)‡	3.93E-01(1.22E-02)†	9.63E-01(6.27E-05)‡	3.01E-01(3.25E-04)†	9.31E-01(1.66E-04)	9.30E-01(1.45E-04)
	25	9.74E-01(3.70E-05)‡	4.44E-01(9.21E-03)†	9.60E-01(9.11E-05)‡	3.00E-01(4.60E-04)†	6.00E-01(2.05E-01)†	9.34E-01(1.21E-04)
	50	9.75E-01(2.75E-05)‡	4.49E-01(9.76E-03)†	9.64E-01(8.44E-05)‡	3.02E-01(3.98E-04)†	9.27E-01(6.30E-04)†	9.39E-01(1.10E-04)
	200	9.74E-01(1.92E-05)‡	4.39E-01(9.47E-03)†	9.58E-01(2.19E-04)‡	3.01E-01(3.80E-04)†	9.35E-01(1.74E-04)	9.37E-01(1.01E-04)
WFG2	5	9.75E-01(2.70E-04)‡	4.94E-01(3.07E-02)†	9.75E-01(2.00E-04)‡	1.64E-01(7.20E-06)†	9.50E-01(1.61E-03)	9.54E-01(1.10E-03)
	25	9.73E-01(2.36E-04)‡	5.80E-01(2.40E-02)†	9.67E-01(2.16E-04)‡	1.64E-01(8.63E-06)†	6.23E-01(2.21E-01)	9.47E-01(1.63E-03)
	50	9.73E-01(2.76E-04)	5.73E-01(2.28E-02)†	9.70E-01(1.46E-04)	1.64E-01(8.93E-06)†	9.53E-01(9.95E-04)	9.57E-01(1.40E-03)
	200	9.75E-01(2.59E-04)	5.67E-01(2.09E-02)†	9.69E-01(1.94E-04)	1.65E-01(1.66E-06)†	9.51E-01(8.24E-04)	9.59E-01(1.12E-03)
WFG3	5	7.72E-01(6.24E-03)‡	7.59E-01(1.48E-02)‡	7.40E-01(5.13E-03)‡	4.69E-01(1.92E-05)†	6.46E-01(6.34E-04)	6.54E-01(2.22E-03)
	25	7.89E-01(5.19E-03)‡	8.02E-01(1.20E-02)‡	7.63E-01(6.34E-03)‡	4.68E-01(1.53E-05)†	4.25E-01(1.04E-01)†	6.61E-01(4.58E-03)
	50	7.95E-01(7.89E-03)‡	8.02E-01(1.93E-02)‡	7.39E-01(4.30E-03)‡	4.68E-01(2.65E-05)†	6.83E-01(6.02E-03)	6.59E-01(1.44E-03)
	200	7.68E-01(5.50E-03)‡	8.18E-01(1.53E-02)‡	7.76E-01(9.70E-03)‡	4.68E-01(2.96E-05)†	6.59E-01(2.52E-03)	6.58E-01(2.74E-03)
WFG4	5	9.96E-01(6.52E-06)†	8.81E-01(5.69E-03)†	9.86E-01(2.97E-05)†	8.44E-01(2.84E-05)†	1.00E+00(1.47E-10)	1.00E+00(9.01E-11)
	25	9.94E-01(1.81E-05)†	9.22E-01(4.68E-03)†	9.84E-01(2.56E-05)†	8.42E-01(3.81E-05)†	6.45E-01(2.37E-01)†	1.00E+00(1.31E-10)
	50	9.97E-01(6.36E-06)†	9.24E-01(4.29E-03)†	9.84E-01(4.55E-05)†	8.44E-01(3.10E-05)†	1.00E+00(1.24E-10)	1.00E+00(8.13E-11)
	200	9.96E-01(1.19E-05)†	9.21E-01(5.04E-03)†	9.86E-01(3.08E-05)†	8.44E-01(2.81E-05)†	1.00E+00(1.47E-10)	1.00E+00(1.41E-10)
WFG5	5	9.88E-01(6.92E-06)†	8.86E-01(6.31E-03)†	9.78E-01(2.19E-05)†	7.38E-01(3.64E-05)†	9.92E-01(1.25E-08)	9.92E-01(7.96E-09)
	25	9.86E-01(1.57E-05)†	9.22E-01(5.83E-03)†	9.77E-01(3.04E-05)†	7.36E-01(5.23E-05)†	6.40E-01(2.33E-01)†	9.92E-01(1.52E-07)
	50	9.87E-01(9.55E-06)†	9.26E-01(4.89E-03)†	9.78E-01(1.60E-05)†	7.38E-01(2.77E-05)†	9.92E-01(9.18E-09)	9.92E-01(1.80E-08)
	200	9.88E-01(7.99E-06)†	9.25E-01(5.33E-03)†	9.77E-01(1.91E-05)†	7.36E-01(4.00E-05)†	9.92E-01(1.01E-08)	9.92E-01(7.23E-09)
WFG6	5	9.81E-01(1.12E-04)	8.90E-01(5.45E-03)†	9.70E-01(1.02E-04)	3.28E-01(1.91E-06)†	9.24E-01(7.65E-03)	9.25E-01(7.76E-03)
	25	9.82E-01(9.36E-05)	9.19E-01(6.61E-03)	9.72E-01(8.92E-05)	3.27E-01(1.10E-06)†	5.88E-01(2.02E-01)†	9.32E-01(6.67E-03)
	50	9.83E-01(1.20E-04)‡	9.30E-01(5.82E-03)	9.74E-01(7.80E-05)	3.27E-01(1.02E-06)†	8.97E-01(8.72E-03)	9.20E-01(7.29E-03)
	200	9.82E-01(8.24E-05)	9.06E-01(7.23E-03)	9.71E-01(9.49E-05)	3.27E-01(1.18E-06)†	8.93E-01(8.00E-03)	9.12E-01(8.07E-03)
WFG7	5	9.88E-01(6.96E-05)†	8.97E-01(4.25E-03)†	9.78E-01(3.62E-05)†	9.06E-01(9.92E-04)†	9.98E-01(1.79E-06)	9.99E-01(1.64E-06)
	25	9.88E-01(3.72E-05)†	9.30E-01(4.15E-03)†	9.80E-01(4.19E-05)†	9.18E-01(1.38E-03)†	6.44E-01(2.36E-01)†	9.99E-01(8.60E-07)
	50	9.89E-01(6.05E-05)†	9.33E-01(3.99E-03)†	9.78E-01(7.51E-05)†	9.16E-01(1.50E-03)†	9.97E-01(2.53E-06)†	9.99E-01(5.92E-07)
	200	9.89E-01(4.09E-05)†	9.33E-01(3.59E-03)†	9.78E-01(7.42E-05)†	9.12E-01(2.30E-03)†	9.98E-01(1.69E-06)	9.99E-01(6.70E-07)
WFG8	5	9.90E-01(2.04E-05)†	8.99E-01(4.54E-03)†	9.80E-01(5.86E-05)†	9.00E-01(1.46E-03)†	9.98E-01(1.10E-06)	9.98E-01(1.32E-06)
	25	9.88E-01(3.72E-05)†	9.30E-01(4.15E-03)†	9.80E-01(4.19E-05)†	9.12E-01(9.54E-04)†	6.44E-01(2.36E-01)†	9.99E-01(1.12E-06)
	50	9.89E-01(3.34E-05)†	9.33E-01(3.87E-03)†	9.78E-01(7.45E-05)†	9.20E-01(1.27E-03)†	9.98E-01(2.15E-06)	9.99E-01(4.61E-07)
	200	9.90E-01(4.58E-05)†	9.34E-01(3.68E-03)†	9.77E-01(5.29E-05)†	9.14E-01(9.67E-04)†	9.98E-01(1.28E-06)	9.99E-01(1.28E-06)
WFG9	5	9.84E-01(1.41E-04)‡	8.85E-01(5.88E-03)	9.68E-01(1.10E-04)‡	9.84E-01(8.49E-05)‡	9.29E-01(4.62E-03)	9.17E-01(2.99E-03)
	25	9.88E-01(3.72E-05)‡	9.30E-01(4.15E-03)	9.80E-01(4.19E-05)	9.83E-01(1.29E-04)	6.01E-01(2.08E-01)†	9.49E-01(2.61E-03)
	50	9.87E-01(1.18E-04)‡	9.17E-01(5.11E-03)	9.73E-01(1.29E-04)‡	9.86E-01(1.47E-04)‡	9.30E-01(2.77E-03)	9.37E-01(3.12E-03)
	200	9.89E-01(8.81E-05)‡	9.22E-01(6.70E-03)	9.76E-01(1.13E-04)‡	9.84E-01(1.45E-04)‡	9.06E-01(4.97E-03)	9.23E-01(3.06E-03)

TABLE 69
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 6 TO 5 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.99E-01(1.50E-06)	8.67E-01(6.81E-03)†	1.00E+00(4.07E-08)	9.83E-01(1.56E-03)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(8.40E-09)	9.29E-01(3.13E-03)†	6.45E-01(2.37E-01)†	9.97E-01(3.59E-04)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(1.12E-09)‡	9.26E-01(2.47E-03)†	1.00E+00(2.24E-08)†	1.00E+00(7.81E-08)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(4.26E-11)‡	9.21E-01(3.57E-03)†	1.00E+00(7.86E-08)†	1.00E+00(1.26E-08)
F2	5	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(8.10E-09)†	9.62E-01(1.96E-03)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
	25	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(3.36E-10)†	9.16E-01(3.34E-03)†	6.45E-01(2.37E-01)†	1.00E+00(0.00E+00)
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(6.26E-10)†	9.28E-01(2.14E-03)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(1.73E-08)†	8.36E-01(8.06E-03)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
F3	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.13E-01(4.02E-03)†	1.00E+00(1.43E-07)‡	9.79E-01(2.73E-03)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(7.26E-12)‡	8.29E-01(2.91E-03)†	6.45E-01(2.37E-01)†	9.93E-01(6.95E-04)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.22E-01(1.98E-03)†	1.00E+00(1.81E-08)	1.00E+00(3.50E-08)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.19E-01(3.32E-03)†	1.00E+00(6.33E-07)†	1.00E+00(5.01E-08)
F4	5	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(2.57E-07)†	1.00E+00(1.66E-12)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
	25	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	9.99E-01(8.23E-07)†	1.00E+00(0.00E+00)	6.45E-01(2.37E-01)†	1.00E+00(0.00E+00)
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	9.99E-01(8.84E-07)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	9.99E-01(3.10E-06)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
WFG1	5	9.43E-01(9.95E-05)‡	3.65E-01(2.63E-03)†	8.93E-01(1.80E-03)	3.75E-01(1.14E-04)†	8.95E-01(1.02E-03)	8.95E-01(1.44E-03)
	25	8.97E-01(9.45E-04)	3.38E-01(1.28E-03)†	8.39E-01(1.26E-03)†	3.69E-01(2.09E-04)†	5.27E-01(1.59E-01)†	8.82E-01(2.12E-03)
	50	9.04E-01(4.68E-04)	3.46E-01(1.30E-03)†	8.55E-01(8.41E-04)†	3.77E-01(1.93E-04)†	7.78E-01(1.61E-03)†	8.94E-01(2.12E-03)
	200	9.52E-01(8.68E-05)‡	3.79E-01(1.06E-03)†	9.34E-01(2.35E-04)	3.73E-01(1.74E-04)†	9.03E-01(2.61E-04)†	9.41E-01(1.43E-04)
WFG2	5	9.21E-01(8.63E-04)	3.56E-01(4.83E-03)†	9.03E-01(1.41E-03)†	1.79E-01(3.45E-05)†	9.21E-01(1.49E-03)	9.29E-01(2.53E-03)
	25	9.61E-01(7.84E-04)	3.71E-01(3.98E-03)†	9.56E-01(4.95E-04)	1.76E-01(3.46E-05)†	5.77E-01(1.91E-01)†	9.40E-01(2.33E-03)
	50	9.59E-01(8.77E-04)	3.76E-01(3.91E-03)†	9.59E-01(6.28E-04)	1.74E-01(3.48E-05)†	8.95E-01(3.92E-03)†	9.39E-01(2.81E-03)
	200	9.61E-01(8.83E-04)	3.96E-01(2.73E-03)†	9.60E-01(7.91E-04)	1.75E-01(2.18E-05)†	9.10E-01(4.68E-03)	9.38E-01(2.55E-03)
WFG3	5	6.79E-01(3.70E-03)	5.47E-01(3.69E-02)†	6.53E-01(1.06E-03)	4.86E-01(2.06E-05)†	6.56E-01(3.64E-03)†	6.69E-01(2.57E-03)
	25	7.49E-01(7.00E-03)‡	6.87E-01(1.91E-02)	7.33E-01(5.02E-03)‡	4.82E-01(9.86E-05)†	4.37E-01(1.14E-01)†	6.59E-01(6.53E-03)
	50	7.67E-01(8.71E-03)‡	6.91E-01(1.18E-02)	7.76E-01(1.02E-02)‡	4.84E-01(4.36E-05)†	6.80E-01(4.81E-03)	6.67E-01(8.82E-03)
	200	7.76E-01(9.23E-03)	7.64E-01(6.98E-03)	7.55E-01(7.86E-03)	4.87E-01(2.51E-05)†	6.96E-01(6.57E-03)	7.23E-01(9.34E-03)
WFG4	5	9.86E-01(5.62E-05)†	6.64E-01(1.37E-02)†	9.73E-01(3.65E-05)†	8.67E-01(3.38E-05)†	9.99E-01(7.04E-07)	9.99E-01(8.58E-07)
	25	9.89E-01(1.78E-05)†	7.39E-01(9.98E-03)†	9.80E-01(5.12E-05)†	8.70E-01(1.36E-05)†	6.45E-01(2.36E-01)†	1.00E+00(8.22E-09)
	50	9.92E-01(2.13E-05)†	7.93E-01(3.41E-03)†	9.79E-01(3.14E-05)†	8.71E-01(1.23E-05)†	1.00E+00(1.04E-09)	1.00E+00(3.12E-09)
	200	9.94E-01(1.52E-05)†	8.40E-01(1.22E-03)†	9.84E-01(2.78E-05)†	8.74E-01(6.33E-06)†	1.00E+00(8.76E-10)	1.00E+00(1.22E-10)
WFG5	5	9.81E-01(1.96E-05)†	6.71E-01(8.16E-03)†	9.62E-01(5.55E-05)†	8.13E-01(2.58E-05)†	9.92E-01(2.14E-08)	9.92E-01(1.03E-08)
	25	9.79E-01(2.97E-05)†	7.86E-01(2.14E-03)†	9.70E-01(4.61E-05)†	8.10E-01(4.34E-05)†	6.40E-01(2.33E-01)†	9.92E-01(1.50E-07)
	50	9.83E-01(1.55E-05)†	8.18E-01(1.34E-03)†	9.73E-01(4.71E-05)†	8.12E-01(2.97E-05)†	9.92E-01(1.69E-08)†	9.92E-01(1.01E-08)
	200	9.84E-01(1.45E-05)†	8.47E-01(6.55E-04)†	9.75E-01(3.29E-05)†	8.13E-01(4.02E-05)†	9.92E-01(7.98E-09)	9.92E-01(8.26E-09)
WFG6	5	8.49E-01(6.17E-03)†	4.63E-01(1.54E-02)†	8.41E-01(5.41E-03)†	3.59E-01(3.52E-06)†	8.96E-01(7.18E-03)†	9.34E-01(6.71E-03)
	25	9.04E-01(7.81E-03)†	5.99E-01(6.76E-03)†	9.04E-01(6.85E-03)†	3.58E-01(3.00E-06)†	5.41E-01(1.71E-01)†	9.47E-01(6.46E-03)
	50	9.12E-01(8.15E-03)†	6.72E-01(6.64E-03)†	8.88E-01(8.47E-03)†	3.60E-01(1.72E-06)†	8.82E-01(9.87E-03)†	9.32E-01(9.21E-03)
	200	8.96E-01(9.80E-03)†	7.41E-01(7.07E-03)†	8.95E-01(8.25E-03)†	3.59E-01(1.67E-06)†	8.94E-01(1.15E-02)	9.21E-01(1.04E-02)
WFG7	5	9.78E-01(5.57E-05)†	6.78E-01(1.02E-02)†	9.58E-01(1.26E-04)†	9.65E-01(7.73E-05)†	9.90E-01(7.39E-06)†	9.92E-01(8.01E-06)
	25	9.84E-01(4.38E-05)†	8.10E-01(2.40E-03)†	9.72E-01(5.69E-05)†	9.85E-01(5.98E-05)†	6.43E-01(2.35E-01)†	9.97E-01(2.14E-06)
	50	9.86E-01(3.56E-05)†	8.32E-01(2.35E-03)†	9.75E-01(5.30E-05)†	9.92E-01(1.45E-05)†	9.98E-01(1.25E-06)	9.99E-01(8.43E-07)
	200	9.89E-01(4.44E-05)†	8.87E-01(7.37E-04)†	9.78E-01(4.03E-05)†	9.93E-01(2.32E-05)†	9.99E-01(5.26E-07)	9.99E-01(5.64E-07)
WFG8	5	9.77E-01(6.01E-05)†	6.81E-01(9.26E-03)†	9.60E-01(9.13E-05)†	9.63E-01(1.31E-04)†	9.90E-01(7.94E-06)†	9.92E-01(6.07E-06)
	25	9.84E-01(4.38E-05)†	8.10E-01(2.40E-03)†	9.72E-01(5.69E-05)†	9.85E-01(1.68E-05)†	6.43E-01(2.35E-01)†	9.97E-01(2.04E-06)
	50	9.84E-01(5.66E-05)†	8.49E-01(8.49E-04)†	9.73E-01(5.79E-05)†	9.93E-01(1.05E-05)†	9.99E-01(8.61E-07)	9.98E-01(1.45E-06)
	200	9.88E-01(4.94E-05)†	8.89E-01(6.63E-04)†	9.76E-01(3.36E-05)†	9.91E-01(3.18E-05)†	9.99E-01(5.83E-07)	9.99E-01(5.45E-07)
WFG9	5	9.53E-01(1.41E-03)‡	6.30E-01(9.79E-03)†	9.16E-01(2.44E-03)	9.89E-01(9.87E-06)‡	9.07E-01(3.81E-03)	9.10E-01(3.13E-03)
	25	9.84E-01(4.38E-05)	8.10E-01(2.40E-03)†	9.72E-01(5.69E-05)	9.91E-01(4.95E-06)‡	5.99E-01(2.06E-01)†	9.46E-01(3.13E-03)
	50	9.63E-01(1.93E-03)	7.87E-01(6.41E-03)†	9.55E-01(1.40E-03)	9.92E-01(8.49E-06)‡	8.95E-01(4.47E-03)†	9.52E-01(1.26E-03)
	200	9.68E-01(1.66E-03)‡	8.27E-01(6.60E-03)†	9.60E-01(1.47E-03)‡	9.94E-01(3.85E-06)‡	9.10E-01(3.38E-03)	9.21E-01(3.87E-03)

TABLE 70
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 5 TO 4 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.99E-01(5.68E-06)	8.77E-01(1.42E-03)†	1.00E+00(4.52E-07)	9.78E-01(2.50E-03)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(1.39E-09)‡	8.68E-01(5.73E-04)†	6.45E-01(2.37E-01)†	9.96E-01(5.79E-04)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.59E-01(2.22E-03)†	1.00E+00(9.17E-09)‡	1.00E+00(7.59E-08)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.68E-01(6.16E-04)†	1.00E+00(2.08E-07)†	1.00E+00(1.43E-08)
F2	5	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(7.42E-10)†	8.37E-01(8.39E-03)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
	25	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(1.58E-12)	7.53E-01(3.74E-02)†	6.45E-01(2.37E-01)†	1.00E+00(0.00E+00)
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	6.46E-01(3.29E-02)†	1.00E+00(0.00E+00)	1.00E+00(1.29E-13)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	5.06E-01(8.91E-02)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
F3	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.24E-01(2.45E-03)†	1.00E+00(7.03E-08)‡	9.73E-01(4.51E-03)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.03E-01(4.49E-03)†	6.45E-01(2.37E-01)†	9.91E-01(1.12E-03)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.04E-01(3.34E-03)†	1.00E+00(2.78E-09)	1.00E+00(5.74E-07)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	7.97E-01(4.38E-03)†	1.00E+00(9.24E-08)	1.00E+00(1.76E-08)
F4	5	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	9.99E-01(3.23E-06)†	1.00E+00(5.40E-13)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
	25	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(2.06E-07)†	1.00E+00(0.00E+00)	6.45E-01(2.37E-01)†	1.00E+00(0.00E+00)
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(2.45E-07)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(7.43E-08)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
WFG1	5	9.16E-01(3.45E-04)	4.30E-01(1.82E-03)†	8.37E-01(1.97E-03)†	4.19E-01(1.10E-04)†	8.46E-01(1.70E-03)†	9.11E-01(1.22E-03)
	25	8.84E-01(4.51E-04)†	4.14E-01(1.27E-03)†	8.14E-01(7.63E-04)†	4.12E-01(3.27E-04)†	5.33E-01(1.62E-01)†	9.25E-01(1.22E-03)
	50	8.96E-01(4.14E-04)†	4.17E-01(1.04E-03)†	8.49E-01(5.73E-04)†	4.19E-01(4.15E-04)†	7.91E-01(6.50E-04)†	9.25E-01(1.29E-03)
	200	9.53E-01(1.23E-04)†	4.42E-01(7.96E-04)†	9.36E-01(3.66E-04)†	4.19E-01(2.31E-04)†	9.29E-01(4.62E-04)†	9.62E-01(6.59E-05)
WFG2	5	9.48E-01(6.33E-04)	4.20E-01(5.21E-03)†	9.27E-01(1.00E-03)	1.98E-01(9.95E-05)†	9.31E-01(1.25E-03)	9.40E-01(1.72E-03)
	25	9.87E-01(3.79E-05)‡	4.45E-01(4.71E-03)†	9.79E-01(1.01E-04)	1.97E-01(6.42E-05)†	6.03E-01(2.08E-01)†	9.59E-01(1.62E-03)
	50	9.86E-01(5.88E-05)	4.57E-01(3.96E-03)†	9.81E-01(8.70E-05)	1.93E-01(5.95E-05)†	9.62E-01(2.45E-03)	9.67E-01(1.47E-03)
	200	9.87E-01(4.21E-05)†	4.73E-01(3.06E-03)†	9.81E-01(1.31E-04)†	1.95E-01(2.39E-05)†	9.92E-01(2.81E-05)	9.91E-01(2.97E-04)
WFG3	5	7.51E-01(2.11E-03)‡	5.68E-01(2.37E-02)†	7.28E-01(1.55E-03)‡	5.00E-01(1.41E-04)†	7.30E-01(2.95E-03)‡	7.01E-01(2.67E-03)
	25	8.59E-01(4.23E-03)‡	7.19E-01(1.55E-02)	8.18E-01(3.19E-03)‡	4.96E-01(2.58E-04)†	4.94E-01(1.43E-01)	7.07E-01(1.05E-02)
	50	8.89E-01(2.44E-03)‡	7.73E-01(8.69E-03)	8.69E-01(3.19E-03)‡	4.94E-01(2.48E-04)†	7.51E-01(7.21E-03)	7.35E-01(7.78E-03)
	200	8.86E-01(3.22E-03)	8.08E-01(6.46E-03)	8.58E-01(3.60E-03)	4.91E-01(3.06E-04)†	8.01E-01(4.22E-03)	8.39E-01(9.08E-03)
WFG4	5	9.78E-01(4.80E-05)†	6.99E-01(1.40E-02)†	9.61E-01(5.29E-05)†	8.51E-01(3.12E-05)†	9.93E-01(7.17E-06)†	9.95E-01(4.35E-06)
	25	9.88E-01(2.43E-05)†	8.28E-01(5.43E-03)†	9.76E-01(3.25E-05)†	8.53E-01(2.66E-05)†	6.45E-01(2.36E-01)†	1.00E+00(5.27E-08)
	50	9.89E-01(2.45E-05)†	8.68E-01(1.35E-03)†	9.79E-01(2.65E-05)†	8.56E-01(2.01E-05)†	1.00E+00(2.95E-08)	1.00E+00(2.30E-08)
	200	9.94E-01(1.20E-05)†	9.17E-01(5.07E-04)†	9.81E-01(2.88E-05)†	8.59E-01(1.46E-05)†	1.00E+00(2.74E-08)	1.00E+00(4.21E-08)
WFG5	5	9.74E-01(3.84E-05)†	7.64E-01(5.37E-03)†	9.48E-01(3.66E-05)†	8.95E-01(3.03E-05)†	9.89E-01(2.74E-06)	9.90E-01(3.46E-06)
	25	9.76E-01(2.79E-05)†	8.69E-01(1.12E-03)†	9.66E-01(4.94E-05)†	8.97E-01(1.80E-05)†	6.40E-01(2.33E-01)†	9.92E-01(1.46E-07)
	50	9.78E-01(3.14E-05)†	8.99E-01(2.98E-04)†	9.69E-01(4.05E-05)†	8.95E-01(4.10E-05)†	9.92E-01(2.86E-08)	9.92E-01(2.52E-08)
	200	9.82E-01(1.94E-05)†	9.29E-01(3.15E-04)†	9.73E-01(2.86E-05)†	8.93E-01(5.27E-05)†	9.92E-01(5.27E-08)	9.92E-01(4.28E-08)
WFG6	5	9.50E-01(1.94E-04)	5.14E-01(1.43E-02)†	9.25E-01(9.38E-05)‡	4.03E-01(8.10E-06)†	8.61E-01(9.07E-03)†	9.01E-01(8.06E-03)
	25	9.74E-01(7.11E-05)	8.05E-01(1.89E-03)†	9.61E-01(4.37E-05)‡	4.01E-01(5.96E-06)†	5.41E-01(1.72E-01)†	9.16E-01(1.12E-02)
	50	9.79E-01(6.27E-05)‡	8.65E-01(6.68E-04)†	9.67E-01(8.72E-05)‡	4.00E-01(2.99E-06)†	8.82E-01(8.50E-03)†	9.59E-01(6.51E-03)
	200	9.82E-01(1.06E-04)	9.26E-01(1.67E-04)†	9.70E-01(5.91E-05)‡	4.01E-01(3.22E-06)†	9.64E-01(4.97E-03)	9.58E-01(6.48E-03)
WFG7	5	9.67E-01(7.10E-05)†	7.41E-01(2.19E-02)†	9.41E-01(8.84E-05)†	9.35E-01(1.06E-04)†	9.79E-01(1.55E-05)†	9.84E-01(1.32E-05)
	25	9.80E-01(7.89E-05)†	8.96E-01(5.26E-04)†	9.67E-01(5.71E-05)†	9.62E-01(3.79E-05)†	6.42E-01(2.34E-01)†	9.96E-01(2.98E-06)
	50	9.84E-01(4.40E-05)†	9.10E-01(2.08E-04)†	9.72E-01(5.15E-05)†	9.69E-01(3.87E-05)†	9.97E-01(3.33E-06)†	9.98E-01(1.89E-06)
	200	9.87E-01(3.21E-05)†	9.39E-01(3.99E-04)†	9.77E-01(5.97E-05)†	9.72E-01(6.66E-05)†	9.99E-01(8.44E-07)	9.99E-01(8.39E-07)
WFG8	5	9.66E-01(5.72E-05)†	7.22E-01(1.85E-02)†	9.44E-01(7.05E-05)†	9.32E-01(8.31E-05)†	9.82E-01(1.27E-05)†	9.84E-01(1.56E-05)
	25	9.80E-01(7.89E-05)†	8.96E-01(5.26E-04)†	9.67E-01(5.71E-05)†	9.63E-01(4.80E-05)†	6.43E-01(2.35E-01)†	9.96E-01(3.34E-06)
	50	9.83E-01(4.71E-05)†	9.09E-01(3.21E-04)†	9.72E-01(5.85E-05)†	9.69E-01(7.66E-05)†	9.97E-01(3.51E-06)	9.98E-01(3.00E-06)
	200	9.88E-01(4.52E-05)†	9.35E-01(4.11E-04)†	9.75E-01(5.82E-05)†	9.71E-01(8.97E-05)†	9.99E-01(1.05E-06)	9.99E-01(1.73E-06)
WFG9	5	9.64E-01(1.50E-04)‡	7.04E-01(7.56E-03)†	9.24E-01(3.25E-04)	9.74E-01(4.26E-05)‡	8.79E-01(7.57E-03)	8.96E-01(4.88E-03)†
	25	9.80E-01(7.89E-05)‡	8.96E-01(5.26E-04)†	9.67E-01(5.71E-05)	9.82E-01(1.55E-05)‡	6.00E-01(2.07E-01)†	9.28E-01(5.04E-03)†
	50	9.87E-01(4.57E-05)‡	8.98E-01(1.34E-03)†	9.73E-01(8.44E-05)	9.84E-01(7.94E-06)	9.07E-01(4.53E-03)	9.31E-01(4.90E-03)†
	200	9.85E-01(7.04E-05)‡	9.42E-01(1.20E-03)	9.78E-01(6.48E-05)‡	9.82E-01(4.52E-05)‡	9.45E-01(1.42E-03)	9.25E-01(3.33E-03)†

TABLE 71
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 4 TO 3 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.00E+00(0.00E+00)‡	9.84E-01(2.66E-03)‡	9.94E-01(1.08E-03)	8.79E-01(6.77E-03)†	9.99E-01(5.15E-07)‡	9.70E-01(4.72E-03)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.67E-01(4.43E-03)†	6.45E-01(2.37E-01)†	9.94E-01(1.09E-03)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.70E-01(2.83E-03)†	1.00E+00(5.49E-08)‡	1.00E+00(7.03E-07)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.63E-01(2.01E-04)†	1.00E+00(5.04E-08)†	1.00E+00(5.30E-10)
F2	5	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(3.35E-08)†	9.08E-01(5.65E-03)†	1.00E+00(4.39E-11)†	1.00E+00(1.38E-11)
	25	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	9.19E-01(4.19E-03)†	6.45E-01(2.37E-01)†	1.00E+00(1.16E-12)
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(8.26E-12)	9.20E-01(5.40E-03)†	1.00E+00(5.14E-13)	1.00E+00(1.57E-13)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(2.81E-07)†	9.02E-01(6.46E-03)†	1.00E+00(1.29E-13)	1.00E+00(3.23E-14)
F3	5	1.00E+00(0.00E+00)‡	9.94E-01(1.09E-03)‡	1.00E+00(0.00E+00)‡	8.42E-01(4.09E-03)†	9.99E-01(2.68E-06)‡	9.76E-01(3.91E-03)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.16E-01(1.09E-08)†	6.45E-01(2.37E-01)†	9.88E-01(2.11E-03)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.16E-01(3.18E-09)†	1.00E+00(6.00E-09)	1.00E+00(1.58E-07)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.18E-01(4.33E-05)†	1.00E+00(1.11E-08)†	1.00E+00(3.59E-09)
F4	5	1.00E+00(2.06E-09)	1.00E+00(0.00E+00)‡	9.99E-01(9.67E-07)†	1.00E+00(2.96E-11)	1.00E+00(2.04E-11)	1.00E+00(2.35E-11)
	25	1.00E+00(1.55E-10)	1.00E+00(0.00E+00)‡	1.00E+00(4.27E-08)†	1.00E+00(0.00E+00)‡	6.45E-01(2.37E-01)†	1.00E+00(9.85E-12)
	50	1.00E+00(3.23E-14)	1.00E+00(0.00E+00)	1.00E+00(2.65E-09)	1.00E+00(0.00E+00)	1.00E+00(3.23E-14)	1.00E+00(1.41E-12)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	9.99E-01(6.75E-07)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
WFG1	5	8.89E-01(6.40E-04)†	5.31E-01(2.74E-03)†	8.03E-01(1.08E-03)†	5.12E-01(3.46E-04)†	8.51E-01(1.69E-03)†	9.12E-01(1.08E-03)
	25	8.83E-01(5.71E-04)†	5.24E-01(3.30E-04)†	8.25E-01(5.09E-04)†	5.07E-01(1.59E-04)†	5.37E-01(1.65E-01)†	9.41E-01(9.14E-04)
	50	9.06E-01(5.06E-04)†	5.18E-01(4.22E-04)†	8.66E-01(4.99E-04)†	5.11E-01(2.52E-04)†	8.50E-01(8.79E-04)†	9.63E-01(7.91E-04)
	200	9.64E-01(8.20E-05)†	5.38E-01(5.24E-04)†	9.50E-01(1.76E-04)†	5.07E-01(1.71E-04)†	9.57E-01(2.55E-04)†	9.73E-01(2.79E-05)
WFG2	5	9.17E-01(1.04E-03)†	4.58E-01(6.09E-03)†	9.26E-01(9.56E-04)†	2.06E-01(1.15E-04)†	9.21E-01(1.41E-03)†	9.54E-01(1.21E-03)
	25	9.47E-01(6.95E-04)†	4.84E-01(5.30E-03)†	9.43E-01(8.36E-04)†	2.15E-01(7.04E-05)†	6.26E-01(2.23E-01)†	9.86E-01(5.15E-04)
	50	9.50E-01(8.56E-04)†	5.01E-01(4.24E-03)†	9.42E-01(7.10E-04)†	2.07E-01(9.97E-05)†	9.63E-01(8.67E-04)†	9.95E-01(9.45E-06)
	200	9.45E-01(8.63E-04)†	5.46E-01(2.87E-03)†	9.45E-01(8.94E-04)†	2.10E-01(2.63E-05)†	9.62E-01(9.26E-04)†	9.98E-01(1.51E-06)
WFG3	5	7.46E-01(2.38E-03)†	6.74E-01(1.12E-02)†	7.46E-01(1.44E-03)†	5.04E-01(5.42E-04)†	7.83E-01(2.72E-03)	7.82E-01(3.14E-03)
	25	8.28E-01(3.74E-03)	7.97E-01(4.88E-03)†	8.16E-01(3.59E-03)†	4.83E-01(8.51E-04)†	5.36E-01(1.65E-01)†	8.49E-01(6.70E-03)
	50	8.51E-01(3.79E-03)†	8.00E-01(3.16E-03)†	8.23E-01(3.71E-03)†	4.88E-01(9.07E-04)†	8.44E-01(4.10E-03)†	9.01E-01(3.25E-03)
	200	8.52E-01(2.77E-03)†	8.15E-01(4.20E-03)†	8.34E-01(4.31E-03)†	4.96E-01(7.15E-04)†	8.54E-01(3.72E-03)†	9.05E-01(1.53E-03)
WFG4	5	9.69E-01(9.04E-05)†	8.45E-01(4.06E-03)†	9.49E-01(8.23E-05)†	8.26E-01(1.03E-04)†	9.83E-01(2.42E-05)†	9.88E-01(1.12E-05)
	25	9.82E-01(3.04E-05)†	9.51E-01(1.93E-04)†	9.70E-01(4.66E-05)†	8.31E-01(5.46E-05)†	6.44E-01(2.36E-01)†	9.98E-01(1.25E-06)
	50	9.86E-01(2.14E-05)†	9.71E-01(4.21E-05)†	9.70E-01(9.35E-05)†	8.37E-01(6.12E-05)†	9.99E-01(1.25E-06)	1.00E+00(1.68E-07)
	200	9.93E-01(1.49E-05)†	9.84E-01(8.91E-06)†	9.79E-01(3.87E-05)†	8.40E-01(1.83E-05)†	9.99E-01(3.92E-07)	9.99E-01(1.05E-06)
WFG5	5	9.62E-01(8.54E-05)†	9.22E-01(1.66E-04)†	9.26E-01(7.30E-05)†	9.53E-01(4.59E-05)†	9.77E-01(3.76E-05)	9.77E-01(2.96E-05)
	25	9.72E-01(3.95E-05)†	9.58E-01(5.72E-05)†	9.55E-01(1.09E-04)†	9.62E-01(4.86E-05)†	6.39E-01(2.32E-01)†	9.90E-01(2.87E-06)
	50	9.74E-01(4.11E-05)†	9.62E-01(5.29E-05)†	9.63E-01(1.09E-04)†	9.62E-01(7.99E-05)†	9.92E-01(2.28E-07)	9.92E-01(2.30E-07)
	200	9.81E-01(1.89E-05)†	9.66E-01(3.34E-05)†	9.64E-01(8.65E-05)†	9.62E-01(7.48E-05)†	9.92E-01(6.89E-08)	9.92E-01(3.93E-08)
WFG6	5	8.26E-01(8.80E-03)†	6.14E-01(1.04E-02)†	8.05E-01(9.04E-03)†	4.65E-01(3.56E-05)†	8.44E-01(1.02E-02)†	8.62E-01(1.36E-02)
	25	8.27E-01(1.34E-02)†	8.13E-01(1.04E-02)†	8.09E-01(1.34E-02)†	4.63E-01(1.62E-05)†	5.27E-01(1.66E-01)†	9.32E-01(1.24E-02)
	50	8.28E-01(1.34E-02)†	8.28E-01(1.19E-02)	8.06E-01(1.25E-02)†	4.61E-01(1.26E-05)†	8.69E-01(1.57E-02)	8.88E-01(1.84E-02)
	200	8.40E-01(1.37E-02)†	8.30E-01(1.33E-02)†	8.01E-01(1.25E-02)†	4.59E-01(1.08E-05)†	8.45E-01(1.53E-02)†	9.68E-01(4.91E-03)
WFG7	5	9.57E-01(1.13E-04)†	8.42E-01(1.19E-02)†	9.27E-01(1.39E-04)†	9.01E-01(2.02E-04)†	9.66E-01(7.75E-05)†	9.76E-01(3.20E-05)
	25	9.79E-01(6.25E-05)†	9.40E-01(8.05E-05)†	9.60E-01(1.16E-04)†	9.61E-01(5.86E-05)†	6.41E-01(2.34E-01)†	9.95E-01(5.97E-06)
	50	9.81E-01(5.11E-05)†	9.54E-01(5.90E-05)†	9.69E-01(9.23E-05)†	9.71E-01(4.24E-05)†	9.95E-01(1.37E-05)	9.96E-01(7.46E-06)
	200	9.85E-01(4.19E-05)†	9.77E-01(3.77E-05)†	9.75E-01(8.13E-05)†	9.72E-01(4.29E-05)†	9.97E-01(6.59E-06)	9.98E-01(3.06E-06)
WFG8	5	9.53E-01(1.08E-04)†	8.73E-01(1.78E-03)†	9.25E-01(7.68E-05)†	8.93E-01(1.31E-04)†	9.70E-01(6.43E-05)†	9.75E-01(5.38E-05)
	25	9.79E-01(6.25E-05)†	9.40E-01(8.05E-05)†	9.60E-01(1.16E-04)†	9.62E-01(5.85E-05)†	6.39E-01(2.32E-01)†	9.93E-01(1.76E-05)
	50	9.83E-01(3.01E-05)†	9.55E-01(6.39E-05)†	9.68E-01(1.19E-04)†	9.70E-01(3.88E-05)†	9.94E-01(1.25E-05)	9.95E-01(1.22E-05)
	200	9.85E-01(5.69E-05)†	9.76E-01(4.31E-05)†	9.71E-01(1.19E-04)†	9.76E-01(4.25E-05)†	9.97E-01(5.37E-06)	9.98E-01(1.49E-06)
WFG9	5	9.30E-01(3.51E-03)‡	7.63E-01(8.65E-03)†	8.84E-01(3.23E-03)	9.34E-01(2.88E-04)‡	8.67E-01(4.24E-03)†	9.01E-01(3.89E-03)
	25	9.79E-01(6.25E-05)	9.40E-01(8.05E-05)	9.60E-01(1.16E-04)	9.64E-01(8.37E-05)	5.96E-01(2.04E-01)†	9.32E-01(5.25E-03)
	50	9.67E-01(4.26E-04)	9.23E-01(4.64E-03)	9.57E-01(4.09E-04)	9.74E-01(4.58E-05)	9.01E-01(5.80E-03)†	9.37E-01(3.44E-03)
	200	9.69E-01(4.58E-04)‡	9.55E-01(1.42E-03)‡	9.58E-01(4.37E-04)‡	9.65E-01(1.45E-04)‡	8.96E-01(7.52E-03)	9.20E-01(4.59E-03)

TABLE 72
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 3 TO 2 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.00E+00(0.00E+00)‡	9.34E-01(1.55E-02)	9.55E-01(5.21E-03)†	9.90E-01(6.33E-04)†	9.99E-01(4.09E-06)†	1.00E+00(1.93E-07)
	25	1.00E+00(0.00E+00)‡	8.83E-01(1.67E-02)†	1.00E+00(2.61E-12)‡	9.57E-01(1.02E-02)†	6.45E-01(2.36E-01)†	1.00E+00(8.31E-08)
	50	1.00E+00(0.00E+00)‡	9.91E-01(1.65E-03)†	1.00E+00(0.00E+00)‡	9.62E-01(9.87E-03)†	1.00E+00(1.38E-07)‡	1.00E+00(3.36E-06)
	200	1.00E+00(0.00E+00)‡	9.99E-01(5.73E-05)†	9.62E-01(6.06E-03)	9.95E-01(7.03E-04)†	9.99E-01(6.17E-07)†	1.00E+00(4.76E-09)
F2	5	1.00E+00(0.00E+00)	1.00E+00(9.58E-07)	1.00E+00(1.22E-06)†	7.80E-01(1.12E-01)†	1.00E+00(8.93E-10)†	1.00E+00(8.93E-11)
	25	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	9.92E-01(1.36E-04)†	1.00E+00(5.47E-10)†	6.45E-01(2.37E-01)†	1.00E+00(0.00E+00)
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	9.93E-01(9.61E-05)†	1.00E+00(8.72E-11)†	1.00E+00(5.25E-10)†	1.00E+00(0.00E+00)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	9.80E-01(2.97E-04)†	1.00E+00(9.14E-13)	1.00E+00(3.68E-10)†	1.00E+00(0.00E+00)
F3	5	1.00E+00(0.00E+00)‡	9.91E-01(2.77E-03)†	1.00E+00(0.00E+00)‡	7.95E-01(1.75E-02)†	9.99E-01(1.54E-06)†	1.00E+00(9.92E-08)
	25	1.00E+00(0.00E+00)‡	9.88E-01(2.97E-03)	1.00E+00(0.00E+00)‡	1.00E+00(1.13E-08)†	6.45E-01(2.36E-01)†	1.00E+00(1.23E-10)
	50	1.00E+00(0.00E+00)‡	9.99E-01(5.50E-05)†	1.00E+00(0.00E+00)‡	9.97E-01(3.15E-04)†	1.00E+00(5.59E-08)†	1.00E+00(1.49E-08)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.25E-01(2.43E-02)†	1.00E+00(6.18E-09)†	1.00E+00(4.68E-08)†	1.00E+00(1.04E-09)
F4	5	9.99E-01(1.80E-06)	1.00E+00(0.00E+00)‡	9.97E-01(1.07E-05)†	1.00E+00(2.81E-10)‡	1.00E+00(6.96E-10)	1.00E+00(9.00E-10)
	25	1.00E+00(4.49E-11)‡	1.00E+00(1.87E-09)‡	9.92E-01(1.55E-04)†	1.00E+00(5.77E-10)‡	6.45E-01(2.37E-01)	1.00E+00(4.95E-10)
	50	1.00E+00(2.48E-09)‡	1.00E+00(0.00E+00)‡	9.76E-01(8.35E-04)†	1.00E+00(9.68E-11)‡	1.00E+00(2.18E-10)‡	1.00E+00(4.61E-10)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.64E-01(8.57E-04)†	1.00E+00(1.11E-11)‡	1.00E+00(1.79E-10)‡	1.00E+00(3.35E-10)
WFG1	5	8.68E-01(5.60E-04)†	7.70E-01(1.19E-02)†	7.88E-01(1.37E-03)†	5.67E-01(9.47E-07)†	8.42E-01(1.37E-03)†	8.98E-01(8.09E-04)
	25	9.14E-01(8.48E-04)†	6.97E-01(8.44E-04)†	8.52E-01(9.58E-04)†	5.69E-01(4.09E-07)†	5.74E-01(1.88E-01)†	9.55E-01(7.31E-04)
	50	9.32E-01(6.67E-04)†	7.03E-01(3.49E-04)†	8.85E-01(1.21E-03)†	5.69E-01(1.09E-07)†	9.00E-01(7.74E-04)†	9.77E-01(1.79E-04)
	200	9.83E-01(6.63E-06)†	7.15E-01(1.83E-04)†	9.77E-01(8.69E-05)†	5.69E-01(1.75E-07)†	9.63E-01(7.64E-04)†	9.86E-01(7.98E-06)
WFG2	5	8.49E-01(1.04E-03)†	6.13E-01(6.52E-03)†	9.47E-01(2.75E-04)†	2.32E-01(2.51E-04)†	9.44E-01(3.26E-04)†	9.55E-01(8.33E-04)
	25	9.71E-01(1.16E-04)†	6.19E-01(6.67E-03)†	9.66E-01(1.58E-04)†	2.20E-01(3.91E-04)†	6.24E-01(2.21E-01)†	9.83E-01(3.08E-04)
	50	9.76E-01(7.73E-05)	6.80E-01(4.46E-03)†	9.70E-01(8.68E-05)	2.27E-01(3.31E-04)†	9.70E-01(3.78E-04)	9.73E-01(6.31E-04)
	200	9.78E-01(9.62E-05)†	7.37E-01(1.60E-05)†	9.74E-01(5.37E-05)†	2.46E-01(2.74E-08)†	9.83E-01(1.67E-04)†	9.92E-01(8.53E-05)
WFG3	5	8.22E-01(4.88E-04)†	8.28E-01(1.94E-03)†	8.21E-01(3.49E-04)†	4.35E-01(2.10E-04)†	8.67E-01(7.13E-04)†	8.91E-01(4.97E-04)
	25	8.89E-01(1.10E-04)†	9.13E-01(1.04E-03)	8.75E-01(3.22E-04)†	4.34E-01(2.19E-04)†	5.79E-01(1.91E-01)†	9.24E-01(4.95E-04)
	50	8.93E-01(1.71E-04)†	9.17E-01(8.58E-04)	8.86E-01(3.95E-04)†	4.27E-01(3.24E-04)†	9.00E-01(3.84E-04)†	9.19E-01(4.84E-04)
	200	8.91E-01(2.46E-04)†	9.17E-01(9.82E-04)	8.81E-01(6.68E-05)†	4.26E-01(2.41E-04)†	8.99E-01(4.86E-04)	9.06E-01(6.13E-04)
WFG4	5	9.53E-01(1.69E-04)†	8.64E-01(1.74E-03)†	9.19E-01(2.67E-04)†	7.88E-01(2.10E-04)†	9.54E-01(1.30E-04)†	9.73E-01(4.62E-05)
	25	9.73E-01(7.67E-05)†	9.53E-01(9.22E-05)†	9.28E-01(3.26E-04)†	7.96E-01(7.39E-05)†	6.36E-01(2.30E-01)†	9.90E-01(8.87E-05)
	50	9.81E-01(1.03E-04)†	9.61E-01(1.07E-04)†	9.24E-01(3.57E-04)†	8.06E-01(9.07E-05)†	9.91E-01(4.60E-05)	9.94E-01(2.12E-05)
	200	9.85E-01(9.61E-05)†	9.65E-01(9.47E-05)†	9.23E-01(1.97E-04)†	8.18E-01(6.62E-05)†	9.87E-01(3.15E-05)†	9.93E-01(2.75E-05)
WFG5	5	9.38E-01(1.49E-04)	9.05E-01(1.49E-04)†	8.78E-01(4.39E-04)†	9.42E-01(3.81E-05)	9.39E-01(2.44E-04)	9.45E-01(2.18E-04)
	25	9.60E-01(1.00E-04)†	9.37E-01(2.06E-05)†	9.23E-01(2.93E-04)†	9.56E-01(4.67E-05)†	6.28E-01(2.25E-01)†	9.75E-01(1.42E-04)
	50	9.67E-01(8.00E-05)†	9.42E-01(1.16E-05)†	9.22E-01(2.04E-04)†	9.51E-01(8.67E-05)†	9.82E-01(4.53E-05)	9.84E-01(2.63E-05)
	200	9.72E-01(9.55E-05)†	9.45E-01(2.25E-05)†	9.20E-01(2.59E-04)†	9.44E-01(1.06E-04)†	9.90E-01(1.48E-06)	9.89E-01(3.61E-06)
WFG6	5	9.19E-01(3.09E-04)	8.35E-01(9.04E-04)†	8.87E-01(4.97E-04)†	5.23E-01(1.15E-04)†	8.59E-01(5.27E-03)†	9.16E-01(1.14E-03)
	25	9.48E-01(2.25E-04)†	9.37E-01(2.32E-04)†	9.15E-01(6.72E-04)†	5.21E-01(7.42E-05)†	6.09E-01(2.15E-01)†	9.71E-01(2.29E-04)
	50	9.54E-01(1.52E-04)†	9.46E-01(2.51E-04)†	9.16E-01(7.17E-04)†	5.18E-01(1.13E-04)†	9.80E-01(1.44E-04)	9.84E-01(1.46E-04)
	200	9.61E-01(2.76E-04)†	9.55E-01(2.48E-04)†	9.16E-01(5.54E-04)†	5.19E-01(6.12E-05)†	9.77E-01(1.62E-04)	9.83E-01(2.11E-04)
WFG7	5	9.42E-01(1.26E-04)†	8.13E-01(1.64E-02)†	9.04E-01(4.45E-04)†	8.59E-01(2.64E-04)†	9.37E-01(2.17E-04)†	9.53E-01(1.88E-04)
	25	9.72E-01(1.19E-04)†	9.08E-01(2.16E-04)†	9.25E-01(6.04E-04)†	9.44E-01(9.85E-05)†	6.33E-01(2.28E-01)†	9.85E-01(6.68E-05)
	50	9.77E-01(7.45E-05)†	9.30E-01(1.03E-04)†	9.34E-01(7.33E-04)†	9.57E-01(7.21E-05)†	9.86E-01(7.91E-05)	9.86E-01(8.53E-05)
	200	9.77E-01(5.40E-05)†	9.65E-01(4.93E-05)†	9.35E-01(4.36E-04)†	9.60E-01(8.35E-05)†	9.89E-01(8.09E-05)	9.89E-01(5.90E-05)
WFG8	5	9.42E-01(1.42E-04)†	8.31E-01(2.04E-04)†	9.12E-01(5.38E-04)†	8.56E-01(2.94E-04)†	9.34E-01(1.72E-04)†	9.53E-01(2.44E-04)
	25	9.72E-01(1.19E-04)†	9.08E-01(2.16E-04)†	9.25E-01(6.04E-04)†	9.44E-01(9.68E-05)†	6.32E-01(2.27E-01)†	9.83E-01(9.10E-05)
	50	9.73E-01(8.51E-05)†	9.36E-01(2.76E-04)†	9.37E-01(5.69E-04)†	9.56E-01(1.07E-04)†	9.85E-01(7.51E-05)	9.87E-01(5.74E-05)
	200	9.81E-01(9.49E-05)	9.66E-01(4.86E-05)†	9.40E-01(4.74E-04)†	9.60E-01(4.94E-05)†	9.87E-01(4.80E-05)	9.86E-01(1.10E-04)
WFG9	5	9.45E-01(3.40E-04)‡	7.95E-01(8.16E-04)†	8.84E-01(7.38E-04)‡	8.72E-01(1.01E-03)‡	8.62E-01(9.09E-04)	8.54E-01(1.75E-03)
	25	9.72E-01(1.19E-04)‡	9.08E-01(2.16E-04)	9.25E-01(6.04E-04)	9.44E-01(2.16E-04)	6.02E-01(2.07E-01)	9.24E-01(2.17E-03)
	50	9.72E-01(3.52E-04)‡	9.20E-01(1.09E-03)	9.23E-01(2.28E-04)	9.44E-01(2.44E-04)	9.13E-01(1.28E-03)	9.23E-01(2.04E-03)
	200	9.73E-01(2.93E-04)‡	9.48E-01(9.18E-04)‡	9.24E-01(2.21E-04)‡	9.37E-01(4.10E-04)‡	9.23E-01(1.79E-03)	9.11E-01(1.75E-03)

TABLE 73
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 2 TO 3 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.00E+00(0.00E+00)‡	9.94E-01(1.09E-03)†	1.00E+00(1.95E-07)	9.91E-01(9.89E-05)†	1.00E+00(7.94E-08)†	1.00E+00(4.28E-09)
	25	1.00E+00(0.00E+00)‡	8.09E-01(4.05E-03)†	1.00E+00(0.00E+00)‡	9.95E-01(2.72E-04)†	6.45E-01(2.37E-01)†	1.00E+00(2.50E-10)
	50	1.00E+00(0.00E+00)‡	7.12E-01(1.11E-05)†	1.00E+00(0.00E+00)‡	9.92E-01(6.40E-04)†	9.14E-01(1.42E-02)	9.99E-01(1.87E-06)
	200	7.07E-01(2.96E-08)†	7.07E-01(7.53E-11)†	9.98E-01(1.43E-06)†	9.81E-01(1.99E-04)†	7.07E-01(3.31E-09)†	1.00E+00(3.24E-06)
F2	5	9.62E-01(1.36E-03)†	9.70E-01(3.75E-04)†	1.00E+00(8.32E-10)	9.81E-01(2.61E-03)†	9.30E-01(1.75E-03)†	9.99E-01(3.59E-06)
	25	8.27E-01(1.38E-05)†	8.51E-01(6.98E-05)†	9.89E-01(6.40E-05)‡	9.99E-01(7.11E-06)‡	5.40E-01(1.66E-01)†	9.89E-01(1.15E-03)
	50	8.21E-01(1.64E-06)†	8.37E-01(1.52E-05)†	9.94E-01(1.68E-05)†	9.98E-01(3.49E-05)†	8.29E-01(1.24E-04)†	1.00E+00(6.94E-07)
	200	8.19E-01(5.13E-06)†	8.22E-01(1.46E-06)†	9.95E-01(1.20E-05)†	9.97E-01(1.04E-04)	8.20E-01(2.66E-05)†	9.99E-01(7.89E-06)
F3	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.73E-01(2.36E-03)†	1.00E+00(3.49E-09)†	1.00E+00(4.44E-09)
	25	1.00E+00(0.00E+00)	9.87E-01(6.30E-04)†	1.00E+00(0.00E+00)	9.96E-01(4.70E-05)†	6.45E-01(2.37E-01)†	1.00E+00(1.58E-06)
	50	1.00E+00(0.00E+00)‡	8.30E-01(4.90E-05)†	1.00E+00(0.00E+00)‡	9.93E-01(2.99E-04)†	9.89E-01(1.63E-03)†	1.00E+00(3.99E-06)
	200	8.17E-01(4.93E-08)†	8.17E-01(2.51E-08)†	9.93E-01(2.29E-05)†	9.81E-01(1.61E-04)†	8.17E-01(1.97E-07)†	1.00E+00(2.43E-07)
F4	5	1.00E+00(1.43E-10)‡	8.82E-01(6.36E-03)	9.78E-01(1.92E-03)‡	8.25E-01(1.18E-03)	8.66E-01(4.50E-03)	8.88E-01(7.66E-03)
	25	8.16E-01(4.59E-31)†	8.16E-01(1.29E-09)	8.94E-01(7.51E-03)‡	8.16E-01(3.50E-10)	5.27E-01(1.58E-01)†	8.25E-01(1.19E-03)
	50	8.16E-01(5.16E-13)‡	8.16E-01(3.92E-10)‡	9.05E-01(6.00E-03)‡	8.16E-01(6.32E-10)	8.16E-01(1.11E-10)	8.16E-01(5.37E-08)
	200	8.16E-01(4.59E-31)‡	8.16E-01(3.23E-14)‡	9.12E-01(7.19E-03)‡	8.16E-01(2.44E-08)†	8.16E-01(1.35E-10)	8.16E-01(1.11E-10)
WFG1	5	8.52E-01(1.10E-03)†	8.91E-01(1.36E-03)†	7.90E-01(1.51E-03)†	5.18E-01(4.44E-04)†	7.97E-01(1.36E-03)†	9.22E-01(2.11E-03)
	25	6.83E-01(3.59E-04)†	7.83E-01(2.60E-03)†	8.28E-01(8.32E-04)†	4.93E-01(5.60E-08)†	4.48E-01(1.15E-01)†	8.95E-01(5.50E-03)
	50	6.88E-01(1.35E-04)†	6.87E-01(3.37E-03)†	8.30E-01(9.85E-04)†	4.93E-01(1.12E-08)†	6.73E-01(3.66E-04)†	9.68E-01(1.91E-03)
	200	7.07E-01(7.23E-07)†	6.12E-01(1.50E-05)†	8.71E-01(4.37E-04)†	4.93E-01(4.41E-09)†	7.04E-01(1.69E-05)†	9.89E-01(2.49E-03)
WFG2	5	6.45E-01(6.93E-04)†	8.13E-01(1.28E-03)†	9.46E-01(9.49E-04)†	1.90E-01(1.33E-05)†	6.58E-01(1.53E-04)†	9.88E-01(5.94E-05)
	25	6.41E-01(1.11E-05)†	5.97E-01(5.96E-04)†	9.62E-01(1.48E-03)†	1.90E-01(3.97E-08)†	4.10E-01(9.57E-02)†	9.95E-01(1.07E-05)
	50	6.43E-01(4.24E-06)†	5.83E-01(2.65E-04)†	9.60E-01(1.38E-03)†	1.90E-01(5.43E-09)†	6.44E-01(1.68E-06)†	9.99E-01(3.68E-07)
	200	6.45E-01(8.18E-08)†	5.74E-01(1.74E-04)†	9.55E-01(1.43E-03)†	1.90E-01(8.66E-10)†	6.41E-01(1.26E-07)†	9.97E-01(1.46E-08)
WFG3	5	9.08E-01(7.42E-04)	8.82E-01(1.11E-03)†	8.65E-01(3.27E-04)†	4.90E-01(2.68E-04)†	8.80E-01(6.79E-04)†	9.20E-01(5.34E-04)
	25	9.90E-01(8.31E-06)‡	9.83E-01(1.28E-05)	9.86E-01(1.61E-05)‡	4.84E-01(1.99E-06)†	6.28E-01(2.25E-01)†	9.84E-01(1.70E-05)
	50	9.97E-01(5.92E-07)‡	9.92E-01(3.50E-06)†	9.93E-01(6.90E-06)	4.84E-01(5.11E-07)†	9.89E-01(8.65E-06)†	9.94E-01(2.92E-06)
	200	1.00E+00(1.19E-08)‡	9.98E-01(2.53E-07)†	9.96E-01(5.69E-06)†	4.85E-01(1.47E-08)†	9.99E-01(1.03E-07)†	1.00E+00(1.96E-08)
WFG4	5	8.58E-01(4.02E-04)†	9.56E-01(4.84E-05)†	9.72E-01(6.03E-05)†	8.24E-01(1.06E-04)†	8.63E-01(9.13E-04)†	9.92E-01(8.15E-06)
	25	8.16E-01(2.45E-06)†	8.72E-01(1.01E-03)†	9.90E-01(1.82E-04)†	7.57E-01(1.38E-04)†	5.25E-01(1.57E-01)†	9.99E-01(2.45E-07)
	50	8.16E-01(1.63E-07)†	8.41E-01(1.91E-04)†	9.62E-01(2.32E-04)†	7.40E-01(4.16E-05)†	8.15E-01(1.42E-06)†	1.00E+00(1.76E-10)
	200	8.17E-01(2.69E-08)†	8.29E-01(3.44E-05)†	9.90E-01(6.10E-05)†	7.33E-01(1.54E-05)†	8.16E-01(7.57E-07)†	1.00E+00(8.48E-11)
WFG5	5	8.56E-01(5.57E-04)†	9.60E-01(8.53E-05)†	9.40E-01(7.16E-05)†	9.15E-01(7.98E-04)†	9.34E-01(1.22E-03)†	9.79E-01(2.50E-05)
	25	8.08E-01(4.74E-06)†	7.98E-01(1.97E-04)†	9.36E-01(1.31E-04)†	7.83E-01(2.38E-06)†	5.20E-01(1.54E-01)†	9.91E-01(1.48E-06)
	50	8.07E-01(2.96E-06)†	7.86E-01(8.43E-05)†	9.53E-01(6.04E-05)†	7.82E-01(2.39E-06)†	8.09E-01(1.98E-05)†	9.92E-01(1.00E-06)
	200	8.08E-01(1.07E-06)†	7.89E-01(1.65E-04)†	9.73E-01(6.87E-05)†	7.83E-01(2.49E-05)†	8.11E-01(4.66E-07)†	9.92E-01(5.08E-07)
WFG6	5	8.77E-01(2.01E-04)†	9.28E-01(2.63E-04)†	9.54E-01(1.29E-04)†	4.45E-01(7.13E-05)†	8.94E-01(9.27E-04)†	9.83E-01(1.14E-04)
	25	8.22E-01(1.34E-05)†	8.60E-01(9.29E-05)†	9.62E-01(8.78E-04)†	4.33E-01(1.12E-05)†	5.31E-01(1.60E-01)†	9.97E-01(4.94E-05)
	50	8.19E-01(2.59E-06)†	8.40E-01(1.19E-05)†	9.69E-01(2.55E-04)†	4.32E-01(9.55E-06)†	8.16E-01(1.33E-05)†	9.99E-01(3.94E-06)
	200	8.18E-01(1.56E-06)†	8.23E-01(3.05E-06)†	9.91E-01(2.06E-05)†	4.31E-01(1.09E-05)†	8.16E-01(4.10E-07)†	9.99E-01(2.75E-06)
WFG7	5	9.20E-01(4.01E-04)†	9.05E-01(3.08E-03)†	9.70E-01(3.47E-05)†	9.18E-01(1.61E-04)†	9.18E-01(5.85E-04)†	9.89E-01(1.22E-04)
	25	8.19E-01(6.28E-06)†	9.73E-01(1.22E-04)†	9.68E-01(8.15E-04)†	9.07E-01(4.98E-04)†	5.34E-01(1.62E-01)†	9.99E-01(2.03E-05)
	50	8.17E-01(2.22E-07)†	8.77E-01(4.03E-04)†	9.73E-01(1.71E-04)†	9.08E-01(6.00E-04)†	8.16E-01(4.84E-06)†	9.98E-01(2.03E-05)
	200	8.16E-01(2.61E-09)†	8.28E-01(7.11E-06)†	9.94E-01(8.61E-06)†	9.01E-01(5.40E-04)†	8.16E-01(4.00E-08)†	1.00E+00(1.59E-06)
WFG8	5	9.21E-01(3.47E-04)†	9.13E-01(2.19E-04)†	9.70E-01(4.13E-05)†	9.15E-01(1.34E-04)†	9.23E-01(4.25E-04)†	9.84E-01(2.78E-04)
	25	8.19E-01(6.28E-06)†	9.73E-01(1.22E-04)†	9.68E-01(8.15E-04)†	9.10E-01(6.80E-04)†	5.34E-01(1.62E-01)†	9.99E-01(2.20E-06)
	50	8.17E-01(5.72E-07)†	8.88E-01(6.43E-04)†	9.74E-01(1.27E-04)†	9.10E-01(3.87E-04)†	8.16E-01(5.33E-06)†	9.98E-01(2.49E-05)
	200	8.16E-01(1.35E-10)†	8.29E-01(1.36E-05)†	9.92E-01(1.43E-05)†	9.08E-01(8.16E-04)†	8.16E-01(1.10E-07)†	1.00E+00(1.14E-06)
WFG9	5	9.05E-01(3.59E-04)†	8.69E-01(1.68E-03)†	9.56E-01(4.93E-04)‡	9.31E-01(5.06E-04)	9.07E-01(1.08E-03)†	9.27E-01(1.50E-03)
	25	8.19E-01(6.28E-06)†	9.73E-01(1.22E-04)	9.68E-01(8.15E-04)	9.11E-01(1.78E-03)†	5.65E-01(1.83E-01)†	9.53E-01(1.82E-03)
	50	8.59E-01(3.34E-03)†	9.06E-01(2.51E-03)†	9.60E-01(2.69E-04)	9.08E-01(2.37E-03)†	9.08E-01(1.68E-03)†	9.47E-01(1.79E-03)
	200	8.59E-01(3.53E-03)†	8.97E-01(4.79E-03)†	9.86E-01(3.79E-05)‡	8.97E-01(2.69E-03)	8.68E-01(5.52E-03)†	9.35E-01(1.58E-03)

TABLE 74
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 3 TO 4 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.00E+00(0.00E+00)‡	9.96E-01(4.50E-04)†	1.00E+00(1.13E-11)	9.98E-01(2.07E-05)†	1.00E+00(5.88E-10)‡	1.00E+00(2.11E-08)
	25	1.00E+00(0.00E+00)‡	8.09E-01(1.36E-04)†	1.00E+00(0.00E+00)‡	1.00E+00(4.19E-08)‡	6.45E-01(2.37E-01)†	9.95E-01(3.06E-04)
	50	1.00E+00(0.00E+00)‡	7.94E-01(5.69E-06)†	1.00E+00(1.86E-09)‡	1.00E+00(1.45E-10)	8.57E-01(8.71E-03)†	1.00E+00(2.90E-08)
	200	8.20E-01(4.72E-03)†	7.91E-01(2.35E-09)†	1.00E+00(1.27E-07)†	1.00E+00(2.94E-10)‡	7.97E-01(1.42E-03)†	1.00E+00(4.16E-10)
F2	5	9.15E-01(2.08E-03)†	9.92E-01(1.10E-04)	1.00E+00(1.21E-07)	9.85E-01(2.33E-03)	9.77E-01(6.20E-04)†	9.93E-01(2.67E-04)
	25	8.80E-01(7.67E-05)†	9.26E-01(1.30E-04)†	9.99E-01(4.95E-07)	9.85E-01(5.28E-04)	5.73E-01(1.87E-01)†	9.99E-01(3.72E-06)
	50	8.84E-01(8.51E-05)†	9.07E-01(9.56E-05)†	9.99E-01(1.26E-06)‡	9.77E-01(5.40E-04)†	8.82E-01(1.05E-04)†	9.97E-01(1.23E-04)
	200	8.82E-01(8.62E-05)†	8.81E-01(2.33E-05)†	9.99E-01(9.08E-07)†	9.38E-01(2.65E-04)†	8.74E-01(7.43E-05)†	9.99E-01(2.17E-06)
F3	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.78E-01(2.20E-03)†	1.00E+00(7.32E-10)	9.92E-01(2.19E-03)
	25	1.00E+00(0.00E+00)‡	9.47E-01(6.42E-04)†	1.00E+00(0.00E+00)‡	9.96E-01(5.78E-04)†	6.45E-01(2.37E-01)	9.97E-01(2.44E-04)
	50	1.00E+00(0.00E+00)‡	8.84E-01(6.31E-05)†	1.00E+00(0.00E+00)‡	9.91E-01(1.11E-03)†	9.52E-01(3.49E-03)†	1.00E+00(2.96E-11)
	200	8.79E-01(1.31E-03)†	8.67E-01(4.60E-07)†	9.97E-01(2.92E-06)†	9.94E-01(5.87E-04)†	8.76E-01(9.00E-04)†	1.00E+00(1.72E-12)
F4	5	9.84E-01(1.40E-03)‡	8.68E-01(1.73E-04)‡	9.38E-01(3.59E-03)‡	8.75E-01(5.91E-03)‡	8.76E-01(1.05E-03)‡	8.13E-01(6.96E-03)
	25	7.24E-01(2.24E-03)	8.52E-01(1.95E-03)‡	9.03E-01(5.36E-03)‡	8.16E-01(5.39E-03)‡	5.59E-01(1.77E-01)	7.84E-01(6.52E-03)
	50	8.66E-01(3.54E-08)‡	8.56E-01(1.58E-03)‡	9.38E-01(3.63E-03)‡	8.46E-01(2.70E-03)‡	8.66E-01(1.90E-12)‡	7.73E-01(6.20E-03)
	200	8.66E-01(1.15E-31)‡	8.66E-01(1.15E-31)‡	9.32E-01(3.47E-03)‡	8.66E-01(1.15E-31)‡	8.66E-01(1.15E-31)‡	7.63E-01(5.95E-03)
WFG1	5	7.61E-01(8.53E-04)†	8.18E-01(1.61E-03)	7.05E-01(5.79E-04)†	4.95E-01(5.59E-04)†	7.19E-01(1.19E-03)†	8.35E-01(2.22E-03)
	25	6.69E-01(7.43E-04)†	6.56E-01(2.47E-03)†	7.64E-01(1.13E-03)†	5.52E-01(2.09E-05)†	4.24E-01(1.02E-01)†	9.41E-01(9.77E-04)
	50	7.16E-01(2.80E-04)†	5.66E-01(6.62E-04)†	8.36E-01(5.94E-04)†	5.54E-01(2.20E-05)†	6.99E-01(9.35E-04)†	9.90E-01(2.82E-05)
	200	7.79E-01(2.28E-05)†	5.34E-01(1.18E-04)†	8.78E-01(2.21E-04)†	5.52E-01(2.00E-05)†	7.85E-01(1.08E-05)†	9.96E-01(8.46E-06)
WFG2	5	6.36E-01(1.25E-03)†	6.49E-01(1.99E-03)†	8.24E-01(2.30E-03)†	1.79E-01(1.79E-05)†	7.52E-01(1.16E-03)†	9.81E-01(1.23E-04)
	25	7.28E-01(1.14E-04)†	5.19E-01(1.17E-04)†	8.54E-01(2.36E-03)†	1.96E-01(4.25E-05)†	4.75E-01(1.28E-01)†	9.95E-01(7.95E-06)
	50	7.44E-01(1.03E-05)†	5.17E-01(9.96E-05)†	8.49E-01(2.17E-03)†	1.95E-01(2.13E-05)†	7.46E-01(5.31E-06)†	9.95E-01(3.28E-06)
	200	7.49E-01(7.10E-07)†	5.17E-01(1.47E-05)†	8.55E-01(1.14E-03)†	1.93E-01(3.62E-06)†	7.40E-01(2.96E-07)†	9.87E-01(6.06E-07)
WFG3	5	9.25E-01(4.27E-04)	8.55E-01(1.56E-03)†	8.85E-01(4.84E-04)†	4.71E-01(4.79E-04)†	8.66E-01(8.41E-04)†	9.28E-01(1.14E-03)
	25	9.95E-01(4.15E-06)‡	9.77E-01(4.00E-05)†	9.87E-01(1.90E-05)†	5.00E-01(3.73E-06)†	6.30E-01(2.25E-01)†	9.90E-01(8.43E-06)
	50	9.98E-01(4.60E-07)‡	9.88E-01(1.11E-05)†	9.91E-01(1.37E-05)†	4.97E-01(6.58E-07)†	9.90E-01(6.25E-06)†	9.97E-01(2.51E-06)
	200	1.00E+00(4.87E-09)‡	9.97E-01(4.71E-07)†	9.94E-01(1.03E-05)†	4.96E-01(2.12E-08)†	9.99E-01(9.48E-08)†	1.00E+00(3.78E-08)
WFG4	5	8.42E-01(5.50E-04)†	9.70E-01(2.58E-05)†	9.35E-01(6.27E-04)†	8.44E-01(1.58E-04)†	9.41E-01(1.42E-03)†	9.97E-01(8.37E-07)
	25	8.76E-01(1.65E-05)†	9.83E-01(1.39E-04)†	9.69E-01(5.54E-04)†	8.49E-01(8.13E-05)†	5.63E-01(1.80E-01)†	1.00E+00(1.73E-09)
	50	8.77E-01(1.99E-05)†	9.78E-01(4.49E-04)†	9.59E-01(8.47E-04)†	8.43E-01(1.36E-04)†	8.68E-01(1.80E-06)†	1.00E+00(1.54E-10)
	200	8.76E-01(6.90E-06)†	9.35E-01(6.04E-04)†	9.60E-01(6.77E-04)†	8.10E-01(6.29E-05)†	8.66E-01(5.76E-07)†	1.00E+00(1.24E-11)
WFG5	5	8.76E-01(2.18E-04)†	9.76E-01(9.70E-06)†	9.69E-01(2.84E-05)†	8.68E-01(4.25E-04)†	9.70E-01(6.87E-04)†	9.87E-01(1.16E-05)
	25	8.73E-01(7.10E-05)†	9.64E-01(8.04E-04)†	9.81E-01(5.58E-06)†	8.39E-01(1.25E-04)†	5.58E-01(1.77E-01)†	9.89E-01(1.49E-05)
	50	8.75E-01(1.90E-04)†	9.31E-01(9.66E-04)†	9.83E-01(3.27E-06)†	8.34E-01(1.56E-05)†	8.62E-01(1.08E-06)†	9.90E-01(9.37E-06)
	200	8.68E-01(3.18E-05)†	8.90E-01(5.09E-04)†	9.84E-01(5.08E-06)†	8.25E-01(6.01E-05)†	8.62E-01(5.30E-10)†	9.91E-01(2.80E-06)
WFG6	5	8.32E-01(3.85E-04)†	9.55E-01(4.86E-05)†	9.55E-01(1.37E-04)†	3.97E-01(6.58E-05)†	9.64E-01(1.37E-04)†	9.92E-01(1.16E-05)
	25	8.67E-01(1.04E-04)†	9.65E-01(2.06E-04)†	9.88E-01(5.85E-05)†	4.00E-01(2.11E-06)†	5.61E-01(1.79E-01)†	9.99E-01(4.53E-08)
	50	8.73E-01(3.52E-05)†	9.47E-01(2.49E-04)†	9.91E-01(4.68E-05)†	3.99E-01(2.65E-07)†	8.67E-01(7.06E-06)†	1.00E+00(2.52E-08)
	200	8.72E-01(2.06E-05)†	9.25E-01(1.76E-04)†	9.95E-01(1.70E-05)†	3.98E-01(1.44E-07)†	8.66E-01(8.10E-10)†	1.00E+00(6.58E-09)
WFG7	5	9.09E-01(6.49E-04)†	9.38E-01(9.35E-04)†	9.76E-01(7.96E-05)†	9.45E-01(9.79E-05)†	9.50E-01(6.89E-04)†	9.97E-01(3.28E-05)
	25	8.80E-01(1.97E-04)†	9.84E-01(2.08E-05)†	9.95E-01(3.59E-05)†	9.51E-01(1.37E-04)†	5.62E-01(1.80E-01)†	1.00E+00(3.41E-08)
	50	8.82E-01(2.02E-04)†	9.91E-01(1.02E-05)†	9.97E-01(1.01E-05)†	9.26E-01(8.42E-05)†	8.67E-01(2.89E-06)†	1.00E+00(1.47E-07)
	200	8.79E-01(1.79E-04)†	9.71E-01(4.38E-04)†	9.98E-01(5.72E-06)†	9.18E-01(8.55E-05)†	8.66E-01(4.80E-13)†	1.00E+00(0.00E+00)
WFG8	5	9.10E-01(5.14E-04)†	9.40E-01(7.99E-04)†	9.78E-01(4.24E-05)†	9.35E-01(8.54E-05)†	9.40E-01(9.69E-04)†	9.95E-01(3.45E-05)
	25	8.80E-01(1.97E-04)†	9.84E-01(2.08E-05)†	9.95E-01(3.59E-05)†	9.48E-01(2.08E-04)†	5.61E-01(1.79E-01)†	1.00E+00(1.78E-08)
	50	8.80E-01(2.01E-04)†	9.92E-01(3.62E-06)†	9.97E-01(2.99E-05)†	9.28E-01(1.38E-04)†	8.67E-01(4.35E-06)†	1.00E+00(1.13E-07)
	200	8.80E-01(2.27E-04)†	9.71E-01(3.03E-04)†	9.95E-01(9.18E-05)†	9.20E-01(1.13E-04)†	8.66E-01(1.94E-07)†	1.00E+00(1.30E-07)
WFG9	5	9.06E-01(4.48E-04)†	9.04E-01(1.11E-03)†	9.73E-01(1.29E-04)‡	9.64E-01(4.29E-05)‡	9.22E-01(1.06E-03)	9.36E-01(1.16E-03)
	25	8.80E-01(1.97E-04)†	9.84E-01(2.08E-05)	9.95E-01(3.59E-05)‡	9.17E-01(5.63E-04)†	5.90E-01(1.99E-01)†	9.51E-01(2.22E-03)
	50	9.01E-01(9.06E-04)†	9.57E-01(8.29E-04)	9.87E-01(3.95E-04)	9.27E-01(1.18E-03)†	8.93E-01(4.54E-03)†	9.49E-01(1.73E-03)
	200	9.19E-01(1.54E-03)†	9.40E-01(6.45E-04)	9.95E-01(1.59E-05)‡	9.17E-01(1.43E-03)†	8.52E-01(4.34E-03)†	9.39E-01(1.41E-03)

TABLE 75
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 4 TO 5 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.00E+00(0.00E+00)‡	9.94E-01(4.62E-04)	1.00E+00(0.00E+00)‡	9.89E-01(8.78E-04)‡	1.00E+00(2.08E-10)	9.68E-01(3.23E-02)
	25	1.00E+00(0.00E+00)‡	8.46E-01(1.09E-04)†	1.00E+00(0.00E+00)‡	9.93E-01(6.43E-04)	6.39E-01(2.33E-01)	9.82E-01(1.24E-03)
	50	9.93E-01(4.68E-04)†	8.42E-01(2.51E-05)†	1.00E+00(1.03E-10)‡	9.76E-01(1.76E-03)†	9.08E-01(5.98E-03)†	1.00E+00(2.13E-07)
	200	9.63E-01(3.32E-03)	8.37E-01(4.76E-08)†	1.00E+00(9.18E-11)‡	9.87E-01(1.06E-03)†	8.48E-01(1.65E-03)†	1.00E+00(6.65E-10)
F2	5	8.80E-01(1.54E-03)†	9.90E-01(2.14E-04)	9.94E-01(1.64E-04)	9.58E-01(5.51E-03)	9.83E-01(5.55E-04)	9.91E-01(2.99E-04)
	25	9.04E-01(1.77E-04)†	9.59E-01(2.14E-04)†	9.93E-01(1.68E-04)	7.19E-01(3.69E-02)†	5.94E-01(2.01E-01)†	9.96E-01(6.94E-05)
	50	9.32E-01(2.41E-04)†	9.40E-01(8.55E-05)†	9.95E-01(1.40E-04)	1.62E-01(3.13E-02)†	9.12E-01(5.75E-05)†	9.95E-01(1.14E-04)
	200	9.51E-01(3.62E-04)†	9.13E-01(2.41E-05)†	9.96E-01(7.49E-05)†	7.71E-06(3.98E-13)†	9.03E-01(2.40E-05)†	1.00E+00(5.98E-07)
F3	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.54E-01(2.62E-03)†	1.00E+00(7.70E-11)	9.64E-01(3.23E-02)
	25	1.00E+00(0.00E+00)‡	9.60E-01(4.51E-04)†	1.00E+00(0.00E+00)‡	9.25E-01(6.46E-03)†	6.45E-01(2.37E-01)	9.97E-01(2.22E-04)
	50	9.85E-01(9.60E-04)	9.18E-01(1.19E-04)†	1.00E+00(2.70E-08)	8.42E-01(5.83E-03)†	9.35E-01(2.42E-03)†	1.00E+00(2.00E-07)
	200	9.75E-01(1.52E-03)†	8.96E-01(2.30E-06)†	9.99E-01(1.24E-06)†	4.50E-01(6.98E-02)†	9.03E-01(5.71E-04)†	1.00E+00(1.57E-13)
F4	5	9.48E-01(1.97E-03)‡	8.38E-01(3.55E-03)‡	9.16E-01(4.85E-03)‡	8.97E-01(2.63E-03)‡	8.89E-01(5.53E-04)‡	7.61E-01(8.02E-03)
	25	8.44E-01(2.46E-03)‡	8.59E-01(3.02E-03)‡	9.44E-01(2.96E-03)‡	8.87E-01(8.96E-04)‡	5.77E-01(1.89E-01)	7.49E-01(5.96E-03)
	50	8.94E-01(5.09E-32)‡	8.91E-01(4.63E-04)‡	9.58E-01(1.82E-03)‡	8.94E-01(5.09E-32)‡	8.94E-01(5.09E-32)‡	7.41E-01(4.66E-03)
	200	8.94E-01(3.23E-14)‡	8.94E-01(5.09E-32)‡	9.57E-01(2.24E-03)‡	8.94E-01(5.09E-32)‡	8.94E-01(5.09E-32)‡	7.43E-01(9.86E-03)
WFG1	5	7.05E-01(1.89E-03)†	6.99E-01(2.96E-03)†	6.57E-01(4.95E-04)†	4.28E-01(1.70E-03)†	6.58E-01(2.07E-03)†	7.96E-01(4.43E-03)
	25	6.68E-01(6.79E-04)†	5.16E-01(9.03E-04)†	7.41E-01(4.49E-04)†	4.77E-01(5.73E-04)†	4.14E-01(9.78E-02)†	9.01E-01(4.29E-04)
	50	7.40E-01(2.70E-04)†	4.57E-01(6.10E-04)†	8.23E-01(1.44E-04)†	4.87E-01(3.65E-04)†	7.35E-01(5.93E-04)†	9.30E-01(1.10E-04)
	200	8.16E-01(2.63E-05)†	4.45E-01(6.22E-05)†	8.91E-01(1.64E-04)†	4.93E-01(5.74E-05)†	8.26E-01(3.14E-05)†	9.37E-01(6.23E-05)
WFG2	5	6.12E-01(5.03E-04)†	5.17E-01(1.53E-03)†	7.34E-01(1.39E-03)†	1.67E-01(3.89E-05)†	7.25E-01(9.58E-04)†	9.69E-01(8.09E-04)
	25	7.65E-01(2.01E-04)†	4.31E-01(6.59E-05)†	8.18E-01(9.23E-04)†	1.78E-01(1.58E-05)†	5.04E-01(1.45E-01)†	9.93E-01(1.76E-05)
	50	7.96E-01(1.98E-05)†	4.31E-01(8.69E-05)†	8.26E-01(3.70E-04)†	1.75E-01(3.83E-06)†	7.98E-01(8.95E-06)†	9.90E-01(8.18E-06)
	200	8.04E-01(1.14E-06)†	4.31E-01(6.37E-05)†	8.42E-01(5.30E-04)†	1.75E-01(6.98E-06)†	7.90E-01(9.14E-07)†	9.77E-01(2.26E-06)
WFG3	5	9.32E-01(4.29E-04)	8.01E-01(2.61E-03)†	7.96E-01(2.06E-03)†	4.72E-01(6.88E-05)†	8.29E-01(1.37E-03)†	9.23E-01(1.20E-03)
	25	9.96E-01(2.01E-06)‡	9.57E-01(1.34E-04)†	9.81E-01(8.09E-05)	4.74E-01(1.30E-05)†	6.24E-01(2.21E-01)†	9.86E-01(2.28E-05)
	50	9.99E-01(3.59E-07)‡	9.79E-01(5.04E-05)†	9.87E-01(8.90E-05)†	4.75E-01(1.93E-05)†	9.86E-01(1.27E-05)†	9.95E-01(9.44E-06)
	200	1.00E+00(8.54E-09)‡	9.95E-01(1.25E-06)†	9.87E-01(1.11E-04)†	4.79E-01(3.11E-05)†	9.99E-01(2.74E-07)†	9.99E-01(2.23E-07)
WFG4	5	8.21E-01(6.88E-04)†	9.77E-01(9.37E-06)†	9.26E-01(5.76E-04)†	8.54E-01(3.22E-04)†	9.36E-01(5.98E-04)†	9.98E-01(2.24E-07)
	25	9.10E-01(1.39E-04)†	9.88E-01(2.64E-05)†	9.38E-01(2.85E-04)†	8.70E-01(2.76E-06)†	5.81E-01(1.92E-01)†	9.99E-01(6.83E-06)
	50	9.15E-01(1.83E-04)†	9.91E-01(2.76E-06)†	9.39E-01(3.65E-04)†	8.72E-01(3.31E-06)†	8.97E-01(3.71E-06)†	1.00E+00(2.81E-06)
	200	9.14E-01(1.14E-04)†	9.89E-01(2.09E-04)†	9.28E-01(3.46E-04)†	8.71E-01(7.00E-06)†	8.95E-01(6.53E-08)†	1.00E+00(2.62E-06)
WFG5	5	8.73E-01(1.58E-03)†	9.80E-01(1.12E-05)†	9.72E-01(6.99E-05)†	8.05E-01(2.30E-04)†	9.65E-01(3.97E-04)†	9.87E-01(2.83E-05)
	25	9.10E-01(1.34E-04)†	9.66E-01(6.67E-04)†	9.83E-01(1.06E-05)†	8.07E-01(4.16E-05)†	5.80E-01(1.91E-01)†	9.87E-01(8.58E-06)
	50	9.13E-01(1.91E-04)†	9.56E-01(5.81E-04)†	9.81E-01(7.64E-05)†	8.00E-01(4.41E-05)†	8.92E-01(1.64E-05)†	9.89E-01(7.97E-06)
	200	9.12E-01(1.99E-04)†	9.29E-01(7.49E-04)†	9.83E-01(3.20E-05)†	7.89E-01(3.80E-05)†	8.90E-01(1.81E-08)†	9.90E-01(8.92E-06)
WFG6	5	7.97E-01(4.50E-04)†	9.65E-01(4.28E-05)†	9.54E-01(2.55E-04)†	3.59E-01(2.48E-05)†	9.59E-01(3.72E-04)†	9.92E-01(7.00E-05)
	25	8.97E-01(2.52E-04)†	9.86E-01(8.59E-05)†	9.77E-01(1.14E-04)†	3.59E-01(1.03E-06)†	5.80E-01(1.91E-01)†	9.99E-01(3.15E-07)
	50	9.14E-01(7.08E-05)†	9.82E-01(1.25E-04)†	9.79E-01(2.06E-04)†	3.58E-01(1.43E-07)†	8.95E-01(1.88E-06)†	1.00E+00(7.18E-09)
	200	9.09E-01(1.21E-04)†	9.63E-01(2.22E-04)†	9.77E-01(1.15E-04)†	3.58E-01(5.56E-08)†	8.94E-01(4.59E-10)†	1.00E+00(6.46E-09)
WFG7	5	9.34E-01(2.97E-04)†	9.58E-01(4.40E-04)†	9.84E-01(1.22E-04)†	9.56E-01(1.04E-04)†	9.51E-01(4.61E-04)†	9.96E-01(6.69E-05)
	25	9.26E-01(3.13E-04)†	9.87E-01(2.08E-05)†	9.94E-01(7.19E-05)†	9.57E-01(1.96E-04)†	5.79E-01(1.90E-01)†	1.00E+00(2.89E-09)
	50	9.23E-01(2.47E-04)†	9.93E-01(4.45E-06)†	9.94E-01(9.39E-05)†	9.35E-01(1.20E-04)†	8.95E-01(9.15E-06)†	1.00E+00(2.74E-12)
	200	9.28E-01(3.57E-04)†	9.98E-01(8.49E-07)†	9.94E-01(7.24E-05)†	9.22E-01(1.76E-04)†	8.94E-01(3.42E-08)†	1.00E+00(0.00E+00)
WFG8	5	9.45E-01(5.79E-04)†	9.57E-01(3.74E-04)†	9.84E-01(1.26E-04)†	9.51E-01(6.86E-05)†	9.54E-01(3.82E-04)†	9.95E-01(6.85E-05)
	25	9.26E-01(3.13E-04)†	9.87E-01(2.08E-05)†	9.94E-01(7.19E-05)†	9.62E-01(1.75E-04)†	5.78E-01(1.90E-01)†	1.00E+00(3.51E-06)
	50	9.26E-01(2.11E-04)†	9.93E-01(4.19E-06)†	9.93E-01(1.01E-04)†	9.36E-01(1.70E-04)†	8.95E-01(1.96E-06)†	1.00E+00(7.67E-07)
	200	9.28E-01(1.66E-04)†	9.98E-01(2.72E-07)†	9.93E-01(8.29E-05)†	9.20E-01(2.71E-04)†	8.94E-01(6.24E-14)†	1.00E+00(0.00E+00)
WFG9	5	9.38E-01(3.97E-04)	9.15E-01(1.62E-03)†	9.80E-01(1.51E-04)‡	9.69E-01(6.58E-05)‡	9.23E-01(8.17E-04)	9.36E-01(1.36E-03)
	25	9.26E-01(3.13E-04)†	9.87E-01(2.08E-05)	9.94E-01(7.19E-05)‡	9.54E-01(3.67E-04)	5.90E-01(2.00E-01)†	9.56E-01(1.40E-03)
	50	9.47E-01(3.15E-04)	9.72E-01(8.03E-04)	9.83E-01(4.28E-04)‡	9.47E-01(6.25E-04)	8.87E-01(3.54E-03)†	9.48E-01(1.45E-03)
	200	9.48E-01(2.81E-04)‡	9.62E-01(6.02E-04)‡	9.90E-01(9.47E-05)‡	9.40E-01(9.28E-04)	8.64E-01(2.50E-03)†	9.36E-01(1.82E-03)

TABLE 76
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 5 TO 6 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.00E+00(0.00E+00)‡	9.84E-01(1.00E-03)	1.00E+00(0.00E+00)‡	9.62E-01(3.38E-03)†	1.00E+00(6.66E-11)	9.64E-01(3.23E-02)
	25	9.96E-01(3.93E-04)‡	8.44E-01(1.78E-04)†	1.00E+00(0.00E+00)‡	9.86E-01(1.05E-03)†	5.88E-01(2.00E-01)†	9.87E-01(9.03E-04)
	50	9.95E-01(7.44E-04)†	8.70E-01(4.24E-05)†	1.00E+00(1.65E-12)‡	9.81E-01(1.15E-03)†	8.99E-01(3.25E-03)†	9.98E-01(1.09E-04)
	200	1.00E+00(0.00E+00)‡	8.67E-01(2.31E-07)†	1.00E+00(0.00E+00)‡	9.83E-01(1.20E-03)†	8.89E-01(2.06E-03)†	9.99E-01(1.68E-05)
F2	5	8.56E-01(1.20E-03)†	9.90E-01(1.57E-04)	9.70E-01(4.33E-04)†	9.33E-01(6.32E-03)†	9.77E-01(6.53E-04)†	9.92E-01(1.67E-04)
	25	9.31E-01(1.70E-04)†	9.79E-01(1.66E-04)†	9.95E-01(6.94E-05)	7.05E-01(3.78E-03)†	6.04E-01(2.07E-01)†	9.91E-01(2.53E-04)
	50	9.80E-01(2.35E-04)†	9.64E-01(1.56E-04)†	9.99E-01(1.44E-05)‡	5.55E-01(1.11E-02)†	9.26E-01(2.50E-05)†	9.92E-01(8.13E-05)
	200	9.99E-01(5.70E-06)‡	9.35E-01(4.45E-05)†	1.00E+00(5.11E-06)‡	5.30E-02(5.02E-04)†	9.19E-01(2.64E-05)†	9.95E-01(8.40E-05)
F3	5	1.00E+00(0.00E+00)‡	9.99E-01(1.30E-05)‡	1.00E+00(0.00E+00)‡	9.27E-01(2.67E-03)‡	1.00E+00(2.56E-12)	8.71E-01(1.16E-01)
	25	1.00E+00(0.00E+00)‡	9.62E-01(4.35E-04)†	1.00E+00(0.00E+00)‡	8.94E-01(6.85E-03)†	6.35E-01(2.30E-01)†	9.87E-01(5.72E-04)
	50	9.85E-01(7.64E-04)	9.45E-01(2.46E-04)†	1.00E+00(1.77E-07)	8.03E-01(1.02E-02)†	9.41E-01(1.36E-03)†	1.00E+00(1.29E-06)
	200	1.00E+00(0.00E+00)‡	9.18E-01(2.15E-05)†	1.00E+00(0.00E+00)‡	7.29E-01(2.77E-03)†	9.30E-01(1.05E-03)†	1.00E+00(4.86E-06)
F4	5	9.49E-01(2.44E-03)‡	8.17E-01(3.43E-03)‡	9.31E-01(1.73E-03)‡	9.23E-01(1.15E-03)‡	9.09E-01(4.58E-04)‡	7.43E-01(6.12E-03)
	25	9.05E-01(4.52E-04)‡	8.94E-01(1.50E-03)‡	9.55E-01(1.23E-03)‡	9.27E-01(9.09E-04)‡	5.89E-01(1.97E-01)†	7.19E-01(4.30E-03)
	50	9.21E-01(5.54E-04)‡	9.10E-01(3.00E-04)‡	9.66E-01(1.40E-03)‡	9.15E-01(5.16E-04)‡	9.13E-01(4.59E-31)‡	7.20E-01(3.29E-03)
	200	9.46E-01(1.66E-03)‡	9.13E-01(4.59E-31)‡	9.79E-01(1.26E-03)‡	9.18E-01(3.53E-04)‡	9.13E-01(4.59E-31)‡	7.37E-01(1.02E-02)
WFG1	5	6.53E-01(2.06E-03)†	5.32E-01(3.07E-03)†	6.33E-01(3.24E-04)†	3.93E-01(9.69E-04)†	6.08E-01(2.28E-03)†	7.57E-01(2.48E-03)
	25	6.60E-01(3.77E-04)†	4.12E-01(1.04E-03)†	7.27E-01(2.98E-04)†	4.36E-01(5.32E-04)†	4.10E-01(9.59E-02)†	8.54E-01(6.38E-04)
	50	7.50E-01(2.70E-04)†	3.70E-01(3.53E-04)†	8.10E-01(2.77E-04)†	4.47E-01(3.28E-04)†	7.41E-01(4.23E-04)†	9.19E-01(2.32E-04)
	200	8.44E-01(6.14E-05)†	3.68E-01(6.09E-05)†	8.89E-01(9.91E-05)†	4.50E-01(4.65E-05)†	8.44E-01(4.67E-05)†	9.31E-01(1.16E-04)
WFG2	5	5.98E-01(4.77E-04)†	4.32E-01(1.75E-03)†	6.58E-01(7.63E-04)†	1.63E-01(3.22E-05)†	6.84E-01(8.01E-04)†	9.50E-01(1.70E-03)
	25	7.86E-01(2.17E-04)†	3.50E-01(9.25E-05)†	8.11E-01(2.09E-04)†	1.67E-01(1.34E-05)†	5.15E-01(1.51E-01)†	9.83E-01(3.86E-04)
	50	8.24E-01(4.59E-05)†	3.51E-01(5.69E-05)†	8.31E-01(5.68E-05)†	1.67E-01(1.08E-05)†	8.28E-01(1.56E-05)†	9.79E-01(2.30E-04)
	200	8.39E-01(2.24E-06)†	3.55E-01(3.58E-05)†	8.43E-01(9.07E-05)†	1.66E-01(1.46E-05)†	8.18E-01(1.63E-06)†	9.67E-01(3.09E-04)
WFG3	5	9.42E-01(3.50E-04)‡	7.59E-01(1.40E-03)†	7.47E-01(1.77E-03)†	4.55E-01(4.49E-05)†	8.10E-01(2.31E-03)†	8.98E-01(2.75E-03)
	25	9.95E-01(3.31E-06)‡	9.39E-01(3.53E-04)†	9.70E-01(1.31E-04)†	4.45E-01(4.58E-05)†	6.18E-01(2.17E-01)†	9.78E-01(1.47E-04)
	50	9.98E-01(7.63E-07)‡	9.66E-01(9.07E-05)†	9.77E-01(1.54E-04)†	4.43E-01(2.30E-05)†	9.82E-01(3.39E-05)†	9.91E-01(2.92E-05)
	200	1.00E+00(1.87E-08)‡	9.93E-01(4.62E-06)†	9.83E-01(1.26E-04)†	4.46E-01(3.31E-06)†	9.97E-01(1.07E-06)†	9.99E-01(3.74E-07)
WFG4	5	8.12E-01(7.60E-04)†	9.72E-01(2.23E-04)†	9.11E-01(3.58E-04)†	8.65E-01(7.87E-05)†	9.23E-01(5.47E-04)†	9.96E-01(2.06E-04)
	25	9.36E-01(2.03E-04)†	9.88E-01(8.39E-05)†	9.55E-01(2.90E-04)†	8.64E-01(3.95E-06)†	5.93E-01(2.00E-01)†	1.00E+00(2.86E-10)
	50	9.41E-01(3.20E-04)†	9.93E-01(2.19E-05)†	9.55E-01(4.86E-04)†	8.64E-01(1.95E-06)†	9.15E-01(4.07E-06)†	1.00E+00(3.17E-06)
	200	9.51E-01(3.03E-04)†	9.97E-01(2.49E-06)†	9.37E-01(1.95E-04)†	8.63E-01(3.86E-06)†	9.13E-01(1.05E-08)†	1.00E+00(1.49E-12)
WFG5	5	8.65E-01(1.05E-03)†	9.82E-01(2.60E-05)	9.70E-01(7.99E-05)†	7.39E-01(5.41E-05)†	9.71E-01(1.40E-04)†	9.85E-01(4.37E-05)
	25	9.33E-01(1.88E-04)†	9.68E-01(2.69E-04)†	9.72E-01(1.84E-04)†	7.39E-01(3.66E-05)†	5.96E-01(2.02E-01)†	9.84E-01(2.49E-05)
	50	9.46E-01(3.67E-04)†	9.65E-01(4.26E-04)†	9.75E-01(7.81E-05)†	7.39E-01(6.92E-05)†	9.18E-01(1.60E-04)†	9.86E-01(3.61E-05)
	200	9.48E-01(2.75E-04)†	9.53E-01(4.01E-04)†	9.70E-01(2.29E-04)†	7.31E-01(5.13E-05)†	9.08E-01(8.95E-07)†	9.87E-01(2.26E-05)
WFG6	5	7.82E-01(3.73E-04)†	9.50E-01(5.73E-04)†	9.51E-01(2.54E-04)†	3.29E-01(4.98E-06)†	9.62E-01(2.11E-04)†	9.94E-01(4.22E-05)
	25	9.18E-01(1.33E-04)†	9.77E-01(2.84E-04)†	9.66E-01(1.94E-04)†	3.27E-01(1.11E-06)†	5.91E-01(1.99E-01)†	9.97E-01(2.33E-05)
	50	9.40E-01(1.21E-04)†	9.86E-01(1.46E-04)†	9.67E-01(1.78E-04)†	3.27E-01(8.46E-08)†	9.13E-01(1.10E-06)†	9.98E-01(2.06E-05)
	200	9.37E-01(7.16E-05)†	9.90E-01(1.03E-04)†	9.73E-01(2.53E-04)†	3.26E-01(1.88E-08)†	9.13E-01(1.72E-09)†	9.98E-01(2.51E-05)
WFG7	5	9.67E-01(3.40E-04)†	9.26E-01(1.70E-03)†	9.85E-01(1.18E-04)†	9.66E-01(6.87E-05)†	9.68E-01(2.83E-04)†	9.98E-01(2.36E-05)
	25	9.58E-01(2.04E-04)†	9.86E-01(1.30E-04)†	9.92E-01(7.94E-05)†	9.75E-01(1.54E-04)†	5.92E-01(1.99E-01)†	1.00E+00(2.71E-07)
	50	9.52E-01(1.11E-04)†	9.95E-01(1.75E-05)†	9.91E-01(8.04E-05)†	9.52E-01(1.59E-04)†	9.14E-01(6.66E-06)†	1.00E+00(3.15E-06)
	200	9.51E-01(1.13E-04)†	9.99E-01(7.88E-08)†	9.89E-01(9.25E-05)†	9.39E-01(2.59E-04)†	9.13E-01(4.59E-31)†	1.00E+00(0.00E+00)
WFG8	5	9.62E-01(4.13E-04)†	9.43E-01(8.41E-04)†	9.84E-01(1.38E-04)†	9.61E-01(8.68E-05)†	9.65E-01(3.88E-04)†	9.96E-01(4.23E-05)
	25	9.58E-01(2.04E-04)†	9.86E-01(1.30E-04)†	9.92E-01(7.94E-05)†	9.71E-01(2.03E-04)†	5.93E-01(2.00E-01)†	1.00E+00(3.88E-06)
	50	9.54E-01(9.37E-05)†	9.95E-01(5.99E-06)†	9.92E-01(4.75E-05)†	9.55E-01(2.36E-04)†	9.13E-01(8.76E-07)†	1.00E+00(2.48E-12)
	200	9.52E-01(1.00E-04)†	9.99E-01(1.17E-07)†	9.92E-01(8.73E-05)†	9.42E-01(3.06E-04)†	9.13E-01(4.59E-31)†	1.00E+00(0.00E+00)
WFG9	5	9.54E-01(2.49E-04)‡	8.96E-01(2.27E-03)†	9.79E-01(2.87E-04)‡	9.77E-01(6.33E-05)‡	9.24E-01(1.46E-03)	9.34E-01(1.34E-03)
	25	9.58E-01(2.04E-04)	9.86E-01(1.30E-04)	9.92E-01(7.94E-05)‡	9.67E-01(3.32E-04)	5.87E-01(1.98E-01)†	9.54E-01(1.54E-03)
	50	9.63E-01(1.27E-04)	9.76E-01(8.18E-04)	9.81E-01(3.03E-04)	9.52E-01(2.74E-04)	8.92E-01(2.33E-03)†	9.49E-01(1.54E-03)
	200	9.68E-01(1.39E-04)‡	9.75E-01(4.73E-04)‡	9.82E-01(1.57E-04)‡	9.47E-01(3.28E-04)‡	8.77E-01(1.69E-03)†	9.35E-01(1.67E-03)

TABLE 77
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 6 TO 7 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.00E+00(0.00E+00)‡	8.33E-01(6.26E-03)‡	1.00E+00(2.90E-13)‡	9.62E-01(1.74E-03)‡	1.00E+00(4.72E-12)‡	7.73E-01(1.80E-01)
	25	1.00E+00(0.00E+00)‡	8.49E-01(4.02E-04)†	1.00E+00(0.00E+00)‡	9.99E-01(1.80E-05)	5.69E-01(1.87E-01)†	9.57E-01(3.22E-02)
	50	1.00E+00(0.00E+00)‡	8.82E-01(6.19E-05)†	1.00E+00(0.00E+00)‡	9.93E-01(2.99E-04)†	9.00E-01(1.74E-03)†	9.97E-01(1.05E-04)
	200	1.00E+00(0.00E+00)‡	8.87E-01(1.08E-06)†	1.00E+00(6.98E-12)‡	9.90E-01(6.05E-04)	9.21E-01(2.68E-03)†	1.00E+00(1.44E-07)
F2	5	8.45E-01(1.29E-03)†	9.88E-01(1.01E-04)	9.66E-01(4.45E-04)†	9.42E-01(2.74E-03)†	9.71E-01(3.27E-04)†	9.89E-01(2.86E-04)
	25	9.77E-01(3.18E-04)†	9.79E-01(8.65E-05)†	9.99E-01(7.47E-06)‡	7.17E-01(3.00E-03)†	6.10E-01(2.11E-01)†	9.93E-01(9.37E-05)
	50	9.96E-01(1.01E-04)	9.69E-01(9.84E-05)†	9.97E-01(7.15E-05)	5.95E-01(7.13E-03)†	9.35E-01(4.94E-05)†	9.95E-01(1.21E-04)
	200	9.96E-01(1.52E-04)†	9.43E-01(5.64E-05)†	9.97E-01(4.59E-05)	3.65E-01(4.41E-03)†	9.33E-01(2.80E-05)†	9.96E-01(6.75E-05)
F3	5	1.00E+00(0.00E+00)‡	9.61E-01(2.01E-03)	1.00E+00(0.00E+00)‡	9.21E-01(4.13E-03)‡	1.00E+00(1.57E-13)‡	7.10E-01(2.13E-01)
	25	1.00E+00(0.00E+00)‡	9.52E-01(2.91E-04)‡	1.00E+00(0.00E+00)‡	8.47E-01(8.66E-03)‡	6.19E-01(2.19E-01)†	7.94E-01(1.57E-01)
	50	1.00E+00(1.74E-06)†	9.45E-01(1.05E-04)†	1.00E+00(3.17E-11)	7.98E-01(1.04E-02)†	9.48E-01(9.97E-04)†	1.00E+00(1.11E-07)
	200	1.00E+00(0.00E+00)‡	9.30E-01(8.19E-06)†	1.00E+00(3.23E-14)	7.00E-01(6.73E-03)†	9.53E-01(1.21E-03)†	9.99E-01(4.27E-05)
F4	5	9.46E-01(2.04E-03)‡	8.35E-01(1.63E-03)‡	9.45E-01(1.02E-03)‡	9.48E-01(1.04E-03)‡	9.20E-01(6.17E-04)‡	7.31E-01(7.01E-03)
	25	9.30E-01(3.29E-04)‡	9.15E-01(7.56E-04)‡	9.80E-01(8.72E-04)‡	9.40E-01(7.49E-04)‡	5.92E-01(2.00E-01)†	6.92E-01(4.22E-03)
	50	9.54E-01(1.25E-03)‡	9.24E-01(7.90E-05)‡	9.82E-01(8.19E-04)‡	9.38E-01(4.64E-04)‡	9.26E-01(6.24E-31)‡	7.12E-01(3.59E-03)
	200	9.59E-01(1.40E-03)‡	9.26E-01(6.24E-31)‡	9.91E-01(4.20E-04)‡	9.32E-01(6.38E-04)‡	9.26E-01(6.24E-31)‡	7.16E-01(8.05E-03)
WFG1	5	6.22E-01(1.37E-03)†	4.10E-01(3.60E-03)†	5.96E-01(6.47E-04)†	3.65E-01(7.33E-04)†	5.56E-01(2.06E-03)†	7.38E-01(2.11E-03)
	25	6.66E-01(3.07E-04)†	3.54E-01(9.14E-04)†	7.14E-01(4.72E-04)†	4.07E-01(4.37E-04)†	4.07E-01(9.45E-02)†	8.18E-01(5.35E-04)
	50	7.60E-01(2.92E-04)†	3.21E-01(2.04E-04)†	7.98E-01(3.83E-04)†	4.17E-01(2.61E-04)†	7.36E-01(2.76E-04)†	8.89E-01(3.05E-04)
	200	8.62E-01(6.54E-05)†	3.21E-01(5.10E-05)†	8.91E-01(1.58E-04)†	4.25E-01(9.17E-05)†	8.49E-01(6.89E-05)†	9.23E-01(1.77E-04)
WFG2	5	5.94E-01(5.34E-04)†	3.69E-01(9.36E-04)†	6.37E-01(6.11E-04)†	1.52E-01(1.91E-05)†	6.68E-01(5.43E-04)†	9.49E-01(1.78E-03)
	25	8.06E-01(2.49E-04)†	3.08E-01(7.39E-05)†	8.21E-01(2.01E-04)†	1.53E-01(1.92E-06)†	5.19E-01(1.53E-01)†	9.85E-01(6.61E-05)
	50	8.45E-01(2.72E-05)†	3.08E-01(5.37E-05)†	8.45E-01(1.32E-04)†	1.53E-01(5.74E-07)†	8.45E-01(8.72E-06)†	9.77E-01(8.90E-06)
	200	8.63E-01(7.78E-06)†	3.11E-01(2.75E-05)†	8.57E-01(6.95E-05)†	1.54E-01(1.25E-05)†	8.35E-01(1.12E-06)†	9.63E-01(1.45E-06)
WFG3	5	9.39E-01(3.09E-04)‡	7.34E-01(3.20E-03)†	7.28E-01(1.31E-03)†	4.32E-01(2.59E-05)†	7.84E-01(2.32E-03)†	8.70E-01(2.62E-03)
	25	9.94E-01(1.05E-05)‡	9.03E-01(5.41E-04)†	9.46E-01(2.45E-04)†	4.31E-01(8.04E-06)†	6.04E-01(2.08E-01)†	9.60E-01(9.15E-04)
	50	9.97E-01(2.55E-06)‡	9.41E-01(3.72E-04)†	9.60E-01(2.34E-04)†	4.34E-01(5.47E-06)†	9.67E-01(1.65E-04)†	9.72E-01(3.19E-03)
	200	1.00E+00(3.81E-08)‡	9.87E-01(3.27E-05)†	9.71E-01(2.98E-04)†	4.36E-01(1.53E-06)†	9.95E-01(3.17E-06)	9.96E-01(1.86E-06)
WFG4	5	8.12E-01(7.48E-04)†	9.31E-01(1.03E-03)†	9.15E-01(2.54E-04)†	8.40E-01(1.68E-04)†	9.14E-01(4.06E-04)†	9.92E-01(3.05E-04)
	25	9.64E-01(3.65E-04)†	9.37E-01(3.47E-04)†	9.74E-01(1.92E-04)†	8.47E-01(6.77E-06)†	6.01E-01(2.06E-01)†	1.00E+00(3.49E-06)
	50	9.76E-01(3.43E-04)†	9.45E-01(3.21E-04)†	9.79E-01(1.45E-04)†	8.46E-01(3.22E-06)†	9.27E-01(3.83E-06)†	9.98E-01(2.26E-05)
	200	9.82E-01(2.90E-04)†	9.59E-01(1.16E-04)†	9.68E-01(2.24E-04)†	8.45E-01(8.03E-07)†	9.26E-01(7.59E-08)†	9.98E-01(2.21E-05)
WFG5	5	8.63E-01(1.04E-03)†	9.58E-01(6.27E-04)†	9.63E-01(1.75E-04)†	6.86E-01(1.90E-05)†	9.79E-01(1.32E-04)	9.85E-01(2.69E-05)
	25	9.57E-01(3.31E-04)†	9.08E-01(5.97E-04)†	9.76E-01(9.84E-05)†	6.86E-01(5.03E-05)†	6.04E-01(2.08E-01)†	9.86E-01(1.60E-05)
	50	9.67E-01(3.70E-04)†	9.02E-01(4.44E-04)†	9.76E-01(9.83E-05)†	6.78E-01(1.48E-04)†	9.24E-01(7.26E-05)†	9.85E-01(1.79E-05)
	200	9.74E-01(2.25E-04)†	9.12E-01(4.23E-04)†	9.70E-01(1.01E-04)†	6.70E-01(4.00E-05)†	9.20E-01(1.60E-05)†	9.86E-01(1.23E-05)
WFG6	5	7.71E-01(5.01E-04)†	8.97E-01(9.71E-04)†	9.43E-01(2.18E-04)†	3.05E-01(4.29E-06)†	9.59E-01(3.93E-04)†	9.88E-01(1.50E-04)
	25	9.36E-01(1.47E-04)†	8.94E-01(5.48E-04)†	9.67E-01(2.54E-04)†	3.03E-01(6.89E-07)†	5.99E-01(2.04E-01)†	9.85E-01(2.01E-04)
	50	9.58E-01(1.14E-04)†	9.06E-01(5.34E-04)†	9.66E-01(2.15E-04)†	3.02E-01(4.89E-08)†	9.27E-01(5.13E-06)†	9.77E-01(9.21E-05)
	200	9.63E-01(1.70E-04)†	9.40E-01(1.89E-04)†	9.61E-01(2.66E-04)†	3.02E-01(1.55E-08)†	9.26E-01(4.15E-09)†	9.75E-01(5.75E-05)
WFG7	5	9.78E-01(2.34E-04)	8.87E-01(1.31E-03)†	9.89E-01(8.70E-05)	9.78E-01(6.79E-05)†	9.78E-01(2.31E-04)†	9.83E-01(4.33E-04)
	25	9.75E-01(1.55E-04)	9.47E-01(1.68E-04)†	9.89E-01(8.42E-05)‡	9.88E-01(1.28E-04)‡	5.99E-01(2.04E-01)†	9.72E-01(1.75E-04)
	50	9.67E-01(6.95E-05)	9.55E-01(6.27E-05)†	9.89E-01(8.84E-05)‡	9.84E-01(1.96E-04)‡	9.27E-01(8.20E-06)†	9.65E-01(2.84E-04)
	200	9.65E-01(3.62E-05)	9.69E-01(1.45E-04)	9.89E-01(9.26E-05)‡	9.51E-01(3.85E-04)†	9.26E-01(6.24E-31)†	9.66E-01(2.70E-04)
WFG8	5	9.79E-01(1.95E-04)†	9.03E-01(1.27E-03)†	9.87E-01(9.16E-05)†	9.72E-01(5.08E-04)†	9.77E-01(1.41E-04)†	9.91E-01(1.94E-04)
	25	9.75E-01(1.55E-04)	9.47E-01(1.68E-04)†	9.89E-01(8.42E-05)‡	9.83E-01(2.20E-04)‡	5.98E-01(2.04E-01)†	9.72E-01(2.33E-04)
	50	9.68E-01(6.15E-05)†	9.55E-01(5.34E-05)†	9.91E-01(7.91E-05)‡	9.78E-01(2.23E-04)	9.26E-01(7.81E-09)†	9.73E-01(1.45E-04)
	200	9.65E-01(4.75E-05)‡	9.75E-01(1.11E-04)‡	9.88E-01(1.06E-04)	9.49E-01(3.90E-04)†	9.26E-01(7.95E-10)†	9.65E-01(3.17E-04)
WFG9	5	9.72E-01(2.97E-04)‡	8.51E-01(2.12E-03)†	9.84E-01(1.50E-04)‡	9.70E-01(1.98E-04)‡	9.27E-01(1.30E-03)	9.35E-01(1.15E-03)
	25	9.75E-01(1.55E-04)	9.47E-01(1.68E-04)	9.89E-01(8.42E-05)‡	9.62E-01(5.03E-04)	5.87E-01(1.97E-01)†	9.52E-01(1.67E-03)
	50	9.80E-01(1.38E-04)‡	9.29E-01(1.22E-03)	9.81E-01(1.29E-04)‡	9.55E-01(4.06E-04)	8.88E-01(2.10E-03)†	9.45E-01(1.54E-03)
	200	9.71E-01(7.13E-05)‡	9.44E-01(1.18E-03)‡	9.79E-01(2.67E-04)‡	9.48E-01(4.84E-04)‡	8.84E-01(1.50E-03)†	9.35E-01(1.46E-03)

TABLE 78
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 2 TO 3 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	9.72E-01(1.44E-06)†	9.74E-01(3.24E-06)†	9.72E-01(3.36E-06)†	2.62E-02(3.57E-03)†	9.73E-01(1.88E-06)†	9.97E-01(3.97E-10)
	25	9.83E-01(1.92E-05)†	9.97E-01(5.26E-09)†	9.84E-01(1.31E-05)†	7.55E-01(8.33E-03)†	9.96E-01(1.34E-06)†	9.97E-01(4.01E-08)
	50	9.94E-01(5.56E-06)†	9.97E-01(4.46E-10)‡	9.94E-01(5.25E-06)†	9.89E-01(1.79E-05)†	9.97E-01(2.75E-07)†	9.97E-01(3.00E-08)
	200	9.97E-01(4.03E-09)†	9.97E-01(4.93E-11)	9.97E-01(2.36E-09)†	9.96E-01(7.76E-07)†	9.97E-01(4.54E-08)†	9.97E-01(4.47E-08)
F2	5	7.96E-01(9.13E-05)†	8.62E-01(3.74E-04)†	9.04E-01(5.19E-05)†	8.79E-01(7.13E-04)†	9.01E-01(7.06E-05)†	9.29E-01(4.36E-08)
	25	9.06E-01(1.30E-04)†	9.25E-01(3.49E-07)†	9.26E-01(8.53E-07)†	9.25E-01(6.73E-07)†	9.29E-01(3.00E-08)†	9.30E-01(5.11E-09)
	50	9.25E-01(2.04E-06)†	9.27E-01(1.16E-07)†	9.26E-01(1.41E-06)†	9.26E-01(1.37E-07)†	9.30E-01(1.36E-08)†	9.30E-01(3.08E-09)
	200	9.26E-01(2.74E-06)†	9.29E-01(3.29E-09)†	9.26E-01(7.59E-07)†	9.27E-01(1.77E-08)†	9.30E-01(1.11E-09)†	9.30E-01(2.62E-09)
F3	5	7.82E-01(6.55E-05)†	7.99E-01(3.04E-04)†	7.79E-01(5.40E-05)†	8.79E-01(7.13E-04)†	7.91E-01(1.95E-04)†	9.29E-01(3.77E-08)
	25	8.49E-01(4.10E-04)†	9.29E-01(3.28E-07)†	8.46E-01(3.15E-04)†	2.08E-01(1.76E-02)†	9.23E-01(4.18E-05)†	9.29E-01(1.66E-05)
	50	9.04E-01(2.05E-04)†	9.29E-01(1.67E-07)‡	8.98E-01(3.11E-04)†	8.35E-01(5.27E-03)†	9.28E-01(5.26E-06)†	9.29E-01(3.38E-05)
	200	9.27E-01(7.41E-07)†	9.30E-01(2.44E-08)‡	9.27E-01(3.74E-07)†	9.26E-01(9.42E-07)†	9.27E-01(5.11E-05)†	9.30E-01(1.42E-05)
F4	5	8.03E-01(1.93E-10)†	8.02E-01(1.15E-08)†	8.32E-01(1.22E-03)‡	8.00E-01(1.40E-07)†	8.55E-01(5.89E-04)‡	8.09E-01(8.96E-04)
	25	8.11E-01(5.03E-04)‡	8.15E-01(1.27E-03)‡	8.89E-01(3.04E-03)‡	8.10E-01(8.76E-04)‡	9.29E-01(2.23E-08)‡	8.00E-01(1.31E-07)
	50	9.23E-01(4.81E-04)‡	8.69E-01(3.59E-03)‡	9.27E-01(4.86E-07)‡	8.38E-01(2.78E-03)‡	9.30E-01(6.98E-09)‡	8.00E-01(1.81E-07)
	200	9.27E-01(4.45E-07)‡	9.29E-01(7.69E-08)‡	9.27E-01(3.70E-07)‡	9.16E-01(1.15E-03)‡	9.30E-01(4.18E-09)‡	7.99E-01(6.15E-08)
WFG1	5	8.54E-01(8.59E-05)†	8.19E-01(4.08E-04)†	8.74E-01(3.76E-04)†	4.15E-01(2.48E-04)†	8.63E-01(1.24E-04)†	9.64E-01(2.18E-06)
	25	9.43E-01(2.01E-04)†	8.76E-01(1.31E-04)†	9.53E-01(3.74E-05)†	3.98E-01(6.24E-05)†	9.51E-01(2.39E-05)†	9.69E-01(6.97E-07)
	50	9.61E-01(9.25E-06)†	9.05E-01(7.38E-05)†	9.63E-01(2.63E-06)†	3.99E-01(6.24E-05)†	9.66E-01(6.51E-06)†	9.69E-01(9.75E-07)
	200	9.66E-01(4.09E-06)†	9.38E-01(2.87E-05)†	9.66E-01(9.80E-07)†	4.02E-01(5.29E-05)†	9.69E-01(4.05E-07)‡	9.69E-01(1.24E-06)
WFG2	5	8.86E-01(1.32E-04)†	8.69E-01(2.63E-04)†	9.33E-01(3.93E-05)†	2.73E-01(3.17E-08)†	9.38E-01(1.52E-05)†	9.64E-01(1.18E-07)
	25	9.56E-01(2.08E-05)†	9.26E-01(1.64E-05)†	9.61E-01(3.98E-07)†	2.74E-01(2.39E-08)†	9.64E-01(1.11E-07)†	9.65E-01(1.70E-08)
	50	9.62E-01(1.87E-07)†	9.37E-01(7.76E-06)†	9.62E-01(3.66E-07)†	2.75E-01(3.41E-09)†	9.65E-01(3.50E-08)†	9.65E-01(1.14E-08)
	200	9.61E-01(2.40E-07)†	9.52E-01(6.90E-07)†	9.62E-01(2.97E-07)†	2.75E-01(1.92E-09)†	9.65E-01(5.91E-09)	9.65E-01(7.67E-09)
WFG3	5	7.23E-01(1.34E-09)‡	7.04E-01(6.06E-06)†	7.23E-01(2.85E-06)‡	2.84E-01(5.54E-07)†	7.23E-01(8.33E-07)‡	7.19E-01(2.56E-07)
	25	7.23E-01(1.31E-09)‡	7.17E-01(3.26E-06)†	7.26E-01(3.97E-06)‡	2.89E-01(8.93E-08)†	7.23E-01(6.17E-07)‡	7.22E-01(4.37E-07)
	50	7.23E-01(1.02E-09)‡	7.18E-01(2.30E-06)†	7.27E-01(3.38E-07)‡	2.90E-01(1.48E-08)†	7.24E-01(2.24E-07)‡	7.22E-01(4.17E-07)
	200	7.23E-01(9.06E-07)‡	7.20E-01(3.01E-07)†	7.27E-01(2.34E-06)‡	2.90E-01(2.05E-09)†	7.22E-01(2.15E-07)	7.22E-01(1.78E-07)
WFG4	5	5.00E-01(8.77E-04)†	6.65E-01(2.33E-04)†	6.75E-01(2.71E-04)†	2.60E-01(3.45E-04)†	6.57E-01(3.67E-04)†	7.41E-01(3.08E-07)
	25	7.26E-01(2.24E-05)†	6.87E-01(7.36E-06)†	7.27E-01(8.96E-06)†	3.99E-01(1.78E-05)†	7.40E-01(4.66E-07)†	7.44E-01(3.23E-08)
	50	7.28E-01(2.33E-06)†	6.95E-01(5.51E-06)†	7.28E-01(2.57E-06)†	4.09E-01(1.11E-05)†	7.43E-01(3.06E-08)†	7.44E-01(7.87E-09)
	200	7.29E-01(1.04E-06)†	7.08E-01(2.15E-06)†	7.29E-01(2.48E-06)†	4.23E-01(1.30E-06)†	7.45E-01(1.08E-09)†	7.45E-01(7.38E-10)
WFG5	5	4.61E-01(3.67E-04)†	6.20E-01(1.32E-04)†	6.70E-01(4.02E-05)†	4.82E-01(9.08E-04)†	6.47E-01(6.13E-05)†	6.95E-01(2.91E-06)
	25	6.79E-01(3.48E-04)†	6.80E-01(1.73E-05)†	6.89E-01(6.90E-06)†	6.21E-01(3.26E-06)†	7.00E-01(4.77E-06)†	7.03E-01(1.29E-05)
	50	6.90E-01(3.21E-06)†	6.86E-01(3.28E-06)†	6.91E-01(7.16E-06)†	6.22E-01(4.06E-06)†	7.07E-01(7.75E-06)†	7.09E-01(8.40E-06)
	200	6.94E-01(1.80E-05)†	6.94E-01(5.20E-06)†	6.96E-01(1.55E-05)†	6.24E-01(2.35E-06)†	7.11E-01(9.40E-09)	7.11E-01(1.46E-08)
WFG6	5	4.70E-01(3.74E-04)†	5.60E-01(1.23E-03)†	6.23E-01(4.86E-04)†	1.79E-01(4.66E-09)†	6.07E-01(3.23E-04)†	6.89E-01(3.88E-04)
	25	6.44E-01(7.33E-04)†	6.90E-01(1.03E-05)	6.94E-01(2.40E-04)	1.82E-01(8.95E-06)†	6.79E-01(1.99E-03)	6.95E-01(2.43E-04)
	50	6.91E-01(2.47E-04)	7.03E-01(4.99E-06)‡	6.94E-01(1.92E-04)	1.84E-01(3.54E-08)†	6.76E-01(1.94E-03)	6.98E-01(1.48E-04)
	200	6.97E-01(2.37E-04)	7.20E-01(2.03E-06)‡	6.95E-01(2.33E-04)	1.83E-01(1.92E-08)†	6.86E-01(1.59E-03)	7.01E-01(1.79E-04)
WFG7	5	6.61E-01(6.38E-04)†	6.07E-01(2.50E-04)†	6.96E-01(6.79E-05)†	5.78E-01(9.71E-04)†	6.84E-01(9.66E-05)†	7.38E-01(8.87E-07)
	25	7.34E-01(2.23E-06)†	6.65E-01(4.00E-05)†	7.34E-01(1.63E-06)†	7.00E-01(1.01E-05)†	7.43E-01(1.49E-07)†	7.44E-01(1.66E-08)
	50	7.35E-01(7.12E-07)†	6.87E-01(1.55E-05)†	7.35E-01(1.22E-06)†	7.13E-01(2.72E-06)†	7.44E-01(1.41E-08)†	7.45E-01(7.13E-09)
	200	7.36E-01(8.68E-07)†	7.13E-01(3.55E-06)†	7.36E-01(6.33E-07)†	7.25E-01(1.98E-06)†	7.45E-01(5.28E-10)†	7.45E-01(2.21E-10)
WFG8	5	6.66E-01(4.32E-04)†	6.09E-01(1.53E-04)†	6.95E-01(7.32E-05)†	5.73E-01(9.80E-04)†	6.82E-01(1.46E-04)†	7.38E-01(2.12E-06)
	25	7.34E-01(1.73E-06)†	6.67E-01(4.25E-05)†	7.34E-01(1.93E-06)†	7.00E-01(9.78E-06)†	7.43E-01(1.24E-07)†	7.44E-01(2.45E-08)
	50	7.35E-01(1.71E-06)†	6.86E-01(2.46E-05)†	7.35E-01(7.17E-07)†	7.14E-01(3.38E-06)†	7.44E-01(1.40E-08)†	7.45E-01(5.02E-09)
	200	7.35E-01(1.48E-06)†	7.13E-01(4.37E-06)†	7.36E-01(9.42E-07)†	7.25E-01(3.70E-06)†	7.45E-01(3.78E-10)†	7.45E-01(2.60E-10)
WFG9	5	3.75E-01(1.84E-03)†	4.43E-01(4.37E-05)†	4.68E-01(4.38E-05)†	5.86E-01(1.76E-02)‡	4.66E-01(4.96E-05)†	4.90E-01(7.52E-04)
	25	4.57E-01(2.41E-03)†	4.70E-01(1.36E-06)†	4.84E-01(6.75E-05)†	6.34E-01(1.07E-02)‡	4.87E-01(5.62E-05)†	4.92E-01(9.02E-05)
	50	4.58E-01(2.67E-03)†	4.74E-01(8.35E-07)†	4.83E-01(8.61E-05)†	6.01E-01(1.13E-02)‡	4.89E-01(5.44E-05)†	4.97E-01(3.68E-04)
	200	4.73E-01(1.26E-03)†	4.78E-01(4.94E-07)†	4.85E-01(9.38E-05)†	6.18E-01(1.07E-02)‡	4.89E-01(3.84E-05)†	4.92E-01(8.13E-05)

TABLE 79
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 3 TO 4 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	9.76E-01(4.07E-06)†	9.85E-01(1.74E-05)†	9.74E-01(2.45E-06)†	2.01E-02(2.01E-03)†	9.79E-01(1.98E-05)†	1.00E+00(5.07E-11)
	25	9.95E-01(3.03E-06)†	1.00E+00(8.87E-10)†	9.95E-01(4.12E-06)†	1.08E-01(3.49E-02)†	9.99E-01(7.43E-08)†	1.00E+00(5.95E-09)
	50	9.99E-01(3.14E-07)†	1.00E+00(5.41E-11)‡	9.99E-01(4.26E-07)†	9.71E-02(3.81E-02)†	1.00E+00(5.56E-09)†	1.00E+00(1.36E-08)
	200	9.99E-01(8.02E-08)†	1.00E+00(6.00E-12)‡	1.00E+00(8.78E-09)†	4.06E-01(1.40E-01)†	1.00E+00(4.20E-09)†	1.00E+00(1.60E-09)
F2	5	8.09E-01(1.87E-04)†	9.49E-01(8.17E-05)†	9.43E-01(4.59E-05)†	7.93E-01(1.69E-02)†	9.54E-01(2.97E-05)†	9.74E-01(6.78E-07)
	25	9.48E-01(7.70E-05)†	9.69E-01(2.60E-07)†	9.68E-01(2.48E-06)†	1.50E-01(5.20E-02)†	9.74E-01(2.28E-08)†	9.74E-01(6.81E-09)
	50	9.65E-01(4.38E-06)†	9.71E-01(9.00E-08)†	9.68E-01(1.97E-06)†	1.31E-02(5.14E-03)†	9.74E-01(1.01E-08)†	9.75E-01(3.10E-09)
	200	9.68E-01(7.29E-07)†	9.74E-01(8.14E-09)†	9.68E-01(1.58E-06)†	0.00E+00(0.00E+00)†	9.75E-01(4.60E-10)†	9.75E-01(2.10E-10)
F3	5	7.81E-01(1.66E-04)†	8.63E-01(6.82E-04)†	7.66E-01(1.16E-04)†	7.93E-01(1.69E-02)†	7.95E-01(4.43E-04)†	9.74E-01(3.37E-07)
	25	9.09E-01(3.46E-04)†	9.72E-01(4.75E-07)‡	9.01E-01(4.26E-04)†	0.00E+00(0.00E+00)†	9.68E-01(1.80E-05)†	9.71E-01(1.64E-05)
	50	9.47E-01(7.87E-05)†	9.73E-01(3.41E-07)‡	9.49E-01(8.22E-05)†	1.84E-02(5.00E-03)†	9.73E-01(6.07E-06)‡	9.73E-01(1.25E-05)
	200	9.69E-01(2.23E-06)†	9.74E-01(3.69E-08)‡	9.69E-01(2.23E-06)†	0.00E+00(0.00E+00)†	9.74E-01(7.63E-07)‡	9.74E-01(9.56E-06)
F4	5	8.03E-01(3.42E-10)†	8.08E-01(4.36E-04)†	8.87E-01(1.24E-03)‡	8.42E-01(2.65E-03)	9.31E-01(3.24E-04)‡	8.34E-01(3.34E-03)
	25	9.42E-01(3.36E-04)‡	9.20E-01(3.29E-03)‡	9.60E-01(2.93E-04)‡	9.56E-01(2.15E-04)‡	9.74E-01(1.98E-08)‡	8.50E-01(4.21E-03)
	50	9.70E-01(7.72E-07)‡	9.68E-01(1.64E-04)‡	9.70E-01(2.26E-07)‡	9.65E-01(6.05E-05)‡	9.75E-01(1.21E-08)‡	8.54E-01(4.27E-03)
	200	9.70E-01(8.02E-07)‡	9.74E-01(1.70E-08)‡	9.70E-01(1.50E-07)‡	9.69E-01(6.68E-08)‡	9.75E-01(9.97E-10)‡	8.57E-01(4.33E-03)
WFG1	5	9.03E-01(3.55E-04)†	8.53E-01(2.13E-04)†	9.04E-01(1.86E-04)†	4.59E-01(9.34E-04)†	9.12E-01(1.24E-04)†	9.89E-01(3.42E-06)
	25	9.77E-01(3.11E-05)†	9.11E-01(7.24E-05)†	9.78E-01(2.40E-05)†	4.81E-01(9.48E-04)†	9.82E-01(7.48E-06)†	9.92E-01(8.36E-07)
	50	9.84E-01(7.27E-06)†	9.33E-01(6.65E-05)†	9.85E-01(4.65E-06)†	4.85E-01(8.64E-04)†	9.90E-01(6.22E-06)†	9.92E-01(6.21E-07)
	200	9.89E-01(4.06E-07)†	9.56E-01(2.26E-05)†	9.89E-01(2.97E-07)†	4.83E-01(9.47E-04)†	9.93E-01(2.26E-07)‡	9.92E-01(1.43E-06)
WFG2	5	9.23E-01(3.09E-04)†	9.09E-01(5.49E-05)†	9.70E-01(2.83E-05)†	2.55E-01(7.12E-08)†	9.77E-01(7.98E-06)†	9.94E-01(1.98E-08)
	25	9.87E-01(5.32E-06)†	9.54E-01(1.17E-05)†	9.90E-01(1.47E-06)†	2.56E-01(1.32E-08)†	9.95E-01(2.10E-08)†	9.95E-01(1.67E-08)
	50	9.91E-01(3.95E-07)†	9.65E-01(7.12E-06)†	9.91E-01(1.97E-07)†	2.56E-01(6.39E-10)†	9.95E-01(1.50E-08)†	9.95E-01(3.47E-09)
	200	9.90E-01(5.70E-07)†	9.79E-01(2.16E-06)†	9.91E-01(2.95E-07)†	2.56E-01(6.00E-11)†	9.95E-01(6.43E-10)	9.95E-01(1.03E-09)
WFG3	5	6.99E-01(1.25E-09)	6.89E-01(4.08E-05)†	7.12E-01(1.02E-05)‡	2.64E-01(9.85E-07)†	7.06E-01(3.66E-06)‡	6.99E-01(2.64E-05)
	25	6.99E-01(5.36E-09)†	7.13E-01(3.72E-06)‡	7.20E-01(2.94E-06)‡	2.66E-01(7.70E-08)†	7.12E-01(1.34E-06)‡	7.08E-01(1.05E-05)
	50	7.00E-01(1.29E-05)†	7.15E-01(2.87E-06)‡	7.21E-01(9.69E-07)‡	2.67E-01(9.21E-09)†	7.12E-01(1.82E-06)‡	7.10E-01(4.34E-06)
	200	7.19E-01(3.11E-05)†	7.17E-01(4.67E-07)†	7.20E-01(1.62E-06)‡	2.67E-01(4.91E-09)†	7.11E-01(1.40E-06)‡	7.09E-01(2.55E-06)
WFG4	5	5.47E-01(2.72E-03)†	7.03E-01(1.02E-04)†	7.16E-01(1.67E-04)†	3.05E-01(8.93E-04)†	7.24E-01(2.83E-04)†	8.29E-01(9.41E-07)
	25	7.78E-01(5.76E-05)†	7.52E-01(1.36E-05)†	7.77E-01(4.40E-05)†	3.60E-01(4.29E-05)†	8.32E-01(4.55E-07)†	8.35E-01(1.26E-07)
	50	7.84E-01(2.55E-05)†	7.67E-01(1.24E-05)†	7.80E-01(3.08E-05)†	3.70E-01(3.50E-05)†	8.36E-01(1.46E-07)†	8.36E-01(6.95E-08)
	200	7.92E-01(2.99E-05)†	7.92E-01(2.77E-06)†	7.90E-01(2.41E-05)†	3.74E-01(1.47E-05)†	8.38E-01(9.44E-09)	8.38E-01(2.13E-08)
WFG5	5	4.72E-01(1.03E-03)†	6.63E-01(4.42E-04)†	7.19E-01(1.79E-04)†	5.38E-01(8.07E-05)†	7.07E-01(1.51E-04)†	7.77E-01(5.96E-06)
	25	7.18E-01(5.71E-04)†	7.53E-01(2.18E-05)†	7.47E-01(1.20E-05)†	5.64E-01(1.84E-05)†	7.87E-01(3.57E-06)†	7.93E-01(7.71E-06)
	50	7.51E-01(1.27E-05)†	7.62E-01(8.94E-06)†	7.48E-01(1.53E-05)†	5.64E-01(1.63E-05)†	7.96E-01(2.03E-06)†	7.97E-01(4.08E-07)
	200	7.55E-01(3.52E-05)†	7.76E-01(3.36E-06)†	7.55E-01(2.67E-05)†	5.63E-01(9.96E-06)†	7.97E-01(8.00E-08)	7.97E-01(1.05E-07)
WFG6	5	4.35E-01(4.41E-04)†	6.32E-01(9.94E-04)†	6.48E-01(5.84E-04)†	1.44E-01(2.17E-07)†	6.66E-01(4.70E-04)†	7.50E-01(1.44E-03)
	25	6.78E-01(7.84E-04)†	7.54E-01(2.61E-05)†	7.41E-01(4.16E-04)†	1.47E-01(4.60E-06)†	7.64E-01(2.03E-03)	7.77E-01(3.12E-04)
	50	7.33E-01(3.82E-04)†	7.75E-01(1.47E-05)	7.45E-01(3.34E-04)†	1.46E-01(1.01E-08)†	7.55E-01(3.02E-03)	7.76E-01(2.38E-04)
	200	7.51E-01(4.19E-04)†	8.05E-01(1.30E-06)‡	7.49E-01(3.83E-04)†	1.46E-01(3.93E-09)†	7.60E-01(2.53E-03)	7.79E-01(2.90E-04)
WFG7	5	7.36E-01(5.27E-04)†	5.87E-01(3.21E-04)†	7.54E-01(1.96E-04)†	5.89E-01(3.67E-04)†	7.59E-01(1.02E-04)†	8.30E-01(1.65E-06)
	25	8.00E-01(1.42E-05)†	7.14E-01(7.40E-05)†	8.01E-01(8.11E-06)†	7.23E-01(6.47E-05)†	8.34E-01(3.25E-07)†	8.36E-01(1.10E-07)
	50	8.00E-01(1.04E-05)†	7.49E-01(5.17E-05)†	8.01E-01(1.14E-05)†	7.46E-01(7.02E-05)†	8.37E-01(9.71E-08)†	8.37E-01(4.20E-08)
	200	8.01E-01(7.13E-06)†	7.98E-01(4.47E-06)†	8.02E-01(6.26E-06)†	7.70E-01(2.23E-05)†	8.39E-01(4.53E-09)†	8.39E-01(2.17E-09)
WFG8	5	7.33E-01(6.75E-04)†	5.81E-01(3.29E-04)†	7.53E-01(1.37E-04)†	5.93E-01(4.53E-04)†	7.63E-01(8.01E-05)†	8.29E-01(2.48E-06)
	25	7.99E-01(7.66E-06)†	7.12E-01(1.05E-04)†	8.01E-01(8.29E-06)†	7.23E-01(4.54E-05)†	8.34E-01(1.60E-07)†	8.36E-01(7.57E-08)
	50	8.00E-01(1.24E-05)†	7.48E-01(4.78E-05)†	8.01E-01(6.48E-06)†	7.43E-01(4.24E-05)†	8.36E-01(1.18E-07)†	8.37E-01(4.52E-08)
	200	8.01E-01(7.42E-06)†	7.98E-01(3.15E-06)†	8.02E-01(6.02E-06)†	7.70E-01(3.41E-05)†	8.39E-01(5.16E-09)†	8.39E-01(4.29E-09)
WFG9	5	3.59E-01(3.58E-03)†	4.54E-01(5.10E-04)	4.88E-01(1.26E-04)	6.18E-01(2.39E-02)‡	5.00E-01(3.81E-05)‡	4.75E-01(1.63E-03)
	25	4.45E-01(3.42E-03)†	4.95E-01(1.89E-06)†	4.92E-01(6.65E-05)†	6.67E-01(1.84E-02)‡	5.19E-01(7.85E-05)	4.98E-01(1.47E-03)
	50	4.64E-01(1.84E-03)†	5.00E-01(1.07E-06)	4.91E-01(1.09E-04)	6.56E-01(1.63E-02)‡	5.21E-01(8.66E-05)‡	4.83E-01(1.80E-03)
	200	4.87E-01(7.02E-04)†	5.06E-01(2.40E-06)†	4.98E-01(5.06E-05)†	6.78E-01(1.37E-02)‡	5.19E-01(7.72E-05)	5.08E-01(1.87E-03)

TABLE 80
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 4 TO 5 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	9.80E-01(6.20E-06)†	9.92E-01(7.63E-06)†	9.77E-01(4.88E-06)†	3.19E-02(4.68E-03)†	9.83E-01(9.19E-05)†	1.00E+00(3.51E-11)
	25	9.99E-01(1.93E-07)†	1.00E+00(5.66E-10)†	9.99E-01(2.42E-07)†	1.90E-04(1.09E-06)†	1.00E+00(2.44E-09)†	1.00E+00(1.99E-09)
	50	1.00E+00(9.69E-09)†	1.00E+00(6.30E-12)†	1.00E+00(1.09E-08)†	0.00E+00(0.00E+00)†	1.00E+00(3.47E-10)†	1.00E+00(9.08E-11)
	200	6.68E-01(1.75E-01)†	1.00E+00(3.45E-13)‡	1.60E-01(9.16E-02)†	0.00E+00(0.00E+00)†	1.00E+00(3.85E-10)†	1.00E+00(9.33E-11)
F2	5	8.41E-01(4.24E-04)†	9.73E-01(1.32E-05)†	9.64E-01(1.44E-05)†	3.79E-01(7.02E-02)†	9.77E-01(7.25E-06)†	9.89E-01(4.09E-06)
	25	9.71E-01(1.33E-05)†	9.87E-01(7.30E-08)†	9.82E-01(1.72E-06)†	0.00E+00(0.00E+00)†	9.90E-01(1.23E-08)†	9.90E-01(4.69E-09)
	50	9.79E-01(6.20E-06)†	9.88E-01(8.88E-08)†	9.81E-01(2.47E-06)†	0.00E+00(0.00E+00)†	9.90E-01(3.26E-09)†	9.91E-01(2.85E-09)
	200	9.76E-01(7.40E-06)†	9.90E-01(5.47E-09)†	9.72E-01(2.55E-05)†	0.00E+00(0.00E+00)†	9.91E-01(3.00E-10)	9.91E-01(4.83E-10)
F3	5	7.89E-01(2.05E-04)†	9.26E-01(2.39E-04)†	7.68E-01(2.23E-04)†	3.79E-01(7.02E-02)†	8.27E-01(8.29E-04)†	9.90E-01(2.66E-07)
	25	9.46E-01(1.05E-04)†	9.87E-01(3.68E-07)‡	9.44E-01(6.49E-05)†	0.00E+00(0.00E+00)†	9.86E-01(7.19E-06)†	9.87E-01(6.56E-05)
	50	9.72E-01(1.66E-05)†	9.88E-01(2.38E-07)†	9.72E-01(2.82E-05)†	0.00E+00(0.00E+00)†	9.89E-01(1.74E-06)	9.89E-01(4.41E-06)
	200	6.60E-01(9.61E-02)†	9.90E-01(2.96E-08)†	2.90E-01(1.24E-01)†	0.00E+00(0.00E+00)†	9.89E-01(3.00E-06)†	9.90E-01(1.28E-06)
F4	5	8.10E-01(5.92E-04)	8.33E-01(2.35E-03)	9.25E-01(1.79E-03)‡	9.34E-01(1.38E-03)‡	9.72E-01(3.29E-05)‡	8.73E-01(4.26E-03)
	25	9.83E-01(2.03E-05)‡	9.74E-01(1.25E-03)‡	9.80E-01(4.55E-06)‡	9.83E-01(1.46E-06)‡	9.90E-01(2.31E-08)‡	8.95E-01(2.75E-03)
	50	9.84E-01(1.85E-06)‡	9.88E-01(1.05E-05)‡	9.70E-01(1.75E-05)‡	9.85E-01(1.21E-05)‡	9.91E-01(5.27E-09)‡	8.75E-01(4.23E-03)
	200	9.57E-01(5.40E-05)‡	9.90E-01(6.69E-09)‡	9.43E-01(1.61E-04)‡	9.87E-01(4.15E-08)‡	9.91E-01(2.16E-10)‡	8.79E-01(4.03E-03)
WFG1	5	9.40E-01(2.27E-04)†	8.76E-01(1.22E-04)†	9.30E-01(1.50E-04)†	3.10E-01(4.08E-03)†	9.42E-01(1.22E-04)†	9.94E-01(3.03E-06)
	25	9.85E-01(9.83E-06)†	9.21E-01(1.06E-04)†	9.85E-01(1.66E-05)†	3.57E-01(2.89E-03)†	9.89E-01(4.53E-06)†	9.95E-01(1.38E-06)
	50	9.89E-01(5.78E-06)†	9.37E-01(6.15E-05)†	9.89E-01(1.70E-06)†	3.30E-01(3.79E-03)†	9.94E-01(5.57E-06)†	9.95E-01(8.17E-07)
	200	9.94E-01(2.15E-07)†	9.55E-01(2.67E-05)†	9.94E-01(2.51E-07)†	2.97E-01(1.35E-03)†	9.96E-01(2.24E-07)‡	9.95E-01(3.26E-07)
WFG2	5	9.47E-01(2.79E-04)†	9.13E-01(9.72E-05)†	9.84E-01(1.66E-05)†	2.11E-01(1.14E-07)†	9.89E-01(1.72E-06)†	9.99E-01(9.54E-09)
	25	9.94E-01(1.21E-06)†	9.59E-01(8.53E-06)†	9.95E-01(3.75E-07)†	2.12E-01(4.96E-08)†	9.99E-01(4.18E-09)†	9.99E-01(2.83E-09)
	50	9.95E-01(3.25E-07)†	9.70E-01(4.08E-06)†	9.96E-01(2.63E-07)†	2.12E-01(5.11E-08)†	9.99E-01(1.88E-09)†	9.99E-01(1.15E-09)
	200	9.96E-01(3.81E-07)†	9.83E-01(1.94E-06)†	9.96E-01(3.85E-07)†	2.11E-01(5.37E-08)†	9.99E-01(2.97E-10)‡	9.99E-01(3.12E-10)
WFG3	5	6.79E-01(2.02E-09)†	6.75E-01(4.01E-05)†	7.07E-01(4.60E-06)‡	2.17E-01(4.27E-07)†	6.92E-01(4.18E-06)‡	6.85E-01(4.03E-05)
	25	6.80E-01(1.59E-05)†	6.88E-01(2.06E-05)†	7.13E-01(4.85E-06)‡	2.19E-01(1.33E-07)†	6.95E-01(5.02E-06)‡	6.92E-01(2.19E-05)
	50	6.95E-01(1.21E-04)	6.94E-01(1.00E-05)‡	7.12E-01(6.15E-06)‡	2.20E-01(7.31E-08)†	6.93E-01(1.03E-05)‡	6.91E-01(1.28E-05)
	200	7.12E-01(8.45E-06)‡	7.02E-01(4.87E-06)‡	7.12E-01(3.38E-06)‡	2.21E-01(2.88E-08)†	6.92E-01(8.01E-06)	6.91E-01(2.37E-05)
WFG4	5	6.01E-01(1.33E-03)†	6.79E-01(3.44E-04)†	7.14E-01(2.34E-04)†	2.89E-01(4.13E-04)†	7.58E-01(2.23E-04)†	8.77E-01(3.11E-06)
	25	7.91E-01(8.68E-05)†	7.56E-01(7.32E-05)†	7.75E-01(1.10E-04)†	3.37E-01(1.18E-04)†	8.86E-01(1.44E-06)†	8.89E-01(5.66E-07)
	50	7.99E-01(8.58E-05)†	7.84E-01(2.84E-05)†	7.82E-01(9.07E-05)†	3.50E-01(5.33E-05)†	8.90E-01(2.58E-07)	8.90E-01(1.77E-07)
	200	8.13E-01(9.59E-05)†	8.24E-01(5.65E-06)†	8.02E-01(1.33E-04)†	3.35E-01(1.15E-05)†	8.91E-01(6.86E-08)‡	8.91E-01(1.14E-07)
WFG5	5	4.92E-01(1.16E-03)†	6.68E-01(3.10E-04)†	7.16E-01(1.65E-04)†	5.05E-01(3.62E-05)†	7.51E-01(1.71E-04)†	8.19E-01(1.75E-05)
	25	7.38E-01(2.52E-04)†	7.63E-01(7.54E-05)†	7.51E-01(5.59E-05)†	5.10E-01(2.00E-05)†	8.36E-01(2.19E-06)†	8.41E-01(3.81E-06)
	50	7.65E-01(5.16E-05)†	7.81E-01(3.09E-05)†	7.56E-01(5.26E-05)†	5.06E-01(2.51E-05)†	8.44E-01(5.34E-06)†	8.46E-01(2.36E-06)
	200	7.69E-01(1.02E-04)†	8.05E-01(4.08E-06)†	7.68E-01(7.07E-05)†	5.01E-01(1.29E-05)†	8.47E-01(2.44E-07)	8.47E-01(2.18E-07)
WFG6	5	4.30E-01(5.44E-04)†	6.02E-01(4.93E-04)†	6.58E-01(6.52E-04)†	1.19E-01(6.92E-07)†	7.05E-01(6.75E-04)†	7.98E-01(8.71E-04)
	25	6.93E-01(5.35E-04)†	7.45E-01(2.15E-04)†	7.46E-01(5.11E-04)†	1.21E-01(1.01E-05)†	8.04E-01(2.78E-03)	8.18E-01(5.38E-04)
	50	7.36E-01(5.15E-04)†	7.79E-01(1.04E-04)†	7.51E-01(5.09E-04)†	1.20E-01(8.51E-07)†	7.92E-01(4.37E-03)	8.16E-01(3.74E-04)
	200	7.87E-01(2.07E-04)†	8.34E-01(1.81E-05)‡	7.89E-01(2.55E-04)†	1.21E-01(1.63E-05)†	7.96E-01(3.69E-03)	8.19E-01(4.46E-04)
WFG7	5	7.87E-01(2.25E-04)†	5.35E-01(6.24E-04)†	7.87E-01(1.70E-04)†	5.66E-01(6.48E-04)†	8.21E-01(8.65E-05)†	8.84E-01(2.49E-06)
	25	8.16E-01(5.40E-05)†	7.02E-01(3.42E-04)†	8.17E-01(3.08E-05)†	7.56E-01(1.39E-04)†	8.89E-01(5.17E-07)†	8.91E-01(1.78E-07)
	50	8.17E-01(3.06E-05)†	7.62E-01(1.25E-04)†	8.21E-01(1.45E-05)†	7.83E-01(8.47E-05)†	8.91E-01(1.92E-07)†	8.91E-01(9.67E-08)
	200	8.25E-01(1.32E-05)†	8.29E-01(2.49E-05)†	8.27E-01(1.53E-05)†	8.14E-01(3.01E-05)†	8.92E-01(2.07E-08)†	8.92E-01(3.18E-08)
WFG8	5	7.86E-01(4.01E-04)†	5.17E-01(9.30E-04)†	7.83E-01(1.82E-04)†	5.65E-01(6.72E-04)†	8.21E-01(1.70E-04)†	8.84E-01(1.34E-06)
	25	8.17E-01(6.39E-05)†	7.09E-01(2.96E-04)†	8.17E-01(5.03E-05)†	7.55E-01(1.56E-04)†	8.89E-01(5.45E-07)†	8.91E-01(2.59E-07)
	50	8.18E-01(1.84E-05)†	7.62E-01(1.41E-04)†	8.21E-01(2.61E-05)†	7.81E-01(9.03E-05)†	8.91E-01(1.11E-07)†	8.91E-01(1.14E-07)
	200	8.27E-01(1.46E-05)†	8.30E-01(1.18E-05)†	8.26E-01(2.31E-05)†	8.15E-01(3.74E-05)†	8.92E-01(2.27E-08)†	8.92E-01(1.67E-08)
WFG9	5	3.41E-01(5.40E-03)†	3.55E-01(1.76E-03)†	4.69E-01(6.83E-05)	6.15E-01(2.64E-02)‡	4.91E-01(5.25E-05)‡	4.60E-01(1.42E-03)
	25	4.20E-01(2.89E-03)†	4.38E-01(7.84E-04)†	4.70E-01(4.36E-05)	7.02E-01(1.98E-02)‡	5.10E-01(1.11E-04)‡	4.68E-01(3.16E-03)
	50	4.37E-01(2.10E-03)†	4.60E-01(2.34E-04)	4.71E-01(2.71E-05)	7.09E-01(1.92E-02)‡	5.14E-01(1.29E-04)‡	4.59E-01(2.94E-03)
	200	4.69E-01(6.12E-04)	4.83E-01(9.77E-06)	4.81E-01(4.68E-05)	7.62E-01(8.35E-03)‡	5.23E-01(2.22E-04)‡	4.78E-01(2.29E-03)

TABLE 81
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 5 TO 6 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	9.84E-01(8.65E-06)†	9.95E-01(4.74E-06)†	9.80E-01(1.09E-05)†	3.64E-02(5.22E-03)†	9.89E-01(3.57E-05)†	1.00E+00(1.45E-11)
	25	1.00E+00(1.11E-08)†	1.00E+00(1.57E-10)	1.00E+00(5.43E-08)†	0.00E+00(0.00E+00)†	1.00E+00(6.91E-09)†	1.00E+00(2.59E-10)
	50	9.99E-01(8.80E-06)†	1.00E+00(3.73E-13)	9.99E-01(8.76E-07)†	0.00E+00(0.00E+00)†	1.00E+00(4.14E-10)†	1.00E+00(1.61E-11)
	200	4.65E-01(1.38E-01)†	1.00E+00(1.11E-31)‡	4.20E-03(5.30E-04)†	0.00E+00(0.00E+00)†	1.00E+00(1.24E-10)†	1.00E+00(1.26E-11)
F2	5	8.76E-01(4.62E-04)†	9.87E-01(7.09E-06)‡	9.74E-01(1.08E-05)†	2.08E-01(3.80E-02)†	9.87E-01(1.54E-06)†	9.96E-01(7.69E-07)
	25	9.79E-01(9.90E-06)†	9.95E-01(3.91E-08)†	9.77E-01(1.13E-05)†	0.00E+00(0.00E+00)†	9.96E-01(6.06E-09)†	9.96E-01(3.26E-09)
	50	9.72E-01(4.17E-05)†	9.95E-01(1.31E-08)†	9.52E-01(1.29E-04)†	8.42E-03(2.13E-03)†	9.96E-01(1.22E-09)†	9.96E-01(1.06E-09)
	200	9.10E-01(2.73E-04)†	9.96E-01(9.21E-10)†	9.01E-01(8.11E-04)†	0.00E+00(0.00E+00)†	9.96E-01(4.64E-10)	9.96E-01(3.50E-10)
F3	5	8.10E-01(4.27E-04)†	9.60E-01(8.66E-05)†	7.83E-01(4.75E-04)†	2.08E-01(3.80E-02)†	8.64E-01(5.94E-04)†	9.96E-01(1.50E-06)
	25	9.68E-01(1.76E-05)†	9.94E-01(8.93E-08)	9.68E-01(2.93E-05)†	0.00E+00(0.00E+00)†	9.92E-01(5.31E-06)	9.93E-01(5.27E-06)
	50	9.68E-01(4.59E-04)†	9.95E-01(3.30E-08)†	9.70E-01(1.58E-04)†	0.00E+00(0.00E+00)†	9.95E-01(5.67E-07)†	9.96E-01(9.67E-07)
	200	1.25E-01(3.72E-02)†	9.96E-01(3.83E-09)†	4.11E-02(1.12E-02)†	0.00E+00(0.00E+00)†	9.95E-01(6.20E-07)†	9.96E-01(1.08E-06)
F4	5	8.26E-01(1.66E-03)†	8.76E-01(3.43E-03)†	9.68E-01(4.45E-04)‡	9.69E-01(1.26E-04)‡	9.87E-01(8.14E-06)‡	9.07E-01(2.91E-03)
	25	9.89E-01(3.10E-06)‡	9.94E-01(6.87E-06)‡	9.59E-01(9.74E-05)‡	9.89E-01(1.19E-05)‡	9.96E-01(2.76E-06)‡	9.20E-01(1.66E-03)
	50	9.49E-01(1.98E-04)‡	9.96E-01(9.75E-07)‡	8.58E-01(6.67E-04)†	9.91E-01(8.31E-06)‡	9.96E-01(7.24E-10)‡	9.08E-01(3.34E-03)
	200	7.09E-01(1.60E-03)†	9.96E-01(7.12E-10)‡	6.73E-01(4.54E-04)†	9.94E-01(1.72E-07)‡	9.97E-01(5.52E-11)‡	9.25E-01(3.53E-03)
WFG1	5	9.65E-01(7.36E-05)†	9.06E-01(1.76E-04)†	9.53E-01(1.10E-04)†	3.49E-01(1.12E-02)†	9.59E-01(8.71E-05)†	9.94E-01(4.58E-06)
	25	9.87E-01(1.15E-05)†	9.35E-01(6.01E-05)†	9.87E-01(1.81E-05)†	3.60E-01(2.51E-02)†	9.91E-01(5.70E-06)†	9.95E-01(2.18E-06)
	50	9.91E-01(4.75E-06)†	9.46E-01(6.51E-05)†	9.91E-01(1.47E-06)†	3.29E-01(2.62E-02)†	9.94E-01(3.24E-06)†	9.95E-01(1.11E-06)
	200	9.96E-01(3.70E-07)	9.56E-01(2.42E-05)†	9.96E-01(2.20E-07)	2.46E-01(1.87E-02)†	9.96E-01(2.31E-07)‡	9.96E-01(4.75E-07)
WFG2	5	9.65E-01(1.28E-04)†	9.37E-01(5.96E-05)†	9.90E-01(4.16E-06)†	2.09E-01(8.53E-08)†	9.94E-01(1.51E-06)†	1.00E+00(4.40E-09)
	25	9.96E-01(7.34E-07)†	9.72E-01(6.79E-06)†	9.97E-01(3.73E-07)†	2.09E-01(1.36E-09)†	1.00E+00(1.73E-09)†	1.00E+00(6.18E-10)
	50	9.97E-01(1.70E-07)†	9.80E-01(2.96E-06)†	9.97E-01(3.38E-07)†	2.09E-01(5.58E-10)†	1.00E+00(1.94E-10)†	1.00E+00(4.92E-10)
	200	9.98E-01(2.86E-07)†	9.89E-01(6.43E-07)†	9.98E-01(2.49E-07)†	2.09E-01(5.86E-10)†	1.00E+00(3.23E-11)	1.00E+00(5.43E-11)
WFG3	5	6.64E-01(3.37E-09)†	6.54E-01(1.50E-04)†	7.04E-01(8.13E-06)‡	2.15E-01(5.28E-07)†	6.89E-01(8.72E-06)‡	6.83E-01(4.18E-05)
	25	6.77E-01(1.72E-04)†	6.77E-01(3.48E-05)†	7.05E-01(1.17E-05)‡	2.18E-01(4.27E-08)†	6.88E-01(2.11E-05)	6.86E-01(8.25E-05)
	50	7.04E-01(6.16E-05)‡	6.85E-01(1.90E-05)†	7.04E-01(1.21E-05)‡	2.19E-01(4.56E-08)†	6.85E-01(1.62E-05)†	6.89E-01(2.87E-05)
	200	7.06E-01(1.64E-05)‡	6.93E-01(4.26E-06)‡	7.05E-01(7.14E-06)‡	2.19E-01(8.99E-09)†	6.83E-01(1.28E-05)	6.85E-01(2.63E-05)
WFG4	5	6.35E-01(1.07E-03)†	6.61E-01(3.60E-04)†	6.97E-01(2.14E-04)†	2.71E-01(5.30E-04)†	7.81E-01(2.02E-04)†	9.07E-01(5.31E-06)
	25	7.85E-01(1.33E-04)†	7.44E-01(1.98E-04)†	7.41E-01(1.25E-04)†	3.25E-01(9.52E-05)†	9.19E-01(2.68E-06)†	9.22E-01(1.48E-06)
	50	7.81E-01(2.97E-04)†	7.75E-01(1.07E-04)†	7.48E-01(3.49E-04)†	3.18E-01(2.85E-04)†	9.25E-01(1.24E-07)†	9.25E-01(4.01E-07)
	200	7.98E-01(3.25E-04)†	8.25E-01(2.86E-05)†	7.80E-01(4.08E-04)†	2.97E-01(7.44E-06)†	9.23E-01(1.44E-07)†	9.23E-01(1.38E-07)
WFG5	5	5.26E-01(1.52E-03)†	6.65E-01(3.87E-04)†	6.92E-01(2.00E-04)†	4.73E-01(4.44E-05)†	7.77E-01(1.16E-04)†	8.39E-01(3.28E-05)
	25	7.37E-01(2.36E-04)†	7.36E-01(1.30E-04)†	7.27E-01(2.10E-04)†	4.72E-01(3.25E-05)†	8.64E-01(3.07E-06)†	8.69E-01(2.02E-06)
	50	7.44E-01(1.16E-04)†	7.53E-01(8.21E-05)†	7.28E-01(2.61E-04)†	4.65E-01(1.83E-05)†	8.71E-01(2.39E-06)†	8.75E-01(5.14E-06)
	200	7.50E-01(1.52E-04)†	7.93E-01(3.17E-05)†	7.53E-01(2.63E-04)†	4.61E-01(1.51E-05)†	8.77E-01(2.98E-07)	8.77E-01(3.31E-07)
WFG6	5	4.37E-01(7.75E-04)†	5.80E-01(9.23E-04)†	6.46E-01(8.34E-04)†	1.01E-01(1.05E-05)†	7.10E-01(6.42E-04)†	8.14E-01(9.83E-04)
	25	6.88E-01(5.96E-04)†	7.22E-01(1.41E-04)†	7.25E-01(7.35E-04)†	1.02E-01(3.59E-05)†	8.23E-01(3.67E-03)	8.36E-01(9.49E-04)
	50	7.33E-01(3.91E-04)†	7.55E-01(2.44E-04)†	7.53E-01(4.94E-04)†	1.01E-01(3.26E-05)†	8.09E-01(5.48E-03)	8.33E-01(6.45E-04)
	200	7.94E-01(2.90E-04)†	8.13E-01(1.72E-04)†	7.99E-01(1.90E-04)†	1.03E-01(3.65E-05)†	8.28E-01(3.32E-03)	8.38E-01(7.38E-04)
WFG7	5	8.00E-01(2.91E-04)†	5.09E-01(1.16E-03)†	7.76E-01(3.45E-04)†	5.60E-01(8.75E-04)†	8.62E-01(6.36E-05)†	9.18E-01(2.15E-06)
	25	8.06E-01(2.02E-04)†	7.39E-01(1.41E-04)†	8.05E-01(1.49E-04)†	7.66E-01(3.50E-04)†	9.25E-01(3.77E-07)	9.26E-01(3.22E-07)
	50	8.17E-01(7.01E-05)†	7.83E-01(1.13E-04)†	8.23E-01(6.01E-05)†	8.13E-01(1.76E-04)†	9.24E-01(1.31E-07)	9.24E-01(3.28E-07)
	200	8.38E-01(2.05E-05)†	8.44E-01(6.96E-05)†	8.40E-01(2.78E-05)†	8.45E-01(1.50E-05)†	9.24E-01(3.29E-08)†	9.24E-01(2.25E-08)
WFG8	5	8.01E-01(3.07E-04)†	5.02E-01(1.96E-03)†	7.79E-01(2.16E-04)†	5.59E-01(1.17E-03)†	8.63E-01(1.08E-04)†	9.18E-01(5.68E-06)
	25	8.08E-01(1.04E-04)†	7.39E-01(2.89E-04)†	8.08E-01(1.36E-04)†	7.61E-01(3.76E-04)†	9.25E-01(5.04E-07)	9.26E-01(2.47E-07)
	50	8.19E-01(7.83E-05)†	7.86E-01(1.40E-04)†	8.19E-01(1.02E-04)†	8.05E-01(2.67E-04)†	9.24E-01(2.83E-07)	9.24E-01(1.91E-07)
	200	8.38E-01(1.17E-05)†	8.42E-01(9.06E-05)†	8.39E-01(1.74E-05)†	8.44E-01(2.25E-05)†	9.24E-01(2.75E-08)†	9.24E-01(1.71E-08)
WFG9	5	3.05E-01(4.56E-03)†	2.63E-01(2.13E-03)†	4.30E-01(5.35E-05)	6.14E-01(2.97E-02)‡	4.59E-01(8.28E-05)‡	4.14E-01(2.42E-03)
	25	3.86E-01(2.10E-03)†	3.37E-01(1.03E-03)†	4.26E-01(4.05E-05)	7.37E-01(1.63E-02)‡	4.82E-01(1.10E-04)‡	4.15E-01(4.03E-03)
	50	3.99E-01(1.10E-03)†	3.57E-01(4.73E-04)†	4.25E-01(7.59E-05)	7.38E-01(1.65E-02)‡	4.91E-01(8.33E-05)‡	4.19E-01(3.53E-03)
	200	4.31E-01(4.50E-03)†	3.97E-01(8.05E-05)†	5.74E-01(2.99E-02)	7.73E-01(9.36E-03)‡	5.09E-01(2.92E-04)‡	4.56E-01(1.34E-03)
+-=		44/6/2	38/10/4	44/5/3	45/5/2	35/7/10	—

TABLE 82
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 6 TO 7 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	9.89E-01(1.24E-05)†	9.97E-01(1.60E-06)†	9.85E-01(2.00E-05)†	1.91E-02(8.43E-03)†	9.93E-01(1.84E-05)†	1.00E+00(1.45E-11)
	25	9.99E-01(6.75E-07)†	1.00E+00(6.39E-11)	1.00E+00(9.24E-08)†	0.00E+00(0.00E+00)†	1.00E+00(7.73E-10)†	1.00E+00(8.66E-11)
	50	6.95E-01(1.10E-01)†	1.00E+00(5.39E-13)	4.66E-01(1.09E-01)†	0.00E+00(0.00E+00)†	1.00E+00(1.50E-10)†	1.00E+00(8.82E-12)
	200	4.60E-01(1.33E-01)†	1.00E+00(0.00E+00)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	1.00E+00(6.55E-11)†	1.00E+00(1.18E-11)
F2	5	9.09E-01(2.23E-04)†	9.93E-01(1.22E-06)‡	9.76E-01(1.20E-05)†	1.58E-01(3.40E-02)†	9.92E-01(6.12E-07)†	9.98E-01(1.47E-07)
	25	9.72E-01(2.49E-05)†	9.98E-01(6.96E-09)†	9.46E-01(1.21E-04)†	0.00E+00(0.00E+00)†	9.98E-01(3.54E-09)†	9.99E-01(1.23E-08)
	50	9.26E-01(2.58E-04)†	9.98E-01(3.38E-09)†	8.95E-01(3.32E-04)†	1.15E-02(1.95E-03)†	9.99E-01(5.75E-10)†	9.99E-01(5.39E-10)
	200	8.93E-01(6.15E-04)†	9.98E-01(4.57E-10)†	8.74E-01(5.55E-04)†	3.20E-02(1.49E-02)†	9.99E-01(2.31E-10)	9.99E-01(3.54E-10)
F3	5	8.40E-01(5.13E-04)†	9.80E-01(1.35E-05)†	7.99E-01(7.23E-04)†	1.58E-01(3.40E-02)†	8.98E-01(4.76E-04)†	9.98E-01(2.94E-06)
	25	9.71E-01(4.19E-05)†	9.98E-01(2.09E-08)†	9.71E-01(9.43E-05)†	0.00E+00(0.00E+00)†	9.96E-01(1.70E-06)‡	9.97E-01(1.36E-06)
	50	5.84E-01(5.85E-02)†	9.98E-01(5.17E-09)†	3.55E-01(7.82E-02)†	0.00E+00(0.00E+00)†	9.97E-01(3.70E-07)†	9.98E-01(2.80E-07)
	200	8.60E-02(2.67E-02)†	9.98E-01(1.04E-09)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	9.98E-01(2.06E-07)†	9.98E-01(1.24E-07)
F4	5	8.74E-01(3.08E-03)†	9.21E-01(2.22E-03)	9.89E-01(1.41E-05)‡	9.83E-01(4.08E-05)‡	9.94E-01(3.25E-06)‡	9.20E-01(4.12E-03)
	25	9.80E-01(4.33E-05)‡	9.98E-01(8.22E-07)‡	9.08E-01(1.83E-04)†	9.89E-01(2.51E-06)‡	9.98E-01(1.69E-07)‡	9.36E-01(1.57E-03)
	50	8.74E-01(4.69E-04)†	9.99E-01(9.38E-10)‡	8.40E-01(8.42E-05)†	9.89E-01(3.30E-06)‡	9.99E-01(1.87E-10)‡	9.25E-01(2.96E-03)
	200	8.21E-01(2.39E-04)†	9.99E-01(1.28E-10)‡	8.09E-01(9.27E-05)†	9.87E-01(6.23E-07)‡	9.99E-01(2.16E-11)‡	9.40E-01(3.71E-03)
WFG1	5	9.78E-01(2.87E-05)†	9.27E-01(1.11E-04)†	9.70E-01(8.05E-05)†	1.97E-01(3.94E-03)†	9.75E-01(5.66E-05)†	9.94E-01(1.88E-06)
	25	9.89E-01(1.22E-05)†	9.42E-01(3.84E-05)†	9.88E-01(2.53E-05)†	1.56E-01(1.89E-03)†	9.92E-01(5.35E-06)†	9.95E-01(3.30E-06)
	50	9.93E-01(3.43E-06)†	9.48E-01(3.24E-05)†	9.93E-01(1.44E-06)†	1.46E-01(1.77E-03)†	9.95E-01(2.14E-06)	9.95E-01(8.31E-07)
	200	9.97E-01(1.57E-07)‡	9.57E-01(2.70E-05)†	9.97E-01(9.98E-08)‡	1.45E-01(1.74E-03)†	9.97E-01(2.32E-07)‡	9.95E-01(5.30E-07)
WFG2	5	9.75E-01(6.05E-05)†	9.44E-01(5.53E-05)†	9.92E-01(2.70E-06)†	1.72E-01(3.19E-08)†	9.95E-01(1.22E-06)†	1.00E+00(4.03E-09)
	25	9.97E-01(6.40E-07)†	9.68E-01(2.15E-05)†	9.97E-01(3.24E-07)†	1.72E-01(5.28E-10)†	1.00E+00(2.58E-09)†	1.00E+00(1.01E-09)
	50	9.98E-01(1.88E-07)†	9.75E-01(9.78E-06)†	9.98E-01(1.61E-07)†	1.72E-01(1.29E-10)†	1.00E+00(2.20E-10)†	1.00E+00(8.37E-10)
	200	9.99E-01(6.19E-08)†	9.83E-01(6.09E-06)†	9.99E-01(8.70E-08)†	1.72E-01(1.57E-10)†	1.00E+00(8.61E-12)	1.00E+00(5.19E-11)
WFG3	5	6.54E-01(8.59E-09)†	6.04E-01(3.79E-04)†	6.99E-01(1.43E-05)‡	1.79E-01(3.00E-07)†	6.77E-01(1.64E-05)‡	6.70E-01(1.18E-04)
	25	6.81E-01(2.21E-04)‡	6.45E-01(8.59E-05)†	6.96E-01(2.99E-05)‡	1.80E-01(2.18E-08)†	6.68E-01(4.49E-05)‡	6.62E-01(8.87E-05)
	50	7.00E-01(2.01E-05)‡	6.58E-01(6.23E-05)	6.98E-01(3.51E-05)‡	1.80E-01(1.20E-08)†	6.65E-01(4.06E-05)‡	6.56E-01(9.19E-05)
	200	7.01E-01(1.81E-05)‡	6.72E-01(1.71E-05)‡	6.99E-01(2.88E-05)‡	1.80E-01(1.39E-09)†	6.56E-01(5.00E-05)‡	6.44E-01(2.10E-04)
WFG4	5	6.58E-01(5.40E-04)†	6.22E-01(1.57E-03)†	6.75E-01(2.32E-04)†	2.57E-01(4.40E-04)†	7.93E-01(1.27E-04)†	9.24E-01(1.05E-05)
	25	7.41E-01(3.70E-04)†	7.04E-01(2.64E-04)†	6.92E-01(6.18E-04)†	3.00E-01(1.85E-04)†	9.37E-01(4.23E-05)†	9.41E-01(3.73E-06)
	50	7.28E-01(2.90E-04)†	7.28E-01(3.18E-04)†	6.89E-01(5.16E-04)†	2.77E-01(2.34E-04)†	9.47E-01(5.28E-07)†	9.48E-01(3.46E-07)
	200	7.64E-01(9.97E-04)†	7.88E-01(1.37E-04)†	7.33E-01(7.58E-04)†	2.72E-01(6.51E-06)†	9.45E-01(2.72E-07)†	9.46E-01(5.55E-07)
WFG5	5	5.54E-01(1.11E-03)†	6.50E-01(5.61E-04)†	6.60E-01(1.24E-04)†	4.60E-01(4.54E-05)†	7.91E-01(6.99E-05)†	8.40E-01(7.95E-05)
	25	7.05E-01(3.47E-04)†	6.86E-01(2.43E-04)†	6.77E-01(4.62E-04)†	4.53E-01(2.55E-05)†	8.80E-01(4.72E-06)†	8.86E-01(3.01E-06)
	50	6.92E-01(2.58E-04)†	7.04E-01(1.47E-04)†	6.87E-01(4.24E-04)†	4.43E-01(2.41E-05)†	8.88E-01(2.01E-06)†	8.93E-01(2.91E-06)
	200	6.97E-01(3.63E-04)†	7.59E-01(4.39E-05)†	7.07E-01(4.00E-04)†	4.37E-01(7.40E-06)†	8.95E-01(6.74E-07)	8.95E-01(1.16E-06)
WFG6	5	4.53E-01(8.30E-04)†	5.62E-01(1.37E-03)†	6.19E-01(1.03E-03)†	8.60E-02(1.75E-05)†	7.18E-01(8.42E-04)†	8.08E-01(9.96E-04)
	25	6.81E-01(6.08E-04)†	6.73E-01(2.91E-04)†	7.01E-01(8.03E-04)†	8.59E-02(4.24E-05)†	8.31E-01(4.02E-03)	8.38E-01(1.54E-03)
	50	7.29E-01(3.93E-04)†	7.08E-01(2.16E-04)†	7.35E-01(5.56E-04)†	8.72E-02(2.70E-05)†	8.35E-01(3.88E-03)	8.39E-01(9.42E-04)
	200	7.81E-01(3.11E-04)†	7.52E-01(1.89E-04)†	7.80E-01(3.40E-04)†	8.85E-02(1.73E-05)†	9.04E-01(3.47E-03)	8.82E-01(2.75E-03)
WFG7	5	7.90E-01(5.55E-04)†	5.19E-01(1.56E-03)†	7.59E-01(3.62E-04)†	5.70E-01(1.22E-03)†	9.00E-01(4.62E-05)†	9.19E-01(4.34E-05)
	25	7.93E-01(4.69E-04)†	7.25E-01(2.58E-04)†	7.97E-01(2.09E-04)†	7.69E-01(4.09E-04)†	9.48E-01(3.64E-07)†	9.48E-01(3.15E-07)
	50	8.20E-01(2.63E-04)†	7.53E-01(3.26E-04)†	8.20E-01(1.51E-04)†	8.09E-01(3.38E-04)†	9.48E-01(2.89E-07)†	9.49E-01(2.96E-07)
	200	8.47E-01(3.01E-05)†	8.14E-01(1.24E-04)†	8.48E-01(3.73E-05)†	8.53E-01(2.26E-04)†	9.48E-01(7.97E-08)	9.48E-01(8.23E-08)
WFG8	5	7.88E-01(2.88E-04)†	5.00E-01(1.96E-03)†	7.60E-01(3.30E-04)†	5.71E-01(8.48E-04)†	8.98E-01(4.91E-05)†	9.20E-01(3.29E-05)
	25	7.96E-01(4.26E-04)†	7.26E-01(2.14E-04)†	7.96E-01(2.41E-04)†	7.67E-01(2.71E-04)†	9.48E-01(3.68E-07)	9.48E-01(3.49E-07)
	50	8.19E-01(2.27E-04)†	7.58E-01(2.03E-04)†	8.21E-01(1.82E-04)†	7.96E-01(3.10E-04)†	9.48E-01(3.68E-07)†	9.49E-01(2.37E-07)
	200	8.45E-01(4.75E-05)†	8.15E-01(1.15E-04)†	8.48E-01(2.94E-05)†	8.52E-01(2.10E-04)†	9.48E-01(9.01E-08)†	9.48E-01(4.04E-08)
WFG9	5	2.66E-01(3.65E-03)†	1.90E-01(1.33E-03)†	3.80E-01(2.04E-05)	6.19E-01(2.36E-02)‡	4.12E-01(6.34E-05)‡	3.55E-01(1.96E-03)
	25	3.41E-01(1.23E-03)	2.47E-01(1.12E-03)†	4.93E-01(1.31E-02)‡	7.68E-01(8.84E-03)‡	4.39E-01(1.43E-04)‡	3.59E-01(4.42E-03)
	50	3.54E-01(2.75E-03)†	2.74E-01(7.59E-04)†	7.00E-01(1.01E-02)‡	7.59E-01(1.43E-02)‡	4.46E-01(1.45E-04)‡	3.69E-01(4.09E-03)
	200	4.63E-01(3.04E-02)	3.56E-01(1.22E-02)†	8.18E-01(7.17E-03)‡	7.74E-01(8.46E-03)‡	4.64E-01(3.59E-04)‡	4.06E-01(1.19E-03)
+-=		45/3/4	40/9/3	48/1/3	20/31/1	33/6/13	—

TABLE 83
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 7 TO 6 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	9.93E-01(8.76E-06)†	9.98E-01(1.24E-06)†	9.86E-01(1.86E-05)†	3.37E-03(3.41E-04)†	9.95E-01(1.23E-05)†	1.00E+00(1.55E-11)
	25	9.17E-01(4.07E-02)†	1.00E+00(4.19E-10)†	8.63E-01(7.47E-02)†	0.00E+00(0.00E+00)†	1.00E+00(3.95E-10)†	1.00E+00(2.10E-10)
	50	2.20E-01(1.09E-01)†	1.00E+00(4.90E-12)†	2.42E-02(8.57E-03)†	0.00E+00(0.00E+00)†	1.00E+00(1.56E-09)†	1.00E+00(6.50E-12)
	200	6.63E-02(3.05E-02)†	1.00E+00(1.11E-31)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	1.00E+00(6.75E-10)†	1.00E+00(1.03E-10)
F2	5	9.40E-01(9.89E-05)†	9.91E-01(9.26E-07)†	9.75E-01(1.33E-05)†	7.24E-02(2.67E-02)†	9.93E-01(3.14E-07)†	9.96E-01(6.55E-07)
	25	9.53E-01(6.31E-05)†	9.95E-01(2.98E-08)†	9.05E-01(3.49E-04)†	0.00E+00(0.00E+00)†	9.96E-01(6.52E-09)†	9.96E-01(3.48E-09)
	50	9.05E-01(5.83E-04)†	9.95E-01(1.53E-08)†	8.65E-01(8.10E-04)†	1.51E-02(3.99E-03)†	9.96E-01(1.43E-09)†	9.96E-01(6.82E-10)
	200	8.92E-01(1.45E-03)†	9.96E-01(1.89E-09)†	8.69E-01(1.29E-03)†	1.60E-02(7.68E-03)†	9.96E-01(2.67E-10)	9.96E-01(3.90E-10)
F3	5	8.75E-01(4.93E-04)†	9.71E-01(7.17E-05)†	8.26E-01(7.08E-04)†	7.24E-02(2.67E-02)†	9.21E-01(4.72E-04)†	9.96E-01(1.46E-06)
	25	9.43E-01(5.83E-03)†	9.93E-01(4.45E-07)†	8.83E-01(3.50E-02)†	0.00E+00(0.00E+00)†	9.94E-01(1.13E-06)	9.94E-01(4.29E-06)
	50	2.05E-01(5.25E-02)†	9.94E-01(4.14E-08)†	1.34E-02(3.33E-03)†	0.00E+00(0.00E+00)†	9.94E-01(3.89E-06)†	9.96E-01(6.33E-07)
	200	1.58E-02(4.81E-03)†	9.96E-01(6.86E-09)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	9.95E-01(7.41E-07)†	9.96E-01(3.67E-07)
F4	5	9.48E-01(6.43E-04)	9.59E-01(1.49E-03)‡	9.86E-01(4.82E-06)‡	9.75E-01(6.24E-05)‡	9.94E-01(4.00E-07)‡	9.35E-01(3.05E-03)
	25	8.94E-01(6.18E-04)†	9.96E-01(9.61E-09)‡	7.60E-01(6.58E-04)†	9.92E-01(8.80E-07)‡	9.96E-01(1.11E-09)‡	9.52E-01(7.49E-04)
	50	7.01E-01(1.30E-03)†	9.96E-01(7.83E-09)‡	6.96E-01(1.01E-03)†	9.93E-01(1.33E-06)‡	9.96E-01(4.49E-10)‡	9.44E-01(2.64E-03)
	200	6.62E-01(5.60E-04)†	9.96E-01(5.95E-10)‡	6.61E-01(3.98E-04)†	9.95E-01(1.33E-08)‡	9.97E-01(5.34E-11)‡	9.29E-01(3.75E-03)
WFG1	5	9.81E-01(1.49E-05)†	9.22E-01(1.96E-04)†	9.72E-01(7.80E-05)†	3.23E-01(1.52E-02)†	9.74E-01(5.19E-05)†	9.94E-01(4.56E-06)
	25	9.88E-01(6.55E-06)†	9.28E-01(8.60E-05)†	9.85E-01(1.47E-05)†	2.47E-01(1.85E-02)†	9.92E-01(4.49E-06)†	9.95E-01(2.08E-06)
	50	9.91E-01(5.18E-06)†	9.38E-01(6.27E-05)†	9.88E-01(6.61E-06)†	2.66E-01(2.19E-02)†	9.94E-01(2.50E-06)†	9.95E-01(9.42E-07)
	200	9.94E-01(1.46E-06)†	9.52E-01(2.00E-05)†	9.94E-01(9.73E-07)†	2.35E-01(1.67E-02)†	9.97E-01(5.86E-07)‡	9.96E-01(4.78E-07)
WFG2	5	9.83E-01(1.39E-05)†	9.46E-01(3.29E-05)†	9.92E-01(2.90E-06)†	2.09E-01(6.58E-08)†	9.95E-01(8.11E-07)†	1.00E+00(7.99E-09)
	25	9.97E-01(9.09E-07)†	9.65E-01(1.83E-05)†	9.96E-01(5.42E-07)†	2.09E-01(1.36E-09)†	1.00E+00(1.85E-09)†	1.00E+00(6.51E-10)
	50	9.97E-01(3.40E-07)†	9.74E-01(9.24E-06)†	9.97E-01(3.93E-07)†	2.09E-01(9.59E-10)†	1.00E+00(2.48E-10)†	1.00E+00(4.36E-10)
	200	9.98E-01(1.01E-07)†	9.83E-01(2.95E-06)†	9.98E-01(1.75E-07)†	2.09E-01(7.57E-10)†	1.00E+00(8.69E-12)†	1.00E+00(3.15E-11)
WFG3	5	6.64E-01(1.37E-08)†	6.04E-01(3.78E-04)†	6.94E-01(3.25E-05)‡	2.16E-01(2.46E-07)†	6.81E-01(1.05E-05)†	6.86E-01(2.98E-05)
	25	6.99E-01(8.86E-05)‡	6.54E-01(7.97E-05)†	6.98E-01(1.90E-05)‡	2.19E-01(7.14E-08)†	6.78E-01(6.40E-05)	6.80E-01(1.01E-04)
	50	7.05E-01(1.43E-05)‡	6.67E-01(4.44E-05)†	7.01E-01(1.20E-05)‡	2.19E-01(4.05E-08)†	6.77E-01(6.76E-05)†	6.86E-01(2.30E-05)
	200	7.05E-01(1.64E-05)‡	6.83E-01(6.05E-06)†	7.05E-01(1.14E-05)‡	2.19E-01(3.19E-08)†	6.82E-01(2.59E-05)†	6.86E-01(1.86E-05)
WFG4	5	7.21E-01(5.06E-04)†	5.92E-01(1.02E-03)†	6.88E-01(1.83E-04)†	2.70E-01(4.54E-04)†	8.40E-01(1.13E-04)†	9.05E-01(7.03E-06)
	25	7.59E-01(1.92E-04)†	6.88E-01(5.23E-04)†	7.12E-01(4.88E-04)†	3.02E-01(4.65E-04)†	9.24E-01(4.63E-07)‡	9.20E-01(2.95E-06)
	50	7.76E-01(3.16E-04)†	7.36E-01(3.11E-04)†	7.43E-01(3.46E-04)†	2.81E-01(1.25E-04)†	9.25E-01(3.52E-07)†	9.26E-01(3.63E-07)
	200	8.15E-01(3.48E-04)†	7.97E-01(1.64E-04)†	7.89E-01(3.31E-04)†	2.90E-01(1.29E-05)†	9.23E-01(2.11E-07)	9.23E-01(1.74E-07)
WFG5	5	6.24E-01(7.32E-04)†	5.92E-01(7.00E-04)†	6.70E-01(2.09E-04)†	4.72E-01(2.11E-05)†	8.24E-01(3.37E-05)†	8.43E-01(1.84E-05)
	25	7.30E-01(1.63E-04)†	6.83E-01(2.13E-04)†	7.17E-01(2.41E-04)†	4.76E-01(2.55E-05)†	8.70E-01(8.13E-06)	8.71E-01(3.40E-06)
	50	7.31E-01(1.78E-04)†	7.24E-01(1.47E-04)†	7.36E-01(2.85E-04)†	4.66E-01(1.78E-05)†	8.76E-01(8.92E-07)†	8.77E-01(2.14E-06)
	200	7.50E-01(1.87E-04)†	7.80E-01(5.18E-05)†	7.52E-01(1.13E-04)†	4.63E-01(5.71E-06)†	8.87E-01(5.26E-07)‡	8.77E-01(3.82E-07)
WFG6	5	5.38E-01(7.39E-04)†	4.56E-01(2.36E-03)†	6.49E-01(9.46E-04)†	1.06E-01(1.62E-05)†	7.56E-01(8.02E-04)†	8.13E-01(9.15E-04)
	25	7.38E-01(3.99E-04)†	6.45E-01(2.65E-04)†	7.42E-01(2.85E-04)†	1.07E-01(3.61E-05)†	8.33E-01(2.71E-03)	8.35E-01(9.31E-04)
	50	7.78E-01(2.15E-04)†	6.98E-01(2.38E-04)†	7.78E-01(4.30E-04)†	1.09E-01(2.69E-05)†	8.41E-01(2.72E-03)‡	8.33E-01(5.79E-04)
	200	7.98E-01(2.97E-04)†	7.75E-01(1.48E-04)†	7.99E-01(2.76E-04)†	1.10E-01(1.98E-05)†	9.04E-01(1.18E-03)‡	8.39E-01(9.15E-04)
WFG7	5	7.96E-01(3.60E-04)†	5.22E-01(1.55E-03)†	7.56E-01(3.93E-04)†	5.63E-01(9.94E-04)†	9.00E-01(1.64E-05)†	9.19E-01(2.45E-06)
	25	8.13E-01(1.73E-04)†	7.43E-01(2.55E-04)†	7.93E-01(2.28E-04)†	7.53E-01(4.37E-04)†	9.27E-01(4.23E-07)‡	9.26E-01(2.00E-07)
	50	8.24E-01(8.40E-05)†	7.76E-01(1.38E-04)†	8.19E-01(9.02E-05)†	8.00E-01(3.76E-04)†	9.25E-01(2.47E-07)‡	9.24E-01(1.16E-07)
	200	8.38E-01(3.10E-05)†	8.38E-01(6.63E-05)†	8.39E-01(1.74E-05)†	8.37E-01(7.51E-05)†	9.24E-01(4.17E-08)†	9.25E-01(2.81E-08)
WFG8	5	7.90E-01(1.73E-04)†	5.07E-01(1.02E-03)†	7.64E-01(3.62E-04)†	5.66E-01(6.43E-04)†	9.00E-01(1.73E-05)†	9.19E-01(3.95E-06)
	25	8.14E-01(9.78E-05)†	7.45E-01(2.19E-04)†	7.94E-01(1.63E-04)†	7.53E-01(4.44E-04)†	9.27E-01(2.12E-07)‡	9.25E-01(4.09E-07)
	50	8.27E-01(5.92E-05)†	7.72E-01(1.63E-04)†	8.16E-01(4.36E-05)†	7.94E-01(3.44E-04)†	9.25E-01(3.43E-07)‡	9.24E-01(1.96E-07)
	200	8.39E-01(3.79E-05)†	8.35E-01(6.63E-05)†	8.38E-01(1.87E-05)†	8.37E-01(6.62E-05)†	9.24E-01(5.34E-08)†	9.25E-01(1.77E-08)
WFG9	5	3.28E-01(5.08E-03)†	2.43E-01(1.74E-03)†	4.17E-01(2.10E-05)	5.96E-01(1.84E-02)‡	4.87E-01(1.68E-03)‡	4.19E-01(2.35E-03)
	25	3.95E-01(1.11E-03)†	3.32E-01(4.61E-04)†	6.07E-01(2.20E-02)‡	7.65E-01(7.67E-03)‡	5.04E-01(8.53E-04)‡	4.21E-01(4.63E-03)
	50	4.13E-01(1.28E-03)†	3.58E-01(1.73E-03)†	7.99E-01(6.84E-04)‡	7.68E-01(1.15E-02)‡	5.12E-01(1.10E-03)‡	4.35E-01(3.76E-03)
	200	5.18E-01(2.55E-02)‡	4.96E-01(2.83E-02)‡	8.23E-01(4.92E-03)‡	7.87E-01(7.13E-03)‡	5.23E-01(6.28E-04)‡	4.82E-01(4.38E-04)
+-=		28/22/2	33/15/4	27/20/5	40/8/4	28/8/16	—

TABLE 84
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 6 TO 5 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	9.94E-01(7.94E-06)†	9.77E-01(2.59E-04)†	9.87E-01(1.17E-05)†	0.00E+00(0.00E+00)†	9.96E-01(1.27E-05)†	1.00E+00(3.54E-11)
	25	1.67E-01(1.03E-01)†	9.99E-01(3.08E-07)†	2.54E-02(9.86E-03)†	0.00E+00(0.00E+00)†	1.00E+00(3.36E-09)†	1.00E+00(1.12E-09)
	50	5.49E-02(3.39E-02)†	1.00E+00(7.75E-11)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	1.00E+00(4.97E-09)†	1.00E+00(5.67E-11)
	200	0.00E+00(0.00E+00)†	1.00E+00(4.35E-13)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	1.00E+00(3.41E-10)†	1.00E+00(3.88E-10)
F2	5	9.58E-01(3.88E-05)†	9.75E-01(9.66E-06)†	9.69E-01(9.81E-06)†	1.03E-01(2.72E-02)†	9.87E-01(3.18E-07)†	9.89E-01(5.09E-06)
	25	9.58E-01(5.67E-05)†	9.86E-01(1.58E-07)†	9.42E-01(1.48E-04)†	0.00E+00(0.00E+00)†	9.90E-01(1.96E-08)†	9.90E-01(8.84E-09)
	50	9.57E-01(8.08E-05)†	9.87E-01(8.94E-08)†	9.53E-01(4.03E-05)†	0.00E+00(0.00E+00)†	9.90E-01(6.64E-09)†	9.91E-01(1.84E-09)
	200	9.67E-01(4.22E-05)†	9.90E-01(5.22E-09)†	9.67E-01(3.11E-05)†	1.58E-02(7.51E-03)†	9.91E-01(1.87E-09)†	9.91E-01(4.06E-10)
F3	5	8.98E-01(4.41E-04)†	7.43E-01(1.03E-02)†	8.44E-01(9.22E-04)†	1.03E-01(2.72E-02)†	9.39E-01(5.72E-04)†	9.90E-01(4.05E-07)
	25	1.28E-01(4.90E-02)†	9.79E-01(1.17E-05)†	2.78E-02(1.39E-02)†	0.00E+00(0.00E+00)†	9.76E-01(1.96E-04)†	9.88E-01(3.70E-06)
	50	1.18E-02(4.18E-03)†	9.85E-01(2.84E-07)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	9.85E-01(7.93E-06)†	9.89E-01(2.78E-06)
	200	0.00E+00(0.00E+00)†	9.89E-01(3.06E-08)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	9.89E-01(2.49E-06)†	9.90E-01(2.21E-06)
F4	5	9.75E-01(1.54E-04)‡	9.75E-01(3.56E-04)‡	9.69E-01(2.76E-05)‡	9.60E-01(3.82E-05)‡	9.88E-01(2.55E-07)‡	9.25E-01(3.15E-03)
	25	8.45E-01(1.77E-03)†	9.88E-01(1.13E-07)‡	8.14E-01(8.68E-04)†	9.84E-01(2.89E-07)‡	9.90E-01(1.23E-08)‡	9.32E-01(2.15E-03)
	50	7.31E-01(2.90E-03)†	9.89E-01(6.58E-08)‡	8.74E-01(7.25E-04)†	9.86E-01(2.15E-07)‡	9.91E-01(5.19E-09)‡	9.18E-01(5.55E-03)
	200	9.00E-01(3.58E-04)†	9.90E-01(5.97E-09)‡	9.27E-01(1.89E-04)	9.87E-01(1.67E-08)‡	9.91E-01(2.08E-10)‡	9.09E-01(5.74E-03)
WFG1	5	9.74E-01(1.86E-05)†	8.89E-01(1.53E-04)†	9.63E-01(7.42E-05)†	2.93E-01(8.22E-03)†	9.69E-01(7.66E-05)†	9.94E-01(2.95E-06)
	25	9.77E-01(4.46E-05)†	9.03E-01(7.30E-05)†	9.66E-01(3.43E-05)†	2.81E-01(4.48E-04)†	9.85E-01(3.36E-05)†	9.95E-01(1.36E-06)
	50	9.78E-01(1.33E-05)†	9.19E-01(6.42E-05)†	9.74E-01(2.04E-05)†	2.89E-01(8.28E-04)†	9.84E-01(2.33E-05)†	9.95E-01(8.16E-07)
	200	9.90E-01(1.16E-06)†	9.42E-01(2.58E-05)†	9.90E-01(1.20E-06)†	2.86E-01(9.60E-04)†	9.96E-01(1.47E-07)‡	9.95E-01(3.70E-07)
WFG2	5	9.85E-01(1.26E-05)†	8.95E-01(5.30E-04)†	9.87E-01(7.45E-06)†	2.12E-01(8.27E-08)†	9.93E-01(1.93E-06)†	9.99E-01(1.24E-08)
	25	9.94E-01(8.03E-07)†	9.50E-01(5.50E-05)†	9.92E-01(1.60E-06)†	2.12E-01(6.87E-08)†	9.99E-01(8.17E-08)†	9.99E-01(2.65E-09)
	50	9.94E-01(4.33E-07)†	9.63E-01(5.69E-05)†	9.94E-01(4.78E-07)†	2.12E-01(5.89E-08)†	9.99E-01(1.21E-08)†	9.99E-01(1.04E-09)
	200	9.95E-01(3.68E-07)†	9.77E-01(1.63E-05)†	9.95E-01(3.73E-07)†	2.11E-01(3.73E-08)†	9.99E-01(1.08E-10)†	9.99E-01(1.28E-10)
WFG3	5	6.78E-01(3.97E-07)‡	5.66E-01(1.08E-03)†	6.83E-01(7.75E-05)†	2.18E-01(6.61E-07)†	6.68E-01(3.28E-04)†	6.89E-01(2.39E-05)
	25	7.06E-01(1.76E-05)‡	6.45E-01(7.15E-04)†	7.00E-01(2.46E-05)‡	2.20E-01(2.10E-07)†	6.72E-01(1.47E-04)†	6.91E-01(2.58E-05)
	50	7.08E-01(8.26E-06)‡	6.59E-01(4.55E-04)†	7.05E-01(8.78E-06)‡	2.20E-01(1.83E-07)†	6.77E-01(1.73E-04)†	6.91E-01(2.55E-05)
	200	7.12E-01(7.15E-06)‡	6.81E-01(2.40E-04)	7.10E-01(1.06E-05)‡	2.21E-01(2.39E-08)†	6.88E-01(5.66E-05)†	6.91E-01(2.69E-05)
WFG4	5	7.63E-01(1.31E-04)†	5.97E-01(1.64E-03)†	6.89E-01(1.46E-04)†	2.86E-01(2.65E-04)†	8.48E-01(2.58E-05)†	8.75E-01(5.65E-06)
	25	7.90E-01(1.03E-04)†	7.16E-01(3.05E-04)†	7.58E-01(1.24E-04)†	3.39E-01(8.90E-05)†	8.90E-01(2.13E-07)‡	8.89E-01(4.69E-07)
	50	8.03E-01(1.15E-04)†	7.57E-01(1.23E-04)†	7.79E-01(8.82E-05)†	3.43E-01(9.48E-05)†	8.91E-01(1.96E-07)	8.90E-01(2.36E-07)
	200	8.21E-01(6.24E-05)†	8.14E-01(4.48E-05)†	8.06E-01(1.16E-04)†	3.31E-01(9.64E-06)†	8.91E-01(7.26E-08)‡	8.91E-01(1.34E-07)
WFG5	5	6.97E-01(4.56E-04)†	6.20E-01(2.77E-04)†	6.75E-01(1.87E-04)†	5.09E-01(2.63E-05)†	8.08E-01(1.10E-05)†	8.23E-01(6.20E-06)
	25	7.51E-01(6.95E-05)†	7.35E-01(6.43E-05)†	7.37E-01(1.07E-04)†	5.08E-01(1.99E-05)†	8.45E-01(4.98E-06)	8.44E-01(3.93E-06)
	50	7.63E-01(4.88E-05)†	7.63E-01(6.07E-05)†	7.52E-01(8.96E-05)†	5.05E-01(1.56E-05)†	8.52E-01(1.11E-06)‡	8.47E-01(2.28E-07)
	200	7.69E-01(7.65E-05)†	7.99E-01(1.82E-05)†	7.69E-01(7.62E-05)†	5.01E-01(5.89E-06)†	8.62E-01(2.91E-07)‡	8.47E-01(2.15E-07)
WFG6	5	6.31E-01(7.38E-04)†	4.07E-01(2.82E-03)†	6.56E-01(9.35E-04)†	1.26E-01(9.99E-06)†	7.52E-01(6.84E-04)†	8.00E-01(7.57E-04)
	25	7.59E-01(1.96E-04)†	6.72E-01(5.99E-04)†	7.54E-01(1.49E-04)†	1.28E-01(3.59E-05)†	8.14E-01(1.94E-03)	8.18E-01(6.03E-04)
	50	7.85E-01(1.01E-04)†	7.26E-01(2.42E-04)†	7.83E-01(9.04E-05)†	1.30E-01(2.62E-05)†	8.25E-01(1.84E-03)‡	8.16E-01(3.76E-04)
	200	8.07E-01(8.61E-05)†	8.12E-01(1.16E-04)	8.05E-01(8.92E-05)†	1.31E-01(2.13E-05)†	8.75E-01(6.88E-04)‡	8.19E-01(4.36E-04)
WFG7	5	7.86E-01(1.05E-04)†	5.42E-01(8.04E-04)†	7.37E-01(2.31E-04)†	5.48E-01(5.11E-04)†	8.64E-01(1.40E-05)†	8.84E-01(1.55E-06)
	25	8.06E-01(4.65E-05)†	7.25E-01(2.35E-04)†	7.86E-01(5.75E-05)†	7.64E-01(2.56E-04)†	8.90E-01(7.09E-07)†	8.91E-01(3.33E-07)
	50	8.15E-01(3.19E-05)†	7.67E-01(1.06E-04)†	8.08E-01(5.79E-05)†	7.94E-01(1.30E-04)†	8.91E-01(2.73E-07)†	8.91E-01(1.10E-07)
	200	8.26E-01(2.86E-05)†	8.25E-01(2.43E-05)†	8.25E-01(1.74E-05)†	8.10E-01(7.56E-05)†	8.92E-01(5.21E-08)†	8.92E-01(2.53E-08)
WFG8	5	7.86E-01(1.57E-04)†	5.32E-01(1.06E-03)†	7.41E-01(2.24E-04)†	5.48E-01(5.50E-04)†	8.63E-01(1.70E-05)†	8.85E-01(2.04E-06)
	25	8.08E-01(4.11E-05)†	7.25E-01(4.29E-04)†	7.88E-01(6.32E-05)†	7.59E-01(3.47E-04)†	8.89E-01(9.91E-07)†	8.91E-01(1.95E-07)
	50	8.16E-01(3.24E-05)†	7.67E-01(2.68E-04)†	8.08E-01(6.26E-05)†	7.88E-01(1.64E-04)†	8.91E-01(3.90E-07)†	8.92E-01(1.43E-07)
	200	8.26E-01(2.27E-05)†	8.27E-01(4.82E-05)†	8.25E-01(2.45E-05)†	8.13E-01(5.71E-05)†	8.92E-01(6.74E-08)†	8.92E-01(1.69E-08)
WFG9	5	3.82E-01(7.09E-03)†	3.26E-01(2.11E-03)†	4.52E-01(3.02E-04)‡	5.70E-01(1.09E-02)‡	5.18E-01(1.35E-03)‡	4.64E-01(1.50E-03)
	25	4.47E-01(1.47E-03)†	4.37E-01(1.43E-04)†	6.61E-01(2.23E-02)‡	7.68E-01(6.55E-03)‡	5.33E-01(6.67E-04)‡	4.72E-01(3.06E-03)
	50	4.80E-01(4.89E-03)	4.65E-01(2.85E-03)†	8.10E-01(6.54E-05)‡	7.65E-01(9.55E-03)‡	5.48E-01(1.17E-03)‡	4.70E-01(3.13E-03)
	200	5.72E-01(2.25E-02)	5.72E-01(2.20E-02)	8.16E-01(3.65E-03)‡	7.80E-01(5.52E-03)‡	5.58E-01(1.12E-03)‡	5.09E-01(1.08E-03)
+-=		28/22/2	33/15/4	27/20/5	40/8/4	28/8/16	—

TABLE 85
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 5 TO 4 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	9.95E-01(7.32E-06)†	8.63E-01(1.96E-03)†	9.87E-01(2.03E-05)†	0.00E+00(0.00E+00)†	9.96E-01(1.44E-05)†	1.00E+00(3.00E-10)
	25	2.00E-02(4.64E-03)†	9.98E-01(3.66E-07)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	9.97E-01(3.24E-05)†	1.00E+00(7.91E-09)
	50	1.59E-02(7.59E-03)†	1.00E+00(3.98E-10)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	9.99E-01(5.28E-06)†	1.00E+00(5.27E-09)
	200	3.40E-01(1.38E-01)†	1.00E+00(7.54E-12)	9.78E-02(3.72E-02)†	0.00E+00(0.00E+00)†	1.00E+00(7.55E-09)	1.00E+00(7.37E-09)
F2	5	9.61E-01(1.59E-05)†	9.47E-01(1.26E-05)†	9.55E-01(8.16E-06)†	8.64E-02(2.34E-02)†	9.70E-01(1.12E-06)†	9.74E-01(7.62E-08)
	25	9.64E-01(3.55E-06)†	9.67E-01(3.34E-07)†	9.62E-01(5.38E-06)†	0.00E+00(0.00E+00)†	9.73E-01(2.65E-08)†	9.74E-01(1.38E-08)
	50	9.67E-01(1.22E-06)†	9.70E-01(1.30E-07)†	9.67E-01(5.98E-07)†	0.00E+00(0.00E+00)†	9.74E-01(1.01E-08)†	9.75E-01(3.45E-09)
	200	9.69E-01(7.70E-07)†	9.74E-01(1.12E-08)†	9.68E-01(9.37E-07)†	0.00E+00(0.00E+00)†	9.75E-01(1.66E-08)†	9.75E-01(4.61E-10)
F3	5	9.06E-01(4.53E-04)†	5.27E-01(2.71E-03)†	8.43E-01(8.17E-04)†	8.64E-02(2.34E-02)†	9.40E-01(4.32E-04)†	9.74E-01(2.61E-07)
	25	0.00E+00(0.00E+00)†	9.43E-01(1.09E-04)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	8.81E-01(2.50E-02)†	9.72E-01(1.02E-05)
	50	0.00E+00(0.00E+00)†	9.65E-01(1.64E-06)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	9.28E-01(1.42E-02)†	9.72E-01(1.35E-05)
	200	1.76E-02(6.86E-03)†	9.72E-01(3.25E-08)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	9.73E-01(7.07E-06)†	9.74E-01(7.60E-06)
F4	5	9.68E-01(1.86E-05)‡	9.62E-01(5.67E-05)‡	9.45E-01(6.26E-05)‡	9.14E-01(2.03E-04)	9.70E-01(1.31E-06)‡	9.13E-01(2.63E-03)
	25	9.34E-01(2.83E-04)	9.68E-01(4.58E-07)	9.54E-01(2.91E-05)	9.64E-01(3.04E-06)	9.74E-01(2.30E-08)‡	9.26E-01(3.07E-03)
	50	9.49E-01(7.38E-05)‡	9.70E-01(2.02E-07)‡	9.66E-01(1.52E-06)‡	9.67E-01(3.30E-07)‡	9.75E-01(1.26E-08)‡	9.20E-01(3.54E-03)
	200	9.70E-01(2.31E-07)	9.74E-01(2.25E-08)	9.70E-01(4.40E-07)	9.69E-01(6.26E-08)	9.75E-01(7.75E-10)	9.08E-01(5.78E-03)
WFG1	5	9.61E-01(4.72E-05)†	8.56E-01(1.25E-04)†	9.42E-01(1.95E-04)†	4.83E-01(1.26E-03)†	9.61E-01(5.28E-05)†	9.90E-01(2.43E-06)
	25	9.59E-01(5.27E-05)†	8.84E-01(8.91E-05)†	9.43E-01(2.50E-05)†	4.39E-01(5.60E-03)†	9.61E-01(1.55E-04)†	9.92E-01(8.53E-07)
	50	9.65E-01(1.62E-05)†	9.01E-01(9.40E-05)†	9.59E-01(2.95E-05)†	4.58E-01(3.59E-03)†	9.73E-01(1.70E-05)†	9.92E-01(6.41E-07)
	200	9.86E-01(5.89E-07)†	9.36E-01(2.46E-05)†	9.86E-01(4.26E-07)†	4.60E-01(3.41E-03)†	9.93E-01(9.06E-08)‡	9.92E-01(8.62E-07)
WFG2	5	9.84E-01(6.71E-06)†	8.99E-01(9.55E-05)†	9.79E-01(1.50E-05)†	2.55E-01(2.30E-07)†	9.86E-01(5.87E-06)†	9.94E-01(3.18E-08)
	25	9.86E-01(2.90E-06)†	9.54E-01(1.99E-05)†	9.86E-01(1.51E-06)†	2.56E-01(1.42E-08)†	9.94E-01(1.83E-07)†	9.95E-01(9.40E-09)
	50	9.89E-01(1.32E-06)†	9.64E-01(3.62E-06)†	9.89E-01(5.68E-07)†	2.56E-01(9.14E-09)†	9.94E-01(3.13E-08)†	9.95E-01(1.86E-09)
	200	9.91E-01(5.13E-07)†	9.78E-01(2.10E-06)†	9.90E-01(4.58E-07)†	2.56E-01(7.87E-11)†	9.95E-01(1.24E-09)	9.95E-01(1.04E-09)
WFG3	5	6.97E-01(4.21E-07)‡	6.21E-01(4.09E-05)†	6.75E-01(9.66E-05)†	2.64E-01(1.45E-06)†	6.85E-01(1.04E-04)†	7.03E-01(1.59E-05)
	25	7.14E-01(7.26E-06)‡	6.91E-01(1.72E-05)†	7.07E-01(7.98E-06)†	2.66E-01(1.37E-07)†	6.93E-01(7.98E-05)†	7.10E-01(6.43E-06)
	50	7.16E-01(3.24E-06)‡	7.03E-01(6.27E-06)†	7.14E-01(1.74E-06)‡	2.67E-01(7.12E-08)†	6.99E-01(1.22E-05)†	7.10E-01(2.09E-06)
	200	7.19E-01(1.72E-06)‡	7.12E-01(1.08E-06)‡	7.19E-01(1.90E-06)‡	2.67E-01(2.50E-08)†	7.08E-01(2.93E-06)†	7.09E-01(2.60E-06)
WFG4	5	7.59E-01(5.13E-05)†	6.14E-01(1.24E-03)†	6.84E-01(1.38E-04)†	3.17E-01(1.13E-04)†	8.08E-01(7.11E-06)†	8.27E-01(1.63E-06)
	25	7.81E-01(3.89E-05)†	7.47E-01(2.54E-05)†	7.54E-01(3.29E-05)†	3.64E-01(6.15E-05)†	8.35E-01(1.36E-07)†	8.35E-01(1.78E-07)
	50	7.87E-01(1.90E-05)†	7.66E-01(1.09E-05)†	7.68E-01(3.28E-05)†	3.70E-01(5.90E-05)†	8.36E-01(7.38E-08)†	8.37E-01(7.05E-08)
	200	7.93E-01(1.66E-05)†	7.93E-01(1.91E-06)†	7.84E-01(2.22E-05)†	3.73E-01(3.13E-06)†	8.38E-01(1.14E-08)†	8.39E-01(6.79E-09)
WFG5	5	7.18E-01(7.39E-05)†	6.53E-01(1.64E-04)†	6.67E-01(1.51E-04)†	5.51E-01(1.41E-05)†	7.67E-01(9.08E-06)†	7.80E-01(2.41E-06)
	25	7.45E-01(1.00E-05)†	7.46E-01(2.47E-05)†	7.29E-01(3.09E-05)†	5.60E-01(1.01E-05)†	7.99E-01(1.68E-06)‡	7.96E-01(2.36E-06)
	50	7.51E-01(2.42E-05)†	7.59E-01(5.89E-06)†	7.43E-01(2.15E-05)†	5.61E-01(8.02E-06)†	8.07E-01(1.46E-06)‡	7.97E-01(8.31E-08)
	200	7.56E-01(2.38E-05)†	7.75E-01(2.15E-06)†	7.55E-01(3.35E-05)†	5.58E-01(5.42E-06)†	8.14E-01(1.31E-07)‡	7.97E-01(1.06E-07)
WFG6	5	6.90E-01(3.81E-04)†	4.93E-01(9.85E-04)†	6.53E-01(7.98E-04)†	1.50E-01(4.06E-06)†	7.04E-01(7.21E-04)†	7.55E-01(1.20E-03)
	25	7.50E-01(1.03E-04)†	7.37E-01(5.59E-05)†	7.45E-01(5.22E-05)†	1.54E-01(2.78E-05)†	7.73E-01(1.38E-03)	7.78E-01(3.51E-04)
	50	7.74E-01(2.85E-05)	7.67E-01(1.28E-05)†	7.71E-01(3.56E-05)†	1.56E-01(2.11E-05)†	7.84E-01(1.24E-03)‡	7.77E-01(2.47E-04)
	200	7.89E-01(2.01E-05)‡	8.02E-01(2.00E-06)‡	7.87E-01(3.97E-05)	1.58E-01(2.21E-05)†	8.24E-01(4.25E-04)‡	7.80E-01(2.72E-04)
WFG7	5	7.62E-01(7.84E-05)†	5.36E-01(5.17E-04)†	7.13E-01(1.24E-04)†	5.58E-01(3.13E-04)†	8.04E-01(1.67E-05)†	8.32E-01(9.75E-07)
	25	7.84E-01(2.56E-05)†	6.90E-01(2.12E-04)†	7.69E-01(3.34E-05)†	7.32E-01(8.23E-05)†	8.33E-01(3.71E-07)†	8.36E-01(1.02E-07)
	50	7.92E-01(9.28E-06)†	7.27E-01(1.29E-04)†	7.88E-01(9.71E-06)†	7.50E-01(8.64E-05)†	8.35E-01(2.23E-07)†	8.38E-01(5.12E-08)
	200	8.02E-01(6.91E-06)†	7.89E-01(1.31E-05)†	8.01E-01(8.51E-06)†	7.67E-01(4.77E-05)†	8.39E-01(7.29E-09)†	8.39E-01(2.98E-09)
WFG8	5	7.64E-01(1.01E-04)†	5.34E-01(4.52E-04)†	7.11E-01(2.10E-04)†	5.62E-01(2.65E-04)†	8.03E-01(2.56E-05)†	8.32E-01(1.21E-06)
	25	7.86E-01(2.36E-05)†	6.90E-01(2.20E-04)†	7.70E-01(3.60E-05)†	7.29E-01(1.07E-04)†	8.33E-01(4.44E-07)†	8.37E-01(9.84E-08)
	50	7.93E-01(1.66E-05)†	7.29E-01(8.19E-05)†	7.88E-01(1.54E-05)†	7.49E-01(6.33E-05)†	8.35E-01(1.80E-07)†	8.38E-01(3.35E-08)
	200	8.01E-01(6.60E-06)†	7.89E-01(1.20E-05)†	8.00E-01(6.97E-06)†	7.68E-01(1.68E-05)†	8.39E-01(6.62E-09)†	8.39E-01(2.50E-09)
WFG9	5	4.04E-01(4.85E-03)†	4.09E-01(2.08E-03)†	4.66E-01(9.01E-06)†	5.21E-01(6.39E-03)‡	5.12E-01(7.45E-04)‡	4.83E-01(1.78E-03)
	25	4.72E-01(7.49E-04)†	4.96E-01(3.33E-06)†	6.81E-01(1.71E-02)‡	7.34E-01(5.36E-03)‡	5.40E-01(6.27E-04)‡	5.01E-01(1.52E-03)
	50	5.03E-01(2.84E-03)‡	5.12E-01(2.07E-03)‡	7.89E-01(1.49E-05)‡	7.24E-01(7.72E-03)‡	5.42E-01(3.65E-04)‡	5.02E-01(2.89E-03)
	200	5.84E-01(1.63E-02)	5.90E-01(1.64E-02)	7.90E-01(2.64E-03)‡	7.31E-01(3.25E-03)‡	5.58E-01(4.52E-04)‡	5.27E-01(1.88E-03)
+-=		28/22/2	33/15/4	27/20/5	40/8/4	28/8/16	—

TABLE 86
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 4 TO 3 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	9.86E-01(5.66E-05)†	7.90E-01(5.65E-04)†	9.77E-01(6.35E-05)†	0.00E+00(0.00E+00)†	9.91E-01(4.31E-05)†	9.97E-01(3.14E-10)
	25	0.00E+00(0.00E+00)†	9.94E-01(8.14E-06)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	9.71E-01(3.22E-03)†	9.97E-01(1.28E-09)
	50	5.96E-02(3.57E-02)†	9.96E-01(9.37E-09)†	4.77E-03(7.06E-04)†	0.00E+00(0.00E+00)†	9.93E-01(4.24E-05)†	9.97E-01(1.78E-09)
	200	9.96E-01(1.69E-05)†	9.97E-01(7.63E-11)†	9.96E-01(5.63E-07)†	9.39E-02(4.36E-02)†	9.97E-01(3.35E-07)†	9.97E-01(5.02E-09)
F2	5	9.23E-01(4.37E-07)†	8.94E-01(1.61E-05)†	9.13E-01(6.28E-06)†	6.58E-01(4.57E-03)†	9.22E-01(2.19E-06)†	9.29E-01(3.86E-08)
	25	9.25E-01(6.23E-07)†	9.22E-01(3.84E-07)†	9.25E-01(3.90E-07)†	9.19E-01(3.91E-06)†	9.29E-01(5.68E-08)†	9.30E-01(3.82E-08)
	50	9.26E-01(5.49E-07)†	9.25E-01(1.39E-07)†	9.26E-01(1.15E-06)†	9.25E-01(5.50E-07)†	9.30E-01(5.07E-08)†	9.30E-01(1.08E-08)
	200	9.26E-01(1.54E-06)†	9.29E-01(3.63E-09)†	9.26E-01(1.69E-06)†	9.27E-01(2.29E-08)†	9.30E-01(9.22E-09)†	9.30E-01(1.01E-09)
F3	5	8.72E-01(8.95E-04)†	5.03E-01(1.07E-04)†	8.17E-01(1.52E-03)†	6.58E-01(4.57E-03)†	8.95E-01(4.98E-04)†	9.29E-01(8.64E-08)
	25	0.00E+00(0.00E+00)†	8.95E-01(1.05E-04)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	7.61E-01(6.56E-02)†	9.28E-01(2.97E-05)
	50	0.00E+00(0.00E+00)†	9.20E-01(1.74E-06)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	8.02E-01(5.01E-02)†	9.30E-01(1.38E-06)
	200	9.26E-01(2.05E-06)†	9.28E-01(5.53E-08)†	9.24E-01(5.08E-06)†	4.00E-03(3.87E-04)†	9.28E-01(4.14E-05)†	9.30E-01(1.21E-06)
F4	5	9.20E-01(7.86E-06)‡	9.09E-01(1.74E-05)‡	8.91E-01(1.26E-04)	8.46E-01(3.18E-04)†	9.23E-01(2.74E-06)‡	8.74E-01(7.10E-02)
	25	9.21E-01(8.65E-06)	9.21E-01(1.00E-06)	9.25E-01(4.42E-07)	9.20E-01(1.38E-05)	9.29E-01(1.22E-07)	8.73E-01(4.07E-03)
	50	9.26E-01(2.32E-07)‡	9.25E-01(2.79E-07)‡	9.27E-01(1.86E-07)‡	9.26E-01(4.86E-06)‡	9.30E-01(3.68E-08)‡	9.09E-01(2.38E-03)
	200	9.27E-01(5.44E-07)‡	9.29E-01(6.74E-09)‡	9.27E-01(5.45E-07)‡	9.28E-01(2.18E-08)‡	9.30E-01(9.99E-09)	8.97E-01(3.39E-03)
WFG1	5	9.30E-01(4.01E-05)†	8.08E-01(1.10E-04)†	9.04E-01(3.69E-04)†	4.13E-01(1.53E-04)†	9.30E-01(5.83E-05)†	9.67E-01(1.58E-06)
	25	9.28E-01(4.51E-05)†	8.59E-01(1.02E-04)†	9.14E-01(4.75E-05)†	4.01E-01(9.52E-05)†	9.28E-01(8.47E-05)†	9.69E-01(5.84E-07)
	50	9.41E-01(5.33E-06)†	8.86E-01(5.75E-05)†	9.36E-01(4.51E-05)†	3.97E-01(1.09E-04)†	9.50E-01(7.99E-06)†	9.69E-01(3.94E-07)
	200	9.64E-01(2.50E-07)†	9.31E-01(2.02E-05)†	9.64E-01(7.64E-07)†	4.05E-01(6.64E-05)†	9.70E-01(5.93E-08)‡	9.69E-01(1.16E-06)
WFG2	5	9.47E-01(2.03E-05)†	8.53E-01(1.66E-04)†	9.34E-01(3.14E-05)†	2.71E-01(7.49E-07)†	9.46E-01(2.61E-05)†	9.64E-01(9.32E-08)
	25	9.57E-01(1.62E-06)†	9.25E-01(1.68E-05)†	9.56E-01(1.26E-06)†	2.74E-01(4.72E-08)†	9.63E-01(3.61E-07)†	9.65E-01(1.75E-08)
	50	9.60E-01(6.44E-07)†	9.39E-01(6.98E-06)†	9.60E-01(6.23E-07)†	2.75E-01(6.42E-09)†	9.64E-01(5.40E-08)†	9.65E-01(1.85E-08)
	200	9.62E-01(2.97E-07)†	9.52E-01(1.38E-06)†	9.61E-01(1.82E-07)†	2.75E-01(4.95E-10)†	9.65E-01(8.50E-09)‡	9.65E-01(8.00E-09)
WFG3	5	7.19E-01(2.05E-06)‡	6.36E-01(2.84E-04)†	6.56E-01(2.02E-04)†	2.84E-01(3.10E-06)†	6.69E-01(5.81E-04)†	7.21E-01(5.14E-07)
	25	7.21E-01(7.91E-06)‡	7.02E-01(3.22E-05)†	7.16E-01(2.64E-06)†	2.89E-01(1.66E-07)†	6.98E-01(1.08E-04)†	7.23E-01(4.03E-07)
	50	7.23E-01(7.82E-07)‡	7.12E-01(1.24E-05)†	7.22E-01(1.13E-06)	2.90E-01(2.92E-08)†	7.12E-01(1.60E-05)†	7.22E-01(5.78E-07)
	200	7.26E-01(6.38E-07)‡	7.19E-01(1.78E-06)†	7.26E-01(4.82E-07)‡	2.90E-01(7.32E-09)†	7.20E-01(9.01E-07)†	7.21E-01(6.20E-07)
WFG4	5	7.08E-01(1.56E-05)†	6.07E-01(9.71E-05)†	6.52E-01(5.43E-05)†	3.52E-01(9.67E-05)†	7.26E-01(6.57E-06)†	7.40E-01(3.93E-07)
	25	7.21E-01(7.07E-06)†	6.78E-01(9.08E-06)†	7.06E-01(6.82E-06)†	4.00E-01(1.80E-05)†	7.42E-01(3.74E-08)†	7.44E-01(2.59E-08)
	50	7.24E-01(8.79E-06)†	6.90E-01(5.32E-06)†	7.14E-01(5.75E-06)†	4.10E-01(9.96E-06)†	7.44E-01(1.14E-08)†	7.44E-01(7.01E-09)
	200	7.28E-01(2.11E-06)†	7.07E-01(2.34E-06)†	7.25E-01(3.99E-06)†	4.23E-01(1.80E-06)†	7.45E-01(7.22E-10)†	7.45E-01(5.82E-10)
WFG5	5	6.75E-01(1.20E-05)†	6.15E-01(9.59E-05)†	6.28E-01(8.42E-05)†	6.07E-01(2.00E-05)†	6.89E-01(1.28E-05)†	6.96E-01(4.98E-06)
	25	6.91E-01(1.38E-05)†	6.76E-01(6.52E-06)†	6.79E-01(2.99E-05)†	6.22E-01(4.19E-06)†	7.14E-01(2.54E-06)‡	7.07E-01(1.50E-05)
	50	6.95E-01(1.75E-05)†	6.85E-01(3.91E-06)†	6.90E-01(2.04E-05)†	6.22E-01(2.73E-06)†	7.23E-01(1.41E-06)‡	7.11E-01(1.44E-07)
	200	6.99E-01(8.56E-06)†	6.93E-01(5.62E-06)†	6.98E-01(9.08E-06)†	6.23E-01(3.40E-06)†	7.28E-01(4.57E-09)‡	7.11E-01(1.18E-08)
WFG6	5	6.55E-01(3.97E-04)†	5.23E-01(5.47E-04)†	6.01E-01(5.95E-04)†	1.83E-01(2.87E-06)†	6.15E-01(9.29E-04)†	6.91E-01(3.19E-04)
	25	7.00E-01(6.80E-05)	6.64E-01(5.33E-05)†	6.98E-01(3.54E-05)	1.90E-01(2.39E-05)†	6.93E-01(9.55E-04)	6.99E-01(2.00E-04)
	50	7.16E-01(1.08E-05)‡	6.87E-01(2.78E-05)†	7.15E-01(1.12E-05)‡	1.94E-01(2.52E-05)†	7.04E-01(8.49E-04)	6.99E-01(1.56E-04)
	200	7.28E-01(3.27E-06)‡	7.15E-01(4.69E-06)‡	7.28E-01(4.99E-06)‡	1.96E-01(2.27E-05)†	7.35E-01(2.84E-04)‡	7.01E-01(1.84E-04)
WFG7	5	7.00E-01(6.13E-05)†	4.91E-01(4.02E-04)†	6.57E-01(6.44E-05)†	5.60E-01(1.99E-04)†	7.10E-01(3.41E-05)†	7.41E-01(3.32E-07)
	25	7.25E-01(7.68E-06)†	6.15E-01(7.93E-05)†	7.16E-01(9.21E-06)†	6.97E-01(7.64E-06)†	7.41E-01(3.21E-07)†	7.44E-01(2.42E-08)
	50	7.29E-01(3.20E-06)†	6.60E-01(6.80E-05)†	7.27E-01(3.46E-06)†	7.12E-01(4.63E-06)†	7.43E-01(5.49E-08)†	7.45E-01(4.22E-09)
	200	7.35E-01(1.89E-06)†	7.08E-01(5.21E-06)†	7.35E-01(1.28E-06)†	7.25E-01(1.78E-06)†	7.45E-01(1.09E-09)†	7.45E-01(2.76E-10)
WFG8	5	7.01E-01(5.21E-05)†	4.85E-01(3.40E-04)†	6.54E-01(9.93E-05)†	5.59E-01(2.43E-04)†	7.11E-01(2.09E-05)†	7.41E-01(2.09E-07)
	25	7.25E-01(7.19E-06)†	6.18E-01(1.80E-04)†	7.16E-01(5.40E-06)†	6.95E-01(2.06E-05)†	7.41E-01(4.24E-07)†	7.44E-01(2.53E-08)
	50	7.29E-01(3.57E-06)†	6.61E-01(5.00E-05)†	7.27E-01(3.68E-06)†	7.12E-01(4.80E-06)†	7.43E-01(1.87E-08)†	7.45E-01(6.35E-09)
	200	7.35E-01(1.04E-06)†	7.08E-01(7.72E-06)†	7.35E-01(1.25E-06)†	7.25E-01(2.00E-06)†	7.45E-01(4.23E-10)†	7.45E-01(1.96E-10)
WFG9	5	4.17E-01(4.62E-03)†	4.38E-01(6.72E-04)†	4.67E-01(5.96E-04)†	4.68E-01(2.43E-03)	4.73E-01(3.22E-04)†	4.89E-01(5.46E-04)
	25	4.83E-01(3.18E-04)†	4.71E-01(4.89E-05)†	6.42E-01(1.29E-02)‡	6.83E-01(3.30E-03)‡	5.01E-01(4.90E-04)	4.94E-01(1.98E-04)
	50	5.00E-01(2.05E-03)‡	4.83E-01(1.35E-03)†	7.23E-01(3.17E-06)‡	6.80E-01(4.74E-03)‡	5.11E-01(3.60E-04)‡	4.98E-01(3.15E-04)
	200	5.64E-01(1.02E-02)‡	5.46E-01(1.08E-02)	7.22E-01(1.56E-03)‡	6.98E-01(2.00E-03)‡	5.20E-01(3.48E-04)‡	4.99E-01(4.90E-04)
+-=		28/22/2	33/15/4	27/20/5	40/8/4	28/8/16	—

TABLE 87
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 3 TO 2 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	3.44E-01(3.95E-02)†	2.85E-01(3.46E-02)†	4.36E-01(5.06E-02)†	0.00E+00(0.00E+00)†	8.11E-01(3.71E-02)†	9.69E-01(2.54E-10)
	25	0.00E+00(0.00E+00)†	8.96E-01(5.12E-03)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	7.86E-01(7.24E-02)†	9.69E-01(3.80E-10)
	50	4.05E-01(1.01E-01)†	9.67E-01(4.07E-07)†	2.70E-01(8.15E-02)†	0.00E+00(0.00E+00)†	9.29E-01(1.41E-02)†	9.68E-01(1.04E-05)
	200	9.69E-01(8.96E-10)†	9.69E-01(8.12E-12)‡	9.69E-01(5.65E-10)†	6.62E-01(8.22E-02)†	9.69E-01(2.18E-10)†	9.69E-01(2.95E-10)
F2	5	7.97E-01(1.02E-06)†	6.61E-01(8.24E-04)‡	7.86E-01(1.17E-05)†	5.97E-01(1.05E-02)†	7.86E-01(1.80E-04)†	8.03E-01(1.76E-10)
	25	8.03E-01(8.67E-09)†	7.90E-01(5.47E-05)†	8.03E-01(2.88E-09)†	8.02E-01(2.09E-08)†	8.02E-01(5.90E-06)†	8.03E-01(1.82E-10)
	50	8.03E-01(6.37E-10)†	7.97E-01(9.44E-06)†	8.03E-01(3.18E-10)†	8.03E-01(3.76E-10)†	8.03E-01(4.93E-10)†	8.03E-01(6.75E-12)
	200	8.03E-01(8.55E-11)†	8.02E-01(9.67E-07)†	8.03E-01(1.54E-10)†	8.03E-01(6.89E-11)†	8.03E-01(3.02E-10)	8.03E-01(2.52E-10)
F3	5	1.86E-01(1.30E-02)†	2.19E-01(1.54E-02)†	1.36E-01(2.16E-02)†	5.97E-01(1.05E-02)†	5.31E-01(4.65E-02)†	8.03E-01(7.71E-07)
	25	0.00E+00(0.00E+00)†	5.84E-01(6.91E-03)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	3.84E-01(1.17E-01)†	8.03E-01(5.67E-10)
	50	2.37E-02(1.74E-02)†	7.80E-01(1.43E-04)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	6.52E-01(6.31E-02)†	8.03E-01(2.08E-02)
	200	8.03E-01(2.82E-08)†	8.00E-01(5.79E-06)†	8.03E-01(1.95E-08)†	5.20E-01(1.28E-01)†	8.03E-01(2.93E-10)	8.03E-01(2.08E-02)
F4	5	7.60E-01(3.38E-04)†	6.44E-01(9.71E-04)†	7.26E-01(3.24E-04)†	7.50E-01(1.01E-04)†	7.91E-01(2.22E-04)†	8.04E-01(1.67E-01)
	25	8.02E-01(1.34E-07)†	7.90E-01(3.78E-05)†	8.03E-01(2.11E-08)†	8.02E-01(9.70E-08)†	8.03E-01(7.89E-08)†	8.03E-01(3.51E-09)
	50	8.03E-01(8.75E-10)†	7.98E-01(1.18E-05)†	8.03E-01(8.13E-10)†	8.03E-01(1.39E-09)†	8.03E-01(1.57E-09)†	8.03E-01(2.49E-09)
	200	8.03E-01(8.64E-11)‡	8.01E-01(2.10E-06)†	8.03E-01(1.45E-10)‡	8.03E-01(1.10E-10)†	8.03E-01(1.52E-09)‡	8.03E-01(1.66E-01)
WFG1	5	7.66E-01(2.09E-05)†	5.64E-01(1.91E-04)†	7.43E-01(1.89E-04)†	3.45E-01(4.88E-07)†	7.65E-01(2.20E-05)†	8.03E-01(9.19E-07)
	25	7.78E-01(1.16E-05)†	7.01E-01(1.10E-04)†	7.71E-01(1.14E-05)†	3.49E-01(2.30E-08)†	7.72E-01(2.47E-05)†	8.03E-01(5.24E-07)
	50	7.93E-01(1.20E-06)†	7.37E-01(1.39E-04)†	7.91E-01(1.99E-06)†	3.49E-01(2.99E-09)†	7.92E-01(1.57E-06)†	8.03E-01(7.64E-07)
	200	8.03E-01(1.01E-07)†	7.81E-01(1.12E-05)†	8.03E-01(6.78E-08)†	3.49E-01(4.76E-11)†	8.04E-01(3.94E-08)‡	8.03E-01(8.50E-07)
WFG2	5	7.40E-01(2.10E-05)†	5.96E-01(7.35E-04)†	7.28E-01(1.76E-05)†	3.41E-01(3.46E-06)†	7.39E-01(3.35E-05)†	7.64E-01(5.63E-09)
	25	7.62E-01(2.05E-07)†	7.01E-01(7.84E-05)†	7.62E-01(3.35E-07)†	3.45E-01(3.30E-08)†	7.62E-01(5.03E-07)†	7.64E-01(6.14E-08)
	50	7.64E-01(1.34E-08)†	7.11E-01(3.21E-05)†	7.64E-01(1.62E-08)†	3.45E-01(3.89E-10)†	7.64E-01(6.21E-08)†	7.64E-01(1.91E-08)
	200	7.64E-01(1.25E-10)‡	7.22E-01(1.10E-06)†	7.64E-01(1.88E-10)‡	3.45E-01(2.43E-12)†	7.64E-01(6.92E-09)	7.64E-01(1.63E-08)
WFG3	5	7.28E-01(4.26E-06)†	5.74E-01(2.11E-04)†	5.77E-01(1.22E-04)†	3.61E-01(2.16E-06)†	6.91E-01(6.32E-04)†	7.32E-01(5.18E-09)
	25	7.27E-01(5.25E-06)†	7.12E-01(3.42E-06)†	7.25E-01(1.46E-06)†	3.65E-01(2.23E-08)†	7.16E-01(6.06E-05)†	7.32E-01(7.50E-02)
	50	7.30E-01(1.80E-07)†	7.23E-01(8.95E-07)†	7.30E-01(1.29E-07)†	3.65E-01(5.09E-09)†	7.26E-01(1.04E-05)†	7.32E-01(4.84E-02)
	200	7.32E-01(2.92E-09)†	7.30E-01(7.63E-08)†	7.32E-01(2.64E-09)†	3.65E-01(4.82E-11)†	7.32E-01(6.44E-08)†	7.32E-01(9.01E-11)
WFG4	5	5.61E-01(5.31E-06)†	4.42E-01(3.02E-04)†	5.24E-01(1.85E-05)†	3.15E-01(4.37E-05)†	5.64E-01(3.91E-05)†	5.80E-01(9.91E-10)
	25	5.79E-01(9.84E-07)†	5.33E-01(2.00E-05)†	5.73E-01(1.19E-06)†	3.39E-01(1.47E-05)†	5.79E-01(9.30E-07)†	5.80E-01(2.34E-08)
	50	5.80E-01(3.86E-07)†	5.48E-01(4.27E-06)†	5.78E-01(1.96E-07)†	3.51E-01(6.27E-06)†	5.80E-01(2.82E-09)†	5.80E-01(6.33E-11)
	200	5.80E-01(1.33E-08)†	5.60E-01(7.10E-06)†	5.80E-01(4.81E-09)†	3.57E-01(1.59E-08)†	5.80E-01(8.63E-09)†	5.80E-01(9.47E-11)
WFG5	5	5.45E-01(1.79E-06)†	4.48E-01(2.51E-04)†	5.05E-01(3.35E-05)†	5.55E-01(1.40E-05)‡	5.40E-01(4.02E-05)†	5.52E-01(3.66E-06)
	25	5.54E-01(6.09E-07)‡	5.40E-01(4.47E-06)†	5.46E-01(1.45E-05)†	5.67E-01(3.04E-06)‡	5.55E-01(6.10E-06)‡	5.52E-01(3.54E-06)
	50	5.55E-01(1.33E-06)†	5.44E-01(3.13E-06)†	5.51E-01(1.65E-05)	5.68E-01(5.27E-06)‡	5.63E-01(3.74E-06)‡	5.53E-01(8.75E-07)
	200	5.57E-01(1.32E-06)‡	5.47E-01(1.02E-05)†	5.56E-01(1.96E-06)‡	5.71E-01(1.81E-05)‡	5.68E-01(3.26E-07)‡	5.53E-01(4.31E-07)
WFG6	5	5.22E-01(2.24E-04)†	3.58E-01(2.79E-04)†	4.91E-01(2.42E-04)†	2.34E-01(5.53E-06)†	4.79E-01(1.18E-03)†	5.46E-01(1.14E-04)
	25	5.66E-01(2.26E-05)‡	5.43E-01(2.76E-05)	5.66E-01(7.37E-06)‡	2.45E-01(3.87E-05)†	5.43E-01(5.05E-04)	5.48E-01(1.88E-02)
	50	5.75E-01(1.72E-06)‡	5.61E-01(5.65E-06)‡	5.74E-01(2.00E-06)‡	2.49E-01(3.66E-05)†	5.51E-01(4.48E-04)	5.45E-01(7.68E-02)
	200	5.79E-01(6.60E-07)‡	5.73E-01(2.54E-06)‡	5.78E-01(5.11E-07)‡	2.51E-01(2.95E-05)†	5.74E-01(1.47E-04)‡	5.49E-01(9.23E-05)
WFG7	5	5.54E-01(2.32E-05)†	2.90E-01(1.78E-04)†	5.23E-01(4.13E-05)†	4.92E-01(2.01E-04)†	5.42E-01(9.60E-05)†	5.80E-01(3.21E-09)
	25	5.78E-01(1.24E-06)†	4.99E-01(1.81E-04)†	5.75E-01(7.03E-07)†	5.66E-01(3.59E-06)†	5.76E-01(3.65E-06)†	5.80E-01(3.04E-02)
	50	5.79E-01(6.64E-08)†	5.53E-01(1.64E-05)†	5.79E-01(6.99E-08)†	5.75E-01(2.54E-07)†	5.80E-01(9.35E-09)†	5.80E-01(5.59E-11)
	200	5.80E-01(3.75E-10)†	5.73E-01(5.40E-06)†	5.80E-01(4.09E-10)†	5.80E-01(3.33E-09)†	5.80E-01(1.29E-08)	5.80E-01(4.08E-11)
WFG8	5	5.52E-01(3.34E-05)†	2.86E-01(1.70E-04)†	5.23E-01(4.07E-05)†	4.96E-01(2.14E-04)†	5.43E-01(9.15E-05)†	5.80E-01(3.63E-09)
	25	5.78E-01(1.18E-06)†	5.01E-01(2.68E-04)†	5.75E-01(6.23E-07)†	5.66E-01(3.60E-06)†	5.77E-01(2.87E-06)†	5.80E-01(2.10E-02)
	50	5.79E-01(7.44E-08)†	5.54E-01(1.62E-05)†	5.79E-01(9.33E-08)†	5.75E-01(2.06E-07)†	5.80E-01(4.19E-07)†	5.80E-01(3.03E-11)
	200	5.80E-01(6.21E-10)†	5.73E-01(4.24E-06)†	5.80E-01(3.46E-10)†	5.80E-01(2.99E-09)†	5.80E-01(7.07E-09)†	5.80E-01(2.96E-11)
WFG9	5	3.84E-01(1.33E-04)	3.34E-01(9.44E-05)†	3.61E-01(5.16E-06)†	4.10E-01(1.56E-03)‡	3.68E-01(3.02E-04)†	3.89E-01(6.12E-05)
	25	3.96E-01(4.23E-05)	3.76E-01(7.12E-06)†	5.19E-01(7.17E-03)‡	5.49E-01(1.59E-03)‡	4.01E-01(2.08E-04)	3.98E-01(4.05E-02)
	50	4.17E-01(1.26E-03)‡	3.88E-01(9.66E-04)†	5.75E-01(3.50E-07)‡	5.47E-01(1.73E-03)‡	4.06E-01(9.13E-05)‡	3.95E-01(3.83E-02)
	200	4.72E-01(4.68E-03)‡	4.39E-01(6.26E-03)	5.73E-01(9.15E-04)‡	5.58E-01(1.03E-03)‡	4.15E-01(1.54E-04)‡	3.94E-01(5.48E-05)
+-=		28/22/2	33/15/4	27/20/5	40/8/4	28/8/16	—

TABLE 88
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 2 TO 3 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.83E-03(7.22E-10)†	3.25E-03(2.45E-06)†	1.75E-02(7.60E-03)†	8.27E+00(3.16E+01)†	1.90E-03(1.55E-08)†	1.74E-03(3.34E-09)
	25	1.89E-03(1.23E-07)‡	3.58E-03(9.93E-07)‡	1.93E-03(1.59E-07)‡	5.45E+00(5.70E+01)†	4.52E-03(9.21E-05)‡	1.29E-02(1.92E-03)
	50	3.51E-03(2.74E-05)†	2.93E-03(3.96E-07)‡	6.39E-03(2.63E-04)†	8.15E-01(8.46E-01)†	4.48E-02(2.14E-02)†	4.04E-03(1.47E-04)
	200	5.77E-03(1.09E-04)†	1.83E-03(9.26E-09)‡	4.66E-03(4.56E-05)‡	1.19E-01(9.53E-06)†	1.06E-02(1.42E-03)†	6.04E-03(5.14E-04)
F2	5	5.54E-03(4.07E-08)†	4.18E-02(8.07E-05)†	1.30E-02(2.57E-05)†	3.26E-01(6.50E-04)†	1.84E-02(1.86E-05)†	5.04E-03(3.18E-08)
	25	7.30E-03(1.43E-07)†	3.06E-02(9.68E-06)†	7.59E-03(3.64E-07)†	2.32E-01(1.10E-04)†	6.52E-03(5.05E-07)†	4.76E-03(2.28E-08)
	50	7.90E-03(2.00E-07)†	2.03E-02(3.77E-06)†	8.00E-03(4.39E-07)†	2.31E-01(3.28E-05)†	5.13E-03(5.96E-08)†	4.58E-03(2.02E-08)
	200	8.20E-03(2.06E-07)†	6.81E-03(4.13E-08)†	8.32E-03(2.54E-07)†	2.54E-01(3.97E-05)†	4.41E-03(8.40E-09)	4.42E-03(6.13E-09)
F3	5	5.31E-03(8.53E-09)†	6.90E-03(3.19E-06)†	4.85E-02(4.99E-02)†	3.16E+01(5.28E+02)†	5.42E-03(7.23E-07)†	4.67E-03(6.86E-08)
	25	5.42E-03(4.62E-07)‡	1.17E-02(1.22E-05)‡	8.26E-03(1.18E-04)‡	1.55E+01(6.10E+02)†	4.85E-02(2.99E-02)†	2.64E-02(1.25E-02)
	50	1.20E-02(1.15E-03)†	8.76E-03(3.75E-06)†	7.69E-03(1.04E-04)‡	5.58E+00(5.70E+01)†	4.21E-02(1.83E-02)†	8.16E-03(4.18E-04)
	200	2.92E-02(1.09E-02)‡	5.26E-03(2.85E-07)‡	1.28E-02(8.56E-04)‡	2.37E-01(8.55E-05)‡	6.18E-02(3.95E-02)	3.37E-02(2.67E-02)
F4	5	3.16E-03(1.25E-08)‡	2.81E-03(4.18E-08)‡	1.66E-02(4.27E-05)†	3.04E-01(4.02E-04)†	1.28E-02(2.85E-05)†	3.75E-03(8.68E-06)
	25	3.62E-03(1.66E-07)†	6.51E-03(1.89E-04)†	6.44E-03(5.27E-06)†	3.32E-01(8.06E-04)†	5.82E-03(1.79E-07)†	2.68E-03(2.25E-08)
	50	7.21E-03(7.59E-07)†	1.80E-02(3.12E-04)	7.73E-03(1.78E-07)†	3.29E-01(1.83E-03)†	4.81E-03(3.74E-08)†	2.66E-03(4.04E-08)
	200	8.05E-03(2.27E-07)†	1.01E-02(2.02E-06)†	8.11E-03(3.04E-07)†	2.65E-01(1.82E-03)†	4.39E-03(1.14E-08)†	2.58E-03(1.63E-08)
WFG1	5	2.95E-02(1.25E-05)‡	4.08E-01(3.88E-03)†	3.31E-02(1.98E-05)	3.73E-01(6.57E-05)†	2.89E-02(3.31E-05)‡	3.09E-02(8.06E-06)
	25	4.09E-02(3.04E-05)†	3.50E-01(9.88E-04)†	4.47E-02(4.43E-05)†	4.55E-01(3.95E-05)†	4.75E-02(2.33E-05)†	2.97E-02(1.47E-06)
	50	4.53E-02(1.66E-05)†	2.29E-01(7.82E-04)†	4.49E-02(1.23E-05)†	4.48E-01(3.27E-05)†	3.49E-02(1.02E-05)†	2.97E-02(3.84E-06)
	200	5.13E-02(1.20E-05)†	9.68E-02(7.94E-05)†	5.09E-02(4.77E-06)†	4.46E-01(3.16E-05)†	2.97E-02(1.67E-06)‡	3.04E-02(2.53E-06)
WFG2	5	7.85E-02(6.64E-06)†	2.06E-01(1.05E-03)†	8.38E-02(1.04E-05)†	6.46E-01(1.17E-05)†	9.59E-02(1.39E-04)†	7.42E-02(1.39E-05)
	25	7.64E-02(1.94E-05)†	1.31E-01(4.87E-05)†	7.77E-02(3.28E-05)†	6.40E-01(3.11E-05)†	6.75E-02(1.51E-05)	6.59E-02(1.19E-05)
	50	7.90E-02(2.22E-05)†	1.07E-01(1.87E-05)†	7.98E-02(3.63E-05)†	6.45E-01(2.60E-05)‡	6.59E-02(1.45E-05)	6.68E-02(7.62E-06)
	200	8.62E-02(1.17E-04)†	8.03E-02(2.69E-06)†	8.66E-02(1.34E-04)†	6.49E-01(5.06E-06)†	6.71E-02(3.86E-06)	6.70E-02(4.22E-06)
WFG3	5	5.30E-04(1.76E-08)‡	3.61E-02(1.66E-04)†	7.16E-02(2.37E-03)†	4.38E-01(6.60E-05)†	6.70E-02(9.06E-04)†	1.41E-02(2.69E-04)
	25	4.43E-04(6.77E-09)‡	8.12E-01(1.40E-04)†	2.47E-01(1.97E-02)‡	4.39E-01(1.83E-04)†	4.86E-01(1.42E-03)†	3.67E-01(2.02E-03)
	50	4.75E-04(8.30E-09)‡	8.31E-01(1.78E-05)†	3.88E-01(2.95E-03)‡	4.36E-01(1.23E-04)	5.38E-01(3.21E-04)†	4.32E-01(2.44E-03)
	200	3.01E-02(6.40E-03)‡	8.36E-01(2.58E-07)†	4.52E-01(2.30E-02)‡	4.28E-01(7.31E-05)‡	5.28E-01(1.04E-04)	5.32E-01(1.03E-04)
WFG4	5	1.90E-02(1.14E-06)‡	2.03E-01(3.07E-04)‡	4.40E-02(3.36E-05)†	6.59E-01(3.82E-04)†	5.32E-02(3.91E-05)†	2.15E-02(7.39E-07)
	25	4.40E-02(5.18E-06)†	1.84E-01(1.07E-04)†	4.61E-02(3.93E-06)†	5.71E-01(1.50E-04)†	2.53E-02(2.27E-06)†	1.88E-02(1.71E-07)
	50	4.91E-02(5.67E-06)†	1.64E-01(6.54E-05)†	4.96E-02(7.35E-06)†	5.51E-01(1.29E-04)†	1.92E-02(1.83E-07)†	1.80E-02(1.60E-07)
	200	5.32E-02(6.22E-06)†	1.21E-01(1.68E-05)†	5.24E-02(6.23E-06)†	5.20E-01(6.41E-05)†	1.80E-02(2.12E-07)	1.80E-02(1.72E-07)
WFG5	5	7.65E-02(1.16E-06)†	3.37E-01(1.95E-03)†	9.30E-02(1.41E-05)†	7.84E-01(2.55E-03)†	9.96E-02(3.26E-05)†	7.55E-02(3.29E-07)
	25	8.69E-02(1.36E-06)†	1.47E-01(2.24E-04)†	8.96E-02(3.03E-06)†	4.40E-01(8.43E-04)†	7.56E-02(3.92E-07)†	7.27E-02(5.00E-08)
	50	8.79E-02(1.54E-06)†	1.23E-01(5.37E-05)†	8.97E-02(2.36E-06)†	4.50E-01(4.49E-04)†	7.28E-02(1.19E-07)†	7.21E-02(4.20E-08)
	200	8.89E-02(2.11E-06)†	8.99E-02(1.07E-05)†	8.91E-02(7.49E-06)†	4.43E-01(6.05E-04)†	7.19E-02(6.29E-09)	7.19E-02(1.32E-08)
WFG6	5	9.84E-02(1.50E-03)	2.60E-01(1.29E-03)†	1.08E-01(1.29E-03)	1.19E+00(2.02E-04)†	1.32E-01(1.09E-03)†	1.15E-01(9.78E-04)
	25	1.15E-01(1.09E-03)	1.85E-01(1.03E-04)†	1.01E-01(1.14E-03)	1.12E+00(5.26E-03)†	1.43E-01(1.05E-02)	1.04E-01(1.29E-03)
	50	1.10E-01(8.97E-04)	1.43E-01(6.03E-05)†	1.07E-01(9.41E-04)	1.03E+00(9.73E-05)†	1.46E-01(9.08E-03)	9.74E-02(6.09E-04)
	200	1.08E-01(1.14E-03)	8.62E-02(2.12E-05)	1.11E-01(1.10E-03)†	1.01E+00(3.23E-05)†	1.24E-01(7.31E-03)	9.30E-02(7.09E-04)
WFG7	5	2.81E-02(5.12E-06)†	4.81E-01(1.24E-03)†	3.28E-02(1.31E-05)†	5.32E-01(3.18E-03)†	3.81E-02(2.63E-05)†	2.11E-02(9.40E-07)
	25	3.00E-02(2.50E-06)†	3.01E-01(5.09E-04)†	3.05E-02(3.14E-06)†	2.93E-01(1.78E-04)†	1.99E-02(8.58E-07)†	1.83E-02(1.60E-07)
	50	3.08E-02(2.82E-06)†	2.32E-01(3.04E-04)†	3.10E-02(2.64E-06)†	2.71E-01(1.65E-04)†	1.82E-02(2.10E-07)	1.80E-02(1.30E-07)
	200	3.18E-02(4.23E-06)†	1.27E-01(8.60E-05)†	3.13E-02(3.10E-06)†	2.61E-01(7.37E-05)†	1.85E-02(1.23E-07)	1.85E-02(1.48E-07)
WFG8	5	2.79E-02(6.41E-06)†	4.77E-01(1.03E-03)†	3.23E-02(9.25E-06)†	5.39E-01(2.00E-03)†	3.97E-02(3.59E-05)†	2.18E-02(1.35E-06)
	25	3.03E-02(2.17E-06)†	2.97E-01(3.90E-04)†	3.11E-02(3.09E-06)†	2.96E-01(1.39E-04)†	1.97E-02(5.45E-07)†	1.83E-02(2.46E-07)
	50	3.16E-02(3.22E-06)†	2.36E-01(3.01E-04)†	3.05E-02(2.28E-06)†	2.72E-01(6.84E-05)†	1.82E-02(2.45E-07)	1.80E-02(1.82E-07)
	200	3.16E-02(3.35E-06)†	1.30E-01(7.53E-05)†	3.14E-02(3.10E-06)†	2.63E-01(2.32E-04)†	1.86E-02(8.62E-08)	1.86E-02(6.92E-08)
WFG9	5	5.45E-01(2.85E-03)‡	6.71E-01(3.65E-04)†	6.03E-01(9.32E-04)	4.54E-01(1.42E-02)‡	6.00E-01(7.45E-04)	5.90E-01(3.86E-03)
	25	6.05E-01(3.25E-03)†	6.07E-01(3.45E-05)†	6.25E-01(4.12E-04)†	3.75E-01(6.89E-03)‡	5.92E-01(3.38E-04)†	5.69E-01(8.98E-04)
	50	6.14E-01(2.62E-03)†	5.92E-01(2.11E-05)†	6.29E-01(5.99E-04)†	3.95E-01(5.92E-03)‡	5.75E-01(4.72E-04)†	5.59E-01(1.69E-03)
	200	6.25E-01(1.44E-03)†	5.73E-01(8.95E-06)	6.25E-01(6.57E-04)†	3.84E-01(7.63E-03)‡	5.70E-01(2.45E-04)	5.62E-01(5.30E-04)

TABLE 89
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 3 TO 4 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	7.94E-03(4.83E-08)†	8.93E-03(8.59E-07)†	8.18E-03(9.27E-07)†	3.37E+01(2.30E+03)†	2.08E-02(1.36E-03)†	7.40E-03(4.04E-08)
	25	1.27E-02(1.97E-04)‡	1.15E-02(3.38E-06)‡	2.02E-02(3.52E-03)‡	8.35E+02(2.25E+04)†	2.26E-02(2.52E-03)‡	3.92E-02(8.51E-03)
	50	1.90E-02(4.11E-04)†	1.07E-02(1.62E-06)‡	3.39E-02(1.60E-03)†	1.04E+03(6.76E+03)†	1.67E-02(5.98E-04)‡	1.67E-02(2.03E-03)
	200	2.32E-01(7.62E-02)†	7.87E-03(1.16E-07)†	5.81E-01(3.79E-01)†	1.12E+03(1.45E+04)†	2.31E-02(3.14E-03)†	7.19E-03(2.11E-06)
F2	5	2.62E-02(2.14E-07)†	1.05E-01(2.78E-04)†	5.34E-02(9.10E-05)†	1.68E+00(9.22E-01)†	5.38E-02(5.93E-05)†	2.20E-02(2.41E-07)
	25	2.95E-02(1.14E-06)†	6.91E-02(2.44E-05)†	3.90E-02(3.54E-05)†	1.28E+01(3.07E+00)†	2.35E-02(1.36E-06)†	1.99E-02(2.48E-07)
	50	3.25E-02(9.85E-07)†	4.93E-02(8.30E-06)†	4.25E-02(6.03E-05)†	1.51E+01(3.38E+00)†	2.03E-02(3.56E-07)†	1.98E-02(2.01E-07)
	200	4.11E-02(2.61E-05)†	2.55E-02(4.90E-07)†	4.20E-02(3.44E-05)†	1.59E+01(2.35E+00)†	2.10E-02(2.18E-07)	2.09E-02(5.35E-07)
F3	5	2.60E-02(2.06E-07)‡	2.84E-02(1.15E-05)‡	2.66E-02(3.02E-06)‡	1.08E+02(1.78E+04)†	3.05E-02(5.99E-04)	3.87E-02(7.88E-03)
	25	6.84E-02(5.54E-02)	4.17E-02(4.11E-05)‡	2.82E-02(2.40E-05)	1.56E+03(1.82E+05)†	6.87E-02(1.02E-02)	8.83E-02(2.32E-02)
	50	2.90E-02(5.60E-05)‡	3.53E-02(2.46E-05)‡	5.55E-02(1.20E-02)‡	2.07E+03(1.27E+05)†	7.54E-02(4.86E-02)	1.02E-01(4.77E-02)
	200	2.52E-01(2.02E-01)†	2.40E-02(1.52E-06)‡	3.65E-01(2.93E-01)†	2.74E+03(3.67E+04)†	4.44E-02(5.06E-03)†	4.31E-02(8.32E-03)
F4	5	1.14E-02(1.03E-07)†	6.66E-03(4.12E-07)‡	5.80E-02(1.61E-04)†	3.54E-01(2.11E-03)‡	4.59E-02(7.81E-04)†	1.13E-02(2.39E-05)
	25	2.35E-02(8.86E-06)†	2.30E-02(3.28E-04)†	5.56E-02(3.09E-04)†	3.69E-01(3.14E-03)†	2.14E-02(4.70E-07)†	1.14E-02(8.81E-06)
	50	3.47E-02(1.01E-05)†	4.13E-02(1.15E-04)†	5.47E-02(1.02E-04)†	4.12E-01(2.42E-03)†	1.94E-02(2.32E-07)†	1.27E-02(8.60E-06)
	200	4.69E-02(5.78E-05)†	2.69E-02(1.70E-06)†	4.36E-02(1.05E-04)†	4.16E-01(6.92E-04)†	2.11E-02(1.76E-07)†	1.27E-02(1.12E-05)
WFG1	5	1.04E-01(3.47E-05)‡	3.75E-01(1.63E-03)†	1.06E-01(2.62E-05)‡	1.00E+00(2.94E-01)†	1.17E-01(7.79E-05)	1.21E-01(9.08E-05)
	25	1.54E-01(1.25E-04)†	3.26E-01(4.90E-04)†	1.57E-01(1.46E-04)†	1.94E+00(1.97E-02)†	1.27E-01(7.18E-05)†	1.17E-01(2.96E-05)
	50	1.72E-01(8.83E-05)†	2.50E-01(2.94E-04)†	1.72E-01(8.47E-05)†	2.01E+00(1.81E-02)†	1.26E-01(3.90E-05)†	1.15E-01(2.79E-05)
	200	1.92E-01(7.12E-05)†	1.79E-01(2.11E-05)†	1.94E-01(2.84E-05)†	2.44E+00(8.20E-03)†	1.15E-01(2.57E-05)‡	1.18E-01(1.63E-05)
WFG2	5	3.05E-01(7.91E-05)†	4.22E-01(2.43E-03)†	3.09E-01(8.99E-05)†	8.39E-01(2.28E-07)†	3.24E-01(3.07E-04)†	2.96E-01(2.33E-04)
	25	3.16E-01(2.90E-04)†	2.77E-01(4.54E-05)‡	3.27E-01(3.51E-04)†	8.44E-01(1.71E-07)†	2.85E-01(1.29E-04)	2.82E-01(8.63E-05)
	50	3.52E-01(8.12E-04)†	2.69E-01(2.24E-05)	3.57E-01(1.07E-03)†	8.45E-01(2.52E-07)†	2.81E-01(7.04E-05)†	2.68E-01(6.37E-05)
	200	4.17E-01(2.33E-03)†	2.64E-01(8.94E-06)†	4.19E-01(2.63E-03)†	8.45E-01(3.27E-07)†	2.56E-01(1.18E-05)	2.57E-01(1.37E-05)
WFG3	5	6.80E-04(1.58E-08)‡	3.84E-01(1.05E-01)	4.92E-01(1.65E-02)†	8.21E-01(8.74E-05)†	6.67E-01(1.16E-02)†	2.74E-01(1.86E-02)
	25	3.19E-03(1.96E-04)‡	1.75E+00(7.67E-05)†	1.21E+00(8.80E-03)†	8.52E-01(6.27E-05)‡	1.19E+00(9.14E-04)†	1.08E+00(4.06E-02)
	50	5.65E-02(3.21E-02)‡	1.77E+00(2.17E-05)†	1.40E+00(2.42E-03)†	8.66E-01(3.59E-05)‡	1.29E+00(8.39E-04)†	1.26E+00(4.02E-03)
	200	1.34E+00(1.19E-01)†	1.78E+00(4.61E-06)†	1.48E+00(2.73E-03)†	8.70E-01(7.34E-06)‡	1.34E+00(1.95E-04)†	1.31E+00(4.41E-03)
WFG4	5	1.07E-01(6.29E-05)†	3.74E-01(9.18E-04)†	1.90E-01(1.93E-04)†	7.16E-01(2.80E-03)†	1.79E-01(1.17E-04)†	1.11E-01(5.94E-06)
	25	1.71E-01(1.54E-05)†	2.72E-01(1.25E-04)†	1.85E-01(3.05E-05)†	6.65E-01(7.41E-04)†	1.02E-01(6.09E-06)†	9.84E-02(3.42E-06)
	50	1.81E-01(2.61E-05)†	2.42E-01(7.81E-05)†	1.87E-01(3.48E-05)†	6.36E-01(5.40E-04)†	9.72E-02(3.92E-06)	9.64E-02(6.29E-06)
	200	1.84E-01(1.61E-05)†	1.81E-01(4.84E-05)†	1.83E-01(3.13E-05)†	6.68E-01(1.79E-03)†	9.78E-02(4.49E-06)	9.80E-02(3.93E-06)
WFG5	5	1.39E-01(1.28E-05)†	3.99E-01(1.32E-03)†	2.27E-01(2.22E-04)†	1.29E+00(6.60E-03)†	2.25E-01(1.51E-04)†	1.48E-01(5.09E-06)
	25	1.79E-01(2.44E-05)†	2.13E-01(8.98E-05)†	1.97E-01(2.07E-05)†	1.19E+00(2.98E-03)†	1.40E-01(2.76E-06)†	1.35E-01(2.59E-06)
	50	1.86E-01(2.35E-05)†	1.93E-01(5.89E-05)†	1.95E-01(2.81E-05)†	1.15E+00(7.59E-03)†	1.35E-01(2.63E-06)	1.35E-01(2.31E-06)
	200	1.89E-01(2.43E-05)†	1.56E-01(1.21E-05)†	1.90E-01(1.69E-05)†	1.10E+00(1.43E-03)†	1.39E-01(2.27E-06)	1.39E-01(1.19E-06)
WFG6	5	1.87E-01(1.68E-03)	5.10E-01(4.88E-03)†	2.50E-01(2.19E-03)†	1.51E+00(1.96E-05)†	2.84E-01(1.83E-03)†	1.93E-01(8.98E-04)
	25	2.34E-01(1.23E-03)†	2.80E-01(2.30E-04)†	2.21E-01(1.35E-03)†	1.46E+00(1.43E-04)†	1.99E-01(7.72E-03)	1.68E-01(7.57E-04)
	50	2.38E-01(1.14E-03)†	2.31E-01(6.60E-05)†	2.35E-01(1.02E-03)†	1.45E+00(7.77E-05)†	2.09E-01(1.02E-02)	1.67E-01(6.24E-04)
	200	2.36E-01(1.36E-03)†	1.58E-01(1.87E-05)	2.41E-01(1.43E-03)†	1.44E+00(4.66E-05)†	1.98E-01(8.24E-03)	1.65E-01(6.57E-04)
WFG7	5	1.46E-01(2.08E-05)†	6.99E-01(1.58E-03)†	1.70E-01(8.45E-05)†	6.32E-01(3.31E-03)†	1.73E-01(1.94E-04)†	1.11E-01(1.27E-05)
	25	1.83E-01(6.03E-05)†	4.36E-01(3.56E-04)†	1.82E-01(5.13E-05)†	3.71E-01(3.60E-03)†	9.61E-02(4.70E-06)†	9.38E-02(7.39E-06)
	50	1.95E-01(4.84E-05)†	3.62E-01(4.86E-04)†	1.93E-01(4.09E-05)†	3.34E-01(1.88E-03)†	9.52E-02(3.83E-06)	9.52E-02(4.18E-06)
	200	2.01E-01(9.01E-05)†	2.21E-01(1.25E-04)†	2.00E-01(6.72E-05)†	5.64E-01(1.90E-02)†	9.95E-02(3.06E-06)	1.00E-01(2.07E-06)
WFG8	5	1.48E-01(3.49E-05)†	7.01E-01(1.62E-03)†	1.67E-01(1.47E-04)†	6.43E-01(2.86E-03)†	1.73E-01(1.36E-04)†	1.11E-01(1.55E-05)
	25	1.84E-01(3.74E-05)†	4.40E-01(4.24E-04)†	1.84E-01(5.37E-05)†	3.82E-01(4.50E-03)†	9.72E-02(7.25E-06)†	9.37E-02(6.11E-06)
	50	1.98E-01(8.22E-05)†	3.67E-01(5.37E-04)†	1.95E-01(5.50E-05)†	3.30E-01(1.86E-03)†	9.47E-02(4.96E-06)	9.52E-02(5.63E-06)
	200	2.00E-01(6.60E-05)†	2.20E-01(1.05E-04)†	2.00E-01(3.96E-05)†	5.38E-01(1.49E-02)†	9.94E-02(2.10E-06)†	1.01E-01(3.34E-06)
WFG9	5	6.48E-01(6.78E-03)‡	7.10E-01(1.50E-03)	8.08E-01(5.40E-04)†	6.76E-01(1.74E-02)‡	7.61E-01(1.16E-04)†	7.17E-01(3.13E-03)
	25	7.68E-01(8.08E-03)†	7.15E-01(2.64E-05)	8.33E-01(4.41E-04)†	7.36E-01(2.57E-03)†	7.13E-01(4.60E-04)†	6.85E-01(1.62E-03)
	50	8.05E-01(4.82E-03)†	7.08E-01(4.61E-05)	8.43E-01(4.40E-04)†	7.41E-01(4.30E-03)†	7.00E-01(5.27E-04)	6.83E-01(1.38E-03)
	200	8.20E-01(1.27E-03)†	6.94E-01(2.90E-05)	8.25E-01(3.29E-04)†	5.24E-01(1.57E-02)‡	7.01E-01(5.17E-04)	6.80E-01(1.30E-03)

TABLE 90
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 4 TO 5 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.67E-02(6.69E-08)†	1.78E-02(5.82E-07)†	7.11E-02(5.86E-02)†	1.07E+02(1.15E+04)†	2.53E-02(8.73E-04)†	1.48E-02(1.91E-07)
	25	2.72E-02(3.48E-04)‡	2.12E-02(3.52E-06)‡	7.10E-02(4.50E-02)‡	9.44E+02(1.24E+04)†	4.38E-02(6.18E-03)‡	1.06E-01(7.41E-02)
	50	1.75E-01(1.30E-01)†	2.11E-02(2.76E-06)†	1.86E-01(9.62E-02)†	1.09E+03(8.31E+03)†	4.67E-02(7.02E-03)†	1.52E-02(6.99E-05)
	200	7.37E+01(1.28E+03)†	1.65E-02(4.56E-07)‡	1.18E+02(1.66E+03)†	1.26E+03(9.65E+03)†	1.30E-01(5.46E-02)†	3.16E-02(2.00E-03)
F2	5	6.07E-02(1.25E-06)†	1.42E-01(2.59E-04)†	1.11E-01(2.87E-04)†	2.35E+00(4.43E-01)†	8.65E-02(1.12E-04)†	4.87E-02(1.51E-06)
	25	6.97E-02(2.22E-05)†	1.04E-01(1.95E-05)†	1.52E-01(1.62E-03)†	8.86E+00(9.51E-01)†	4.70E-02(3.37E-06)†	4.22E-02(1.03E-06)
	50	1.02E-01(2.91E-04)†	8.72E-02(3.20E-05)†	1.95E-01(2.57E-03)†	8.69E+00(8.50E-01)†	4.16E-02(8.40E-07)†	4.06E-02(9.57E-07)
	200	3.07E-01(2.04E-03)†	5.55E-02(2.04E-06)†	3.95E-01(5.50E-03)†	8.56E+00(1.12E+00)†	4.06E-02(4.89E-07)	4.09E-02(6.91E-07)
F3	5	5.97E-02(1.66E-06)‡	6.32E-02(2.61E-05)‡	1.70E-01(1.82E-01)†	1.59E+02(1.07E+04)†	8.16E-02(2.73E-03)‡	1.25E-01(5.70E-02)
	25	8.63E-02(1.05E-02)	8.16E-02(6.61E-05)‡	1.06E-01(3.34E-02)	1.03E+03(4.62E+04)†	1.17E-01(1.96E-02)	1.94E-01(3.29E-01)
	50	1.72E-01(3.98E-02)‡	7.85E-02(6.19E-05)‡	2.25E-01(7.74E-02)‡	1.24E+03(1.53E+04)†	1.18E-01(5.03E-02)‡	2.37E-01(5.75E-01)
	200	5.71E+01(2.33E+03)†	5.87E-02(8.82E-06)‡	1.16E+02(5.73E+03)†	1.39E+03(1.15E+04)†	9.58E-02(2.10E-02)†	6.30E-02(9.37E-03)
F4	5	2.16E-02(9.76E-07)	1.23E-02(1.62E-05)‡	1.09E-01(4.07E-04)†	4.59E-01(3.18E-03)†	9.44E-02(4.50E-04)†	2.19E-02(3.83E-05)
	25	6.92E-02(5.43E-05)†	4.52E-02(2.88E-04)†	2.66E-01(2.07E-03)†	4.86E-01(1.65E-03)†	4.34E-02(3.35E-06)†	2.15E-02(1.49E-05)
	50	1.60E-01(1.43E-03)†	6.17E-02(1.14E-04)†	4.69E-01(3.45E-03)†	4.88E-01(1.76E-03)†	3.88E-02(9.65E-07)†	2.19E-02(2.13E-05)
	200	6.08E-01(3.69E-03)†	5.27E-02(3.02E-06)†	6.92E-01(5.26E-03)†	4.83E-01(5.13E-04)†	3.89E-02(3.79E-07)†	2.25E-02(2.61E-05)
WFG1	5	2.05E-01(3.29E-04)‡	3.27E-01(1.02E-03)†	2.03E-01(1.31E-04)‡	1.87E+00(3.85E-02)†	2.34E-01(2.24E-04)‡	2.42E-01(1.73E-04)
	25	3.00E-01(3.41E-04)†	3.51E-01(3.95E-04)†	3.04E-01(4.00E-04)†	2.18E+00(3.56E-02)†	2.56E-01(1.72E-04)†	2.45E-01(1.63E-04)
	50	3.26E-01(2.35E-04)†	3.31E-01(1.60E-04)†	3.29E-01(4.25E-04)†	2.49E+00(1.79E-02)†	2.57E-01(1.27E-04)†	2.40E-01(8.91E-05)
	200	3.54E-01(2.63E-04)†	3.00E-01(6.76E-05)†	3.51E-01(2.17E-04)†	2.68E+00(5.98E-03)†	2.27E-01(1.59E-04)‡	2.33E-01(1.23E-04)
WFG2	5	6.77E-01(4.97E-04)†	5.87E-01(4.35E-03)	6.82E-01(6.76E-04)†	7.23E-01(7.18E-07)†	5.96E-01(9.34E-04)	5.79E-01(6.68E-04)
	25	7.05E-01(2.12E-03)†	4.31E-01(9.19E-05)‡	7.37E-01(3.74E-03)†	7.27E-01(8.12E-08)†	5.39E-01(2.00E-04)‡	5.51E-01(3.80E-04)
	50	8.26E-01(4.98E-03)†	4.29E-01(4.03E-05)‡	8.19E-01(3.48E-03)†	7.27E-01(8.05E-09)†	5.39E-01(2.46E-04)	5.36E-01(2.18E-04)
	200	8.61E-01(3.31E-03)†	4.36E-01(2.50E-05)‡	8.74E-01(3.67E-03)†	7.28E-01(8.48E-10)†	5.37E-01(7.41E-05)	5.40E-01(5.57E-05)
WFG3	5	8.84E-04(4.26E-08)‡	1.62E+00(2.97E-01)†	1.26E+00(1.21E-02)†	8.34E-01(3.33E-05)†	1.35E+00(5.14E-03)†	6.34E-01(7.51E-02)
	25	6.52E-02(4.97E-02)‡	2.66E+00(7.56E-05)†	2.24E+00(4.50E-03)†	8.61E-01(6.51E-06)‡	1.61E+00(5.01E-03)†	1.46E+00(2.70E-02)
	50	1.06E+00(5.57E-01)‡	2.69E+00(4.54E-05)†	2.36E+00(2.16E-03)†	8.66E-01(3.36E-06)‡	1.82E+00(6.35E-03)†	1.55E+00(3.82E-02)
	200	2.43E+00(1.45E-03)†	2.70E+00(1.21E-05)†	2.44E+00(4.20E-03)†	8.72E-01(4.27E-06)‡	1.93E+00(3.15E-03)†	1.81E+00(7.46E-03)
WFG4	5	3.15E-01(2.18E-04)†	5.75E-01(1.64E-03)†	4.62E-01(1.84E-04)†	7.00E-01(4.32E-03)†	3.74E-01(1.96E-04)†	2.98E-01(7.24E-05)
	25	4.09E-01(3.58E-05)†	4.01E-01(3.01E-04)†	4.65E-01(1.94E-04)†	7.23E-01(7.90E-04)†	2.53E-01(2.27E-05)	2.54E-01(3.80E-05)
	50	4.26E-01(1.18E-04)†	3.70E-01(7.05E-05)†	4.63E-01(2.28E-04)†	7.04E-01(1.06E-03)†	2.43E-01(3.76E-05)‡	2.49E-01(2.81E-05)
	200	4.36E-01(1.67E-04)†	3.19E-01(4.74E-05)†	4.42E-01(1.82E-04)†	7.29E-01(1.32E-03)†	2.36E-01(1.96E-05)	2.37E-01(1.96E-05)
WFG5	5	3.28E-01(7.94E-05)‡	5.56E-01(1.41E-03)†	5.34E-01(4.55E-04)†	1.80E+00(3.33E-03)†	4.31E-01(1.64E-04)†	3.33E-01(5.19E-05)
	25	4.16E-01(8.86E-05)†	3.94E-01(2.11E-04)†	4.83E-01(3.24E-04)†	1.85E+00(6.57E-04)†	3.01E-01(3.71E-05)†	2.90E-01(2.88E-05)
	50	4.28E-01(1.11E-04)†	3.65E-01(1.18E-04)†	4.65E-01(1.20E-04)†	1.84E+00(1.33E-03)†	2.87E-01(3.56E-05)†	2.84E-01(2.00E-05)
	200	4.42E-01(9.98E-05)†	3.17E-01(3.14E-05)†	4.42E-01(1.41E-04)†	1.81E+00(5.14E-04)†	2.85E-01(2.85E-05)	2.86E-01(3.12E-05)
WFG6	5	4.09E-01(2.06E-03)†	7.49E-01(6.04E-03)†	5.55E-01(2.80E-03)†	1.45E+00(1.18E-05)†	5.08E-01(1.96E-03)†	3.82E-01(1.31E-03)
	25	4.84E-01(1.17E-03)†	4.06E-01(2.93E-04)†	4.82E-01(1.48E-03)†	1.45E+00(1.57E-04)†	3.62E-01(9.35E-03)	3.28E-01(1.04E-03)
	50	4.93E-01(1.10E-03)†	3.62E-01(2.07E-04)†	4.95E-01(1.05E-03)†	1.45E+00(3.27E-06)†	3.74E-01(1.35E-02)	3.26E-01(9.59E-04)
	200	4.70E-01(3.59E-04)†	3.01E-01(3.60E-05)‡	4.64E-01(5.33E-04)†	1.46E+00(5.05E-04)†	3.64E-01(1.10E-02)	3.26E-01(9.26E-04)
WFG7	5	4.00E-01(1.28E-04)†	7.77E-01(3.25E-03)†	4.52E-01(5.76E-04)†	8.48E-01(6.12E-03)†	3.70E-01(3.63E-04)†	2.90E-01(1.70E-04)
	25	5.00E-01(2.64E-04)†	4.90E-01(9.93E-04)†	5.06E-01(1.30E-04)†	6.58E-01(3.32E-03)†	2.48E-01(1.73E-05)†	2.40E-01(4.42E-05)
	50	5.25E-01(1.79E-04)†	4.39E-01(4.15E-04)†	5.22E-01(2.72E-04)†	6.95E-01(3.68E-03)†	2.36E-01(3.41E-05)	2.36E-01(3.71E-05)
	200	5.24E-01(1.68E-04)†	3.88E-01(2.40E-04)†	5.25E-01(1.81E-04)†	7.66E-01(8.59E-03)†	2.31E-01(1.25E-05)	2.31E-01(1.51E-05)
WFG8	5	4.03E-01(1.63E-04)†	7.81E-01(6.17E-03)†	4.60E-01(7.35E-04)†	8.32E-01(3.01E-03)†	3.72E-01(2.54E-04)†	2.88E-01(1.24E-04)
	25	5.03E-01(1.98E-04)†	4.92E-01(7.55E-04)†	5.05E-01(3.17E-04)†	6.72E-01(4.53E-03)†	2.46E-01(2.78E-05)†	2.42E-01(3.00E-05)
	50	5.28E-01(1.98E-04)†	4.46E-01(3.94E-04)†	5.17E-01(1.68E-04)†	6.73E-01(3.78E-03)†	2.36E-01(2.65E-05)	2.36E-01(2.40E-05)
	200	5.21E-01(2.27E-04)†	3.90E-01(1.62E-04)†	5.24E-01(2.58E-04)†	7.70E-01(7.64E-03)†	2.31E-01(1.82E-05)	2.30E-01(2.11E-05)
WFG9	5	8.33E-01(1.61E-02)‡	7.17E-01(1.87E-03)‡	1.07E+00(3.66E-04)†	9.67E-01(5.23E-02)	9.41E-01(1.68E-04)†	8.95E-01(4.05E-03)
	25	1.02E+00(1.48E-02)†	8.04E-01(1.54E-03)‡	1.12E+00(2.88E-04)†	9.72E-01(3.49E-03)†	9.26E-01(4.71E-04)†	8.70E-01(5.22E-03)
	50	1.05E+00(9.53E-03)†	8.39E-01(8.05E-04)	1.11E+00(3.27E-04)†	9.95E-01(6.31E-03)†	9.18E-01(6.33E-04)†	8.65E-01(4.64E-03)
	200	1.09E+00(1.76E-03)†	8.66E-01(6.65E-05)	1.09E+00(2.97E-04)†	8.89E-01(8.74E-03)	9.00E-01(8.11E-04)	8.68E-01(4.43E-03)

TABLE 91
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 5 TO 6 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	2.63E-02(1.81E-07)†	2.68E-02(3.61E-07)†	3.22E-01(6.78E-01)†	2.34E+02(1.40E+04)†	6.92E-02(1.22E-02)†	2.18E-02(7.86E-07)
	25	8.08E-02(4.05E-03)†	2.85E-02(5.45E-07)	1.05E-01(1.18E-02)†	8.65E+02(8.04E+03)†	1.15E-01(5.80E-02)	7.88E-02(1.80E-02)
	50	3.21E+00(3.58E+01)†	2.79E-02(7.77E-07)‡	2.80E+00(3.23E+00)†	1.01E+03(7.33E+03)†	7.34E-02(9.31E-03)†	3.52E-02(2.05E-03)
	200	2.75E+02(1.45E+02)†	2.40E-02(2.18E-07)‡	2.79E+02(1.23E+02)†	1.17E+03(5.39E+03)†	1.32E-01(9.07E-02)†	3.70E-02(2.60E-03)
F2	5	1.01E-01(5.72E-06)†	1.55E-01(1.77E-04)†	1.71E-01(1.81E-04)†	2.11E+00(3.63E-01)†	1.16E-01(6.37E-05)†	6.95E-02(3.84E-06)
	25	1.56E-01(6.47E-04)†	1.18E-01(3.45E-05)†	3.86E-01(3.00E-03)†	5.04E+00(5.75E-01)†	6.61E-02(5.90E-06)†	6.08E-02(4.19E-06)
	50	3.78E-01(4.53E-03)†	1.02E-01(2.20E-05)†	5.92E-01(5.24E-03)†	5.23E+00(2.65E-01)†	5.73E-02(3.04E-06)†	5.60E-02(2.28E-06)
	200	8.03E-01(1.19E-03)†	7.36E-02(1.41E-06)†	8.19E-01(2.66E-03)†	5.44E+00(2.26E-01)†	5.46E-02(1.78E-06)‡	5.57E-02(1.83E-06)
F3	5	9.80E-02(6.13E-06)‡	9.67E-02(3.09E-05)‡	1.90E-01(8.63E-02)†	1.94E+02(5.00E+03)†	1.27E-01(4.09E-03)†	1.04E-01(1.88E-02)
	25	1.55E-01(1.09E-02)†	1.08E-01(5.30E-05)‡	1.69E-01(9.73E-03)†	6.60E+02(3.40E+03)†	1.33E-01(1.19E-02)	1.47E-01(9.54E-02)
	50	2.95E+00(1.93E+01)†	1.02E-01(4.05E-05)‡	2.14E+00(5.70E+00)†	7.19E+02(1.72E+04)†	1.28E-01(1.40E-02)†	1.14E-01(1.73E-02)
	200	5.47E+02(5.80E+03)†	7.93E-02(5.88E-06)†	5.88E+02(2.69E+03)†	7.74E+02(2.40E+04)†	1.53E-01(4.28E-02)†	7.70E-02(3.38E-03)
F4	5	3.24E-02(1.87E-05)‡	1.49E-02(2.94E-05)‡	1.69E-01(5.08E-04)†	4.55E-01(2.50E-03)†	1.11E-01(2.16E-04)†	3.57E-02(2.25E-05)
	25	1.96E-01(1.18E-03)†	5.63E-02(6.76E-05)†	6.33E-01(3.28E-03)†	5.53E-01(1.20E-03)†	5.74E-02(1.16E-05)†	4.25E-02(1.51E-05)
	50	6.34E-01(5.65E-03)†	6.86E-02(3.87E-05)†	8.99E-01(1.66E-03)†	5.71E-01(1.22E-03)†	5.35E-02(1.50E-06)†	4.32E-02(7.70E-05)
	200	1.07E+00(4.44E-04)†	6.64E-02(1.75E-06)†	1.08E+00(3.70E-04)†	6.10E-01(1.54E-03)†	6.26E-02(1.04E-06)†	4.56E-02(9.05E-05)
WFG1	5	3.21E-01(9.30E-04)‡	2.52E-01(4.31E-04)‡	3.09E-01(5.68E-04)‡	2.21E+00(2.52E-02)†	3.14E-01(9.66E-04)‡	3.55E-01(2.21E-04)
	25	4.31E-01(5.38E-04)†	3.14E-01(1.85E-04)‡	4.42E-01(4.83E-04)†	2.57E+00(1.71E-02)†	3.69E-01(1.98E-04)†	3.26E-01(2.14E-04)
	50	4.54E-01(4.66E-04)†	3.11E-01(1.56E-04)	4.65E-01(5.58E-04)†	2.71E+00(7.33E-03)†	3.46E-01(1.77E-04)†	3.14E-01(2.78E-04)
	200	4.83E-01(4.52E-04)†	3.05E-01(2.34E-05)†	4.91E-01(4.71E-04)†	2.75E+00(2.12E-03)†	2.93E-01(2.92E-04)	2.94E-01(1.85E-04)
WFG2	5	8.29E-01(9.83E-04)†	4.96E-01(1.46E-03)‡	8.38E-01(1.21E-03)†	7.71E-01(5.65E-07)†	6.91E-01(1.11E-03)	7.08E-01(2.79E-03)
	25	1.11E+00(4.53E-03)†	3.94E-01(1.19E-04)‡	1.09E+00(1.32E-02)†	7.75E-01(8.56E-08)†	6.59E-01(6.10E-04)‡	6.75E-01(6.98E-04)
	50	1.25E+00(9.01E-03)†	4.03E-01(8.39E-05)‡	1.25E+00(7.19E-03)†	7.75E-01(1.37E-08)†	6.40E-01(3.59E-04)	6.32E-01(5.71E-04)
	200	1.26E+00(6.53E-03)†	4.17E-01(2.33E-05)‡	1.28E+00(9.57E-03)†	7.76E-01(1.93E-11)†	6.19E-01(9.42E-05)†	6.12E-01(8.22E-05)
WFG3	5	1.80E-03(8.25E-06)‡	2.88E+00(1.16E-01)†	2.25E+00(4.49E-02)†	9.03E-01(1.07E-04)‡	1.96E+00(2.45E-02)†	1.44E+00(1.94E-01)
	25	1.10E+00(6.12E-01)‡	3.50E+00(3.00E-04)†	3.27E+00(4.59E-03)†	9.17E-01(1.57E-05)‡	2.79E+00(7.29E-03)‡	2.89E+00(3.75E-02)
	50	3.13E+00(1.27E-01)†	3.55E+00(2.09E-04)†	3.34E+00(7.48E-03)†	9.23E-01(7.42E-06)‡	2.94E+00(4.30E-03)	2.96E+00(1.65E-02)
	200	3.41E+00(4.41E-03)†	3.59E+00(4.15E-05)†	3.42E+00(3.64E-03)†	9.26E-01(6.87E-06)‡	2.96E+00(2.29E-03)†	2.93E+00(2.16E-03)
WFG4	5	6.61E-01(8.02E-04)†	7.24E-01(5.60E-03)†	8.62E-01(6.72E-04)†	7.86E-01(2.52E-03)†	6.51E-01(5.90E-04)†	5.44E-01(5.39E-04)
	25	7.95E-01(2.90E-04)†	3.95E-01(2.74E-04)‡	9.11E-01(7.21E-04)†	7.83E-01(2.30E-03)†	4.25E-01(1.27E-04)	4.27E-01(1.15E-04)
	50	8.72E-01(9.62E-04)†	3.67E-01(1.42E-04)‡	9.38E-01(9.95E-04)†	7.84E-01(2.38E-03)†	3.88E-01(8.04E-05)‡	3.97E-01(6.71E-05)
	200	9.14E-01(9.79E-04)†	3.42E-01(5.46E-05)‡	9.12E-01(7.61E-04)†	8.81E-01(6.25E-04)†	3.99E-01(8.63E-05)†	3.91E-01(9.56E-05)
WFG5	5	6.73E-01(3.82E-04)†	8.40E-01(1.62E-03)†	9.74E-01(5.95E-04)†	1.95E+00(3.61E-04)†	7.05E-01(3.22E-04)†	5.86E-01(2.27E-04)
	25	8.03E-01(4.65E-04)†	5.72E-01(4.56E-04)†	9.46E-01(8.30E-04)†	1.98E+00(6.19E-05)†	5.09E-01(1.01E-04)†	4.85E-01(7.92E-05)
	50	8.45E-01(8.91E-04)†	4.99E-01(2.74E-04)†	9.37E-01(7.88E-04)†	1.98E+00(6.50E-05)†	4.67E-01(1.27E-04)	4.63E-01(1.89E-04)
	200	9.05E-01(3.15E-04)†	4.20E-01(8.87E-05)‡	9.07E-01(9.85E-04)†	1.98E+00(7.39E-05)†	4.36E-01(7.25E-05)	4.33E-01(3.48E-05)
WFG6	5	7.74E-01(4.07E-03)†	9.21E-01(1.24E-02)†	1.02E+00(3.39E-03)†	1.37E+00(4.47E-05)†	7.97E-01(2.49E-03)†	6.15E-01(2.35E-03)
	25	8.84E-01(1.26E-03)†	4.06E-01(3.07E-04)‡	9.52E-01(2.47E-03)†	1.39E+00(9.25E-04)†	5.75E-01(1.49E-02)	5.34E-01(2.30E-03)
	50	9.14E-01(1.28E-03)†	3.57E-01(1.38E-04)‡	9.44E-01(2.41E-03)†	1.38E+00(9.11E-04)†	5.89E-01(2.61E-02)	5.22E-01(2.10E-03)
	200	8.95E-01(7.65E-04)†	3.32E-01(8.18E-05)‡	8.90E-01(6.38E-04)†	1.40E+00(1.64E-03)†	5.42E-01(1.37E-02)	5.16E-01(2.28E-03)
WFG7	5	7.90E-01(4.09E-04)†	8.98E-01(1.07E-02)†	9.01E-01(1.48E-03)†	1.22E+00(9.94E-03)†	5.77E-01(7.73E-04)†	4.78E-01(1.99E-04)
	25	9.69E-01(6.49E-04)†	3.17E-01(4.26E-04)‡	9.98E-01(1.02E-03)†	1.30E+00(8.58E-03)†	3.83E-01(1.21E-04)	3.82E-01(1.22E-04)
	50	9.92E-01(6.38E-04)†	3.22E-01(2.97E-04)‡	9.94E-01(8.66E-04)†	1.51E+00(2.38E-03)†	3.69E-01(7.03E-05)‡	3.77E-01(1.22E-04)
	200	9.78E-01(4.76E-04)†	3.42E-01(1.11E-04)‡	9.80E-01(3.91E-04)†	6.78E-01(2.09E-02)†	4.47E-01(2.73E-05)‡	4.51E-01(4.02E-05)
WFG8	5	7.89E-01(6.43E-04)†	9.25E-01(9.78E-03)†	8.97E-01(1.13E-03)†	1.20E+00(9.87E-03)†	5.72E-01(6.21E-04)†	4.69E-01(3.07E-04)
	25	9.64E-01(7.36E-04)†	3.24E-01(3.53E-04)‡	9.88E-01(1.10E-03)†	1.29E+00(5.07E-03)†	3.85E-01(1.07E-04)	3.81E-01(9.33E-05)
	50	1.00E+00(6.07E-04)†	3.23E-01(3.77E-04)‡	9.95E-01(4.30E-04)†	1.52E+00(2.66E-03)†	3.69E-01(8.02E-05)	3.73E-01(5.05E-05)
	200	9.80E-01(5.04E-04)†	3.42E-01(7.48E-05)‡	9.79E-01(8.92E-04)†	7.40E-01(5.89E-02)†	4.47E-01(6.57E-05)	4.50E-01(6.22E-05)
WFG9	5	1.24E+00(1.55E-02)	1.11E+00(6.31E-04)‡	1.49E+00(4.30E-04)†	1.29E+00(9.90E-03)	1.34E+00(4.89E-04)†	1.28E+00(5.79E-03)
	25	1.46E+00(1.87E-02)†	1.13E+00(4.58E-04)‡	1.61E+00(1.01E-03)†	1.49E+00(9.51E-03)†	1.33E+00(1.19E-03)†	1.26E+00(6.90E-03)
	50	1.55E+00(1.33E-02)†	1.14E+00(6.39E-04)‡	1.67E+00(1.01E-03)†	1.53E+00(8.67E-03)†	1.30E+00(8.84E-04)†	1.26E+00(3.89E-03)
	200	1.63E+00(2.26E-02)†	1.13E+00(2.35E-04)‡	1.50E+00(7.60E-02)†	1.49E+00(9.72E-03)†	1.25E+00(2.47E-03)	1.25E+00(3.08E-03)
+-=		44/6/2	38/10/4	44/5/3	45/5/2	35/7/10	—

TABLE 92
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 6 TO 7 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	3.58E-02(1.01E-06)†	3.60E-02(7.51E-07)†	8.38E-02(1.13E-02)†	2.76E+02(6.07E+03)†	1.42E-01(7.39E-02)†	3.48E-02(2.81E-04)
	25	7.58E-01(3.09E-01)†	3.66E-02(2.45E-07)‡	5.36E-01(1.49E-01)†	7.45E+02(3.68E+03)†	1.25E-01(1.61E-01)†	7.11E-02(9.89E-03)
	50	8.12E+01(2.77E+03)†	3.58E-02(2.39E-07)‡	8.70E+01(2.57E+03)†	8.43E+02(3.63E+03)†	1.10E-01(5.10E-02)†	4.38E-02(6.92E-03)
	200	2.49E+02(3.79E+01)†	3.26E-02(1.60E-07)‡	2.51E+02(5.59E+01)†	9.35E+02(3.29E+03)†	2.01E-01(1.62E-01)†	6.43E-02(9.25E-03)
F2	5	1.47E-01(9.36E-06)†	1.64E-01(1.39E-04)†	2.47E-01(5.02E-04)†	1.64E+00(1.36E-01)†	1.35E-01(4.07E-05)†	9.93E-02(7.25E-06)
	25	3.79E-01(2.60E-03)†	1.37E-01(1.68E-05)†	6.51E-01(2.64E-03)†	3.67E+00(3.79E-02)†	8.35E-02(5.15E-06)†	8.01E-02(3.16E-06)
	50	7.23E-01(3.01E-03)†	1.28E-01(1.72E-05)†	8.10E-01(6.23E-04)†	3.78E+00(8.22E-02)†	7.73E-02(3.27E-06)†	7.69E-02(3.45E-06)
	200	8.44E-01(8.63E-04)†	1.13E-01(2.11E-06)†	8.62E-01(5.07E-04)†	3.83E+00(8.19E-02)†	7.75E-02(4.85E-06)	7.72E-02(4.67E-06)
F3	5	1.43E-01(8.28E-06)‡	1.35E-01(1.48E-05)‡	1.33E+00(5.79E+00)†	1.67E+02(2.55E+03)†	2.12E-01(3.65E-02)†	1.61E-01(1.83E-02)
	25	6.44E-01(4.53E-01)†	1.31E-01(1.71E-05)‡	5.93E-01(1.31E-01)†	4.54E+02(1.91E+03)†	2.28E-01(1.08E-01)‡	2.61E-01(2.60E-01)
	50	8.93E+01(7.00E+03)†	1.28E-01(1.24E-05)†	7.19E+01(4.00E+03)†	5.20E+02(1.36E+03)†	3.08E-01(4.50E-01)†	1.26E-01(1.42E-02)
	200	6.00E+02(7.13E+02)†	1.16E-01(3.61E-06)‡	6.16E+02(7.24E+02)†	5.58E+02(1.67E+03)†	2.71E-01(1.03E-01)	2.32E-01(2.31E-01)
F4	5	4.84E-02(7.90E-05)†	2.46E-02(3.57E-05)‡	2.22E-01(6.59E-04)†	4.76E-01(1.01E-03)†	1.22E-01(1.70E-04)†	4.46E-02(1.28E-04)
	25	4.61E-01(4.47E-03)†	7.30E-02(4.14E-05)†	7.88E-01(8.44E-04)†	5.89E-01(9.25E-04)†	7.61E-02(9.36E-06)†	5.75E-02(7.67E-05)
	50	8.62E-01(7.38E-04)†	8.31E-02(1.00E-05)†	8.94E-01(1.24E-04)†	6.18E-01(6.99E-04)†	7.45E-02(3.54E-06)†	5.73E-02(1.15E-04)
	200	9.28E-01(7.62E-05)†	8.57E-02(2.76E-06)†	9.32E-01(1.10E-04)†	6.34E-01(7.82E-04)†	8.53E-02(3.44E-06)†	5.93E-02(1.38E-04)
WFG1	5	4.32E-01(1.11E-03)‡	2.68E-01(1.45E-04)‡	4.37E-01(2.42E-03)	2.50E+00(1.36E-02)†	4.56E-01(1.71E-03)†	4.52E-01(9.83E-04)
	25	5.66E-01(7.99E-04)†	3.13E-01(1.23E-04)‡	5.81E-01(8.23E-04)†	2.80E+00(7.54E-03)†	4.71E-01(3.44E-04)†	3.93E-01(4.75E-04)
	50	5.94E-01(8.95E-04)†	3.10E-01(5.03E-05)‡	5.96E-01(8.19E-04)†	2.84E+00(1.35E-03)†	4.24E-01(6.56E-04)†	3.62E-01(3.31E-04)
	200	6.20E-01(7.90E-04)†	3.04E-01(1.83E-05)‡	6.28E-01(6.70E-04)†	2.85E+00(1.13E-03)†	3.37E-01(4.15E-04)†	3.33E-01(4.43E-04)
WFG2	5	2.06E+00(1.10E-02)†	5.74E-01(1.28E-03)‡	2.12E+00(1.43E-02)†	6.35E-01(6.87E-07)‡	1.81E+00(1.11E-02)‡	1.82E+00(1.19E-02)
	25	2.03E+00(1.10E-02)†	5.46E-01(2.29E-04)‡	2.05E+00(1.25E-02)†	6.38E-01(4.40E-08)‡	1.30E+00(2.69E-03)	1.39E+00(1.33E-03)
	50	2.07E+00(1.22E-02)†	5.47E-01(2.43E-04)‡	2.01E+00(8.18E-03)†	6.39E-01(1.83E-09)‡	1.39E+00(1.60E-03)	1.42E+00(9.54E-04)
	200	2.02E+00(9.51E-03)†	5.44E-01(3.07E-05)‡	2.00E+00(7.08E-03)†	6.39E-01(5.93E-12)‡	1.38E+00(3.45E-04)	1.38E+00(2.70E-04)
WFG3	5	1.61E-02(1.74E-03)‡	4.29E+00(1.67E-02)†	3.16E+00(3.15E-02)†	7.69E-01(2.00E-05)‡	2.47E+00(1.18E-02)†	1.85E+00(2.14E-01)
	25	2.89E+00(7.05E-01)†	4.71E+00(4.34E-04)†	4.24E+00(8.94E-03)†	7.79E-01(3.96E-06)‡	3.06E+00(2.79E-02)†	2.70E+00(1.40E-01)
	50	4.27E+00(1.42E-02)†	4.76E+00(3.05E-04)†	4.32E+00(5.15E-03)†	7.83E-01(3.68E-06)	3.48E+00(1.18E-02)†	2.75E+00(1.30E-01)
	200	4.37E+00(8.80E-03)†	4.83E+00(1.03E-04)†	4.38E+00(5.50E-03)†	7.84E-01(7.13E-06)‡	3.61E+00(6.42E-03)	3.17E+00(1.03E-01)
WFG4	5	1.17E+00(1.03E-03)†	8.12E-01(1.43E-02)‡	1.44E+00(7.86E-04)†	8.07E-01(2.28E-03)‡	1.00E+00(1.24E-03)†	9.05E-01(1.50E-03)
	25	1.42E+00(2.73E-03)†	4.21E-01(6.03E-04)‡	1.57E+00(3.18E-03)†	7.35E-01(2.16E-03)†	6.54E-01(6.36E-04)†	6.45E-01(3.46E-04)
	50	1.58E+00(1.52E-03)†	3.83E-01(3.79E-04)‡	1.64E+00(2.02E-03)†	7.38E-01(1.99E-03)†	5.98E-01(3.10E-04)‡	6.04E-01(1.83E-04)
	200	1.60E+00(3.15E-03)†	4.07E-01(2.57E-04)‡	1.62E+00(2.13E-03)†	7.82E-01(4.12E-04)†	6.79E-01(1.62E-04)	6.48E-01(3.13E-04)
WFG5	5	1.18E+00(1.32E-03)†	1.28E+00(5.12E-03)†	1.56E+00(9.16E-04)†	1.97E+00(5.19E-05)†	1.05E+00(1.01E-03)†	9.17E-01(2.05E-03)
	25	1.38E+00(2.49E-03)†	8.15E-01(2.09E-03)†	1.61E+00(1.08E-03)†	1.99E+00(5.71E-06)†	7.51E-01(3.49E-04)†	7.12E-01(4.18E-04)
	50	1.49E+00(2.52E-03)†	6.53E-01(1.09E-03)‡	1.62E+00(7.12E-04)†	2.00E+00(2.28E-06)†	6.86E-01(2.89E-04)†	6.65E-01(2.43E-04)
	200	1.61E+00(1.57E-03)†	5.76E-01(2.21E-04)‡	1.58E+00(2.47E-03)†	2.00E+00(1.67E-06)†	6.63E-01(2.28E-04)	6.55E-01(1.27E-04)
WFG6	5	1.31E+00(4.64E-03)	1.14E+00(3.04E-02)†	1.65E+00(3.61E-03)	1.29E+00(6.51E-04)†	1.17E+00(4.13E-03)†	9.25E-01(3.30E-03)
	25	1.47E+00(2.49E-03)	4.67E-01(7.26E-04)‡	1.61E+00(3.99E-03)	1.32E+00(2.14E-03)†	8.36E-01(2.50E-02)	7.71E-01(5.67E-03)
	50	1.55E+00(2.23E-03)	4.12E-01(3.57E-04)‡	1.60E+00(2.95E-03)	1.34E+00(1.79E-03)†	8.12E-01(2.58E-02)	7.59E-01(4.32E-03)
	200	1.57E+00(2.03E-03)	4.04E-01(1.52E-04)	1.57E+00(1.96E-03)†	1.36E+00(1.37E-03)†	6.68E-01(1.60E-02)	7.03E-01(9.65E-03)
WFG7	5	1.32E+00(2.06E-03)†	8.56E-01(2.04E-02)†	1.45E+00(1.35E-03)†	1.21E+00(2.04E-02)†	8.00E-01(7.57E-04)†	7.37E-01(3.73E-04)
	25	1.59E+00(2.23E-03)†	3.02E-01(6.35E-04)‡	1.62E+00(1.10E-03)†	1.15E+00(4.62E-03)†	5.77E-01(1.53E-04)†	5.76E-01(3.96E-04)
	50	1.58E+00(1.22E-03)†	3.34E-01(2.49E-04)‡	1.61E+00(1.18E-03)†	1.33E+00(2.40E-03)†	5.53E-01(3.17E-04)	5.68E-01(3.27E-04)
	200	1.57E+00(8.23E-04)†	3.95E-01(5.86E-05)‡	1.57E+00(1.00E-03)†	6.76E-01(4.34E-02)‡	6.99E-01(6.09E-04)	7.14E-01(6.59E-04)
WFG8	5	1.33E+00(1.54E-03)†	9.62E-01(3.72E-02)†	1.45E+00(1.81E-03)†	1.19E+00(1.97E-02)†	8.04E-01(1.35E-03)†	7.28E-01(8.05E-04)
	25	1.57E+00(1.80E-03)†	3.08E-01(4.26E-04)‡	1.61E+00(1.84E-03)†	1.15E+00(5.75E-03)†	5.74E-01(2.80E-04)‡	5.74E-01(2.57E-04)
	50	1.60E+00(1.94E-03)†	3.40E-01(3.68E-04)‡	1.61E+00(2.28E-03)†	1.32E+00(1.35E-03)†	5.63E-01(3.32E-04)	5.67E-01(2.51E-04)
	200	1.57E+00(8.06E-04)†	3.98E-01(1.19E-04)‡	1.58E+00(8.35E-04)†	6.67E-01(4.34E-02)‡	7.05E-01(6.20E-04)	7.10E-01(3.88E-04)
WFG9	5	1.73E+00(2.48E-02)‡	1.54E+00(1.14E-03)‡	2.05E+00(5.44E-04)	1.44E+00(1.78E-02)‡	1.82E+00(4.66E-04)	1.75E+00(6.43E-03)
	25	2.03E+00(2.91E-02)†	1.51E+00(8.41E-04)‡	2.13E+00(1.12E-02)†	1.37E+00(2.20E-02)‡	1.76E+00(1.21E-03)†	1.69E+00(7.30E-03)
	50	2.10E+00(3.51E-02)†	1.49E+00(1.32E-03)‡	1.91E+00(1.47E-02)†	1.30E+00(4.27E-03)‡	1.73E+00(1.14E-03)†	1.68E+00(2.20E-03)
	200	2.10E+00(7.90E-02)†	1.29E+00(1.68E-01)	1.72E+00(1.40E-02)†	1.29E+00(4.10E-03)‡	1.66E+00(5.74E-03)	1.71E+00(2.81E-03)
+-=		45/3/4	40/9/3	48/1/3	20/31/1	33/6/13	—

TABLE 93
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 7 TO 6 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	3.13E-02(6.70E-04)†	1.26E+00(1.14E-01)†	7.15E-01(1.61E+00)†	5.42E+02(7.88E+03)†	1.27E-01(5.88E-02)†	2.28E-02(4.76E-06)
	25	1.70E+01(2.89E+02)†	1.72E+00(5.60E-02)†	1.98E+01(4.21E+02)†	1.01E+03(2.34E+03)†	9.48E-02(3.35E-02)†	6.28E-02(1.40E-02)
	50	2.41E+02(6.66E+02)†	1.75E+00(6.80E-02)†	2.61E+02(2.90E+02)†	1.09E+03(4.42E+03)†	1.64E-01(5.35E-02)†	3.21E-02(2.66E-03)
	200	2.93E+02(1.34E+02)†	1.71E+00(7.01E-02)†	2.95E+02(1.57E+02)†	1.14E+03(3.22E+03)†	1.53E-01(7.57E-02)†	1.34E-01(1.76E-01)
F2	5	1.05E-01(6.11E-06)†	1.76E-01(1.74E-04)†	2.95E-01(8.11E-04)†	3.39E+00(3.32E-01)†	1.10E-01(4.85E-05)†	7.31E-02(3.98E-06)
	25	5.58E-01(2.66E-03)†	1.35E-01(4.81E-05)†	7.70E-01(1.89E-03)†	5.48E+00(6.95E-02)†	6.90E-02(1.65E-05)†	6.18E-02(2.47E-06)
	50	7.97E-01(1.89E-03)†	1.15E-01(2.46E-05)†	8.66E-01(1.93E-03)†	5.65E+00(6.83E-02)†	5.76E-02(4.87E-06)	5.66E-02(2.38E-06)
	200	8.30E-01(4.69E-03)†	7.99E-02(2.38E-06)†	8.70E-01(2.55E-03)†	5.82E+00(1.93E-01)†	5.59E-02(4.17E-06)‡	5.81E-02(1.68E-06)
F3	5	1.68E-01(6.53E-02)†	5.30E+00(2.24E+00)†	2.35E-01(1.36E-01)†	4.06E+02(5.79E+03)†	1.67E-01(4.79E-02)†	1.22E-01(2.02E-02)
	25	5.12E+00(5.28E+01)†	7.18E+00(2.01E+00)†	1.74E+01(2.88E+03)†	7.93E+02(1.47E+03)†	2.84E-01(1.55E-01)	1.18E+00(6.39E+00)
	50	4.64E+02(5.56E+03)†	7.13E+00(1.06E+00)†	5.24E+02(3.29E+03)†	8.32E+02(2.26E+03)†	2.11E-01(6.57E-02)†	1.04E-01(2.11E-02)
	200	6.43E+02(1.10E+03)†	7.50E+00(9.53E-01)†	6.72E+02(1.17E+03)†	8.66E+02(4.69E+03)†	1.49E-01(2.38E-02)†	1.20E-01(2.62E-02)
F4	5	5.46E-02(8.51E-05)†	2.80E-02(1.09E-04)‡	3.22E-01(1.55E-03)‡	4.35E-01(2.70E-03)†	1.16E-01(1.80E-04)†	3.61E-02(3.24E-05)
	25	8.04E-01(3.63E-03)†	7.78E-02(3.15E-05)†	9.99E-01(7.17E-04)†	5.17E-01(1.93E-03)†	5.50E-02(2.67E-06)†	4.82E-02(1.05E-05)
	50	1.07E+00(4.15E-04)†	8.34E-02(1.93E-05)†	1.06E+00(8.23E-04)†	5.34E-01(2.19E-03)†	5.29E-02(1.71E-06)	4.87E-02(6.62E-05)
	200	1.09E+00(3.29E-04)†	7.67E-02(3.15E-06)†	1.09E+00(2.38E-04)†	5.17E-01(1.21E-03)†	6.26E-02(1.91E-06)†	4.67E-02(1.05E-04)
WFG1	5	3.46E-01(1.12E-03)	3.08E-01(5.48E-04)‡	3.34E-01(1.65E-03)	2.48E+00(2.24E-02)†	3.47E-01(1.30E-03)	3.40E-01(2.26E-04)
	25	4.48E-01(4.48E-04)†	3.63E-01(3.63E-04)†	4.54E-01(5.96E-04)†	2.83E+00(3.47E-03)†	3.46E-01(1.41E-04)†	3.20E-01(2.07E-04)
	50	4.87E-01(8.15E-04)†	3.50E-01(1.42E-04)†	4.87E-01(5.29E-04)†	2.84E+00(2.84E-03)†	3.32E-01(2.32E-04)†	3.01E-01(1.20E-04)
	200	4.98E-01(5.32E-04)†	3.33E-01(3.14E-05)†	5.00E-01(6.01E-04)†	2.84E+00(7.63E-04)†	2.89E-01(3.22E-04)	2.91E-01(2.96E-04)
WFG2	5	8.27E-01(1.08E-03)†	3.75E-01(6.30E-04)‡	8.51E-01(1.66E-03)†	7.70E-01(1.73E-06)†	6.50E-01(1.14E-03)‡	7.44E-01(2.20E-03)
	25	1.23E+00(4.18E-03)†	3.87E-01(6.33E-05)‡	1.24E+00(9.49E-03)†	7.74E-01(2.62E-07)†	6.80E-01(1.01E-03)	6.72E-01(1.12E-03)
	50	1.26E+00(6.67E-03)†	3.96E-01(3.90E-05)‡	1.24E+00(4.23E-03)†	7.75E-01(1.69E-07)†	6.38E-01(5.30E-04)†	6.24E-01(2.44E-04)
	200	1.26E+00(4.42E-03)†	4.12E-01(2.01E-05)‡	1.27E+00(6.16E-03)†	7.75E-01(2.86E-08)†	6.06E-01(6.14E-05)	6.05E-01(5.16E-05)
WFG3	5	3.05E-02(3.61E-03)‡	3.30E+00(2.72E-03)†	2.72E+00(1.47E-02)†	9.04E-01(4.16E-05)‡	2.20E+00(1.11E-02)†	1.79E+00(2.11E-01)
	25	2.93E+00(2.25E-01)	3.63E+00(2.29E-04)†	3.30E+00(5.04E-03)†	9.16E-01(7.66E-06)‡	2.89E+00(4.04E-03)‡	3.08E+00(1.27E-02)
	50	3.34E+00(5.92E-03)†	3.68E+00(1.66E-04)†	3.34E+00(3.71E-03)†	9.19E-01(8.09E-06)‡	2.97E+00(4.51E-03)‡	3.02E+00(4.80E-03)
	200	3.39E+00(6.58E-03)†	3.72E+00(4.27E-05)†	3.41E+00(3.90E-03)†	9.23E-01(1.59E-05)‡	2.93E+00(3.16E-03)	2.92E+00(2.49E-03)
WFG4	5	7.81E-01(3.30E-04)†	5.55E-01(2.01E-03)	9.61E-01(6.03E-04)†	8.23E-01(3.42E-03)†	6.19E-01(4.07E-04)†	5.53E-01(3.82E-04)
	25	9.55E-01(9.40E-04)†	3.54E-01(2.13E-04)‡	1.04E+00(1.40E-03)†	7.46E-01(2.62E-03)†	4.10E-01(4.63E-05)‡	4.29E-01(1.23E-04)
	50	9.55E-01(1.03E-03)†	3.35E-01(1.23E-04)‡	9.96E-01(1.49E-03)†	7.56E-01(9.03E-04)†	3.77E-01(8.65E-05)‡	3.99E-01(8.33E-05)
	200	8.97E-01(7.67E-04)†	3.30E-01(6.61E-05)‡	9.09E-01(1.17E-03)†	8.59E-01(7.74E-04)†	4.11E-01(6.23E-05)†	4.04E-01(5.89E-05)
WFG5	5	7.96E-01(5.61E-04)†	7.29E-01(6.27E-04)†	1.08E+00(6.40E-04)†	1.95E+00(2.18E-04)†	6.75E-01(3.36E-04)†	6.19E-01(2.70E-04)
	25	9.23E-01(1.58E-03)†	5.12E-01(2.23E-04)†	9.99E-01(8.72E-04)†	1.98E+00(5.23E-05)†	4.88E-01(1.24E-04)	4.89E-01(1.48E-04)
	50	9.44E-01(6.06E-04)†	4.47E-01(1.21E-04)	9.38E-01(7.42E-04)†	1.98E+00(7.63E-05)†	4.50E-01(8.38E-05)	4.52E-01(8.87E-05)
	200	9.07E-01(9.11E-04)†	4.10E-01(6.99E-05)‡	8.99E-01(8.29E-04)†	1.98E+00(8.87E-05)†	4.26E-01(9.03E-05)‡	4.34E-01(3.45E-05)
WFG6	5	8.61E-01(2.90E-03)†	6.73E-01(2.63E-03)	1.17E+00(2.71E-03)†	1.39E+00(4.46E-04)†	8.08E-01(3.73E-03)†	6.47E-01(1.91E-03)
	25	9.66E-01(1.17E-03)†	3.56E-01(1.10E-04)‡	1.03E+00(1.52E-03)†	1.42E+00(1.30E-03)†	5.65E-01(1.27E-02)	5.50E-01(3.06E-03)
	50	9.40E-01(8.26E-04)†	3.31E-01(8.43E-05)‡	9.40E-01(1.60E-03)†	1.44E+00(1.25E-03)†	5.43E-01(9.94E-03)	5.37E-01(2.33E-03)
	200	8.96E-01(5.14E-04)†	3.30E-01(3.47E-05)‡	8.98E-01(7.98E-04)†	1.45E+00(9.81E-04)†	4.36E-01(2.45E-03)‡	5.13E-01(2.90E-03)
WFG7	5	9.27E-01(7.72E-04)†	6.38E-01(7.80E-03)†	1.05E+00(1.65E-03)†	1.25E+00(8.85E-03)†	4.92E-01(3.15E-04)†	4.74E-01(1.99E-04)
	25	1.02E+00(7.84E-04)†	2.69E-01(3.74E-04)‡	1.06E+00(1.05E-03)†	1.39E+00(8.46E-03)†	3.82E-01(1.37E-04)	3.82E-01(1.26E-04)
	50	1.00E+00(6.02E-04)†	2.89E-01(2.74E-04)‡	1.01E+00(1.11E-03)†	1.56E+00(1.03E-02)†	3.69E-01(8.92E-05)‡	3.90E-01(7.00E-05)
	200	9.87E-01(3.79E-04)†	3.43E-01(6.51E-05)‡	9.80E-01(7.22E-04)†	7.78E-01(6.57E-02)†	4.31E-01(4.03E-05)‡	4.57E-01(2.84E-05)
WFG8	5	9.36E-01(1.02E-03)†	6.91E-01(9.75E-03)†	1.05E+00(8.25E-04)†	1.23E+00(9.31E-03)†	4.92E-01(3.44E-04)†	4.74E-01(2.53E-04)
	25	1.01E+00(3.94E-04)†	2.65E-01(2.80E-04)‡	1.06E+00(5.57E-04)†	1.38E+00(1.05E-02)†	3.84E-01(7.52E-05)	3.81E-01(1.33E-04)
	50	9.97E-01(6.02E-04)†	2.91E-01(4.24E-04)‡	1.01E+00(6.25E-04)†	1.55E+00(6.71E-03)†	3.69E-01(5.61E-05)‡	3.90E-01(4.46E-05)
	200	9.86E-01(6.46E-04)†	3.44E-01(6.05E-05)‡	9.81E-01(6.68E-04)†	8.83E-01(7.72E-02)†	4.27E-01(5.22E-05)‡	4.58E-01(4.44E-05)
WFG9	5	1.30E+00(2.03E-02)	1.09E+00(2.92E-04)‡	1.60E+00(6.05E-04)†	1.37E+00(1.05E-02)†	1.33E+00(5.23E-03)†	1.28E+00(6.22E-03)
	25	1.56E+00(2.47E-02)†	1.10E+00(5.03E-04)‡	1.50E+00(3.91E-02)†	1.49E+00(7.98E-03)†	1.29E+00(2.06E-03)	1.25E+00(5.05E-03)
	50	1.63E+00(1.60E-02)†	1.07E+00(9.01E-03)‡	1.11E+00(7.07E-03)‡	1.48E+00(9.64E-03)†	1.26E+00(2.68E-03)†	1.24E+00(1.67E-03)
	200	1.55E+00(6.89E-02)†	9.06E-01(1.08E-01)‡	1.05E+00(1.44E-02)†	1.39E+00(6.13E-03)†	1.21E+00(4.08E-03)‡	1.27E+00(1.94E-03)
+-=		28/22/2	33/15/4	27/20/5	40/8/4	28/8/16	—

TABLE 94
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 6 TO 5 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	9.87E-02(5.59E-02)†	3.66E+00(3.08E-01)†	4.32E-01(1.32E+00)†	7.92E+02(9.10E+03)†	2.18E-01(8.21E-01)†	1.58E-02(1.46E-05)
	25	1.07E+02(6.72E+02)†	2.51E+00(1.21E-01)†	1.20E+02(7.46E+02)†	1.20E+03(5.01E+03)†	9.66E-01(1.02E+00)†	3.51E-02(3.11E-03)
	50	2.26E+02(3.20E+02)†	2.56E+00(8.98E-02)†	2.48E+02(3.82E+02)†	1.27E+03(9.98E+03)†	4.84E-01(5.71E-01)†	2.61E-02(2.02E-03)
	200	2.33E+02(8.86E+02)†	2.45E+00(1.13E-01)†	2.42E+02(4.95E+02)†	1.37E+03(4.64E+03)†	7.72E-02(1.86E-02)‡	1.13E-01(9.99E-02)
F2	5	7.42E-02(2.55E-05)†	2.20E-01(5.37E-04)†	2.94E-01(9.81E-04)†	6.61E+00(7.05E-01)†	1.03E-01(8.21E-05)†	4.98E-02(2.09E-06)
	25	4.87E-01(2.80E-03)†	1.32E-01(4.86E-05)†	5.90E-01(2.99E-03)†	9.27E+00(4.46E-01)†	5.38E-02(8.37E-06)†	4.29E-02(1.22E-06)
	50	5.37E-01(3.08E-03)†	1.06E-01(3.31E-05)†	5.44E-01(2.38E-03)†	9.18E+00(6.36E-01)†	4.62E-02(3.94E-06)†	4.06E-02(8.14E-07)
	200	4.63E-01(3.88E-03)†	6.40E-02(2.81E-06)†	4.62E-01(2.71E-03)†	8.85E+00(3.33E-01)†	4.01E-02(1.52E-06)‡	4.13E-02(5.31E-07)
F3	5	1.82E-01(1.26E-01)†	1.39E+01(4.37E+00)†	4.87E-01(1.30E+00)†	8.63E+02(7.90E+03)†	2.00E-01(2.66E-01)†	1.31E-01(6.90E-02)
	25	1.35E+02(3.23E+03)†	9.78E+00(2.97E+00)†	1.68E+02(5.25E+03)†	1.30E+03(4.83E+03)†	6.00E+00(4.00E+01)†	9.30E-01(8.16E+00)
	50	4.12E+02(1.55E+03)†	9.87E+00(1.50E+00)†	4.78E+02(1.42E+03)†	1.41E+03(4.81E+03)†	9.72E-01(3.57E+00)†	5.37E-02(1.90E-03)
	200	4.66E+02(1.88E+03)†	9.53E+00(1.11E+00)†	4.95E+02(2.29E+03)†	1.42E+03(3.39E+03)†	7.26E-02(2.33E-03)†	5.18E-02(1.87E-03)
F4	5	6.43E-02(1.67E-04)†	4.55E-02(2.97E-04)†	4.08E-01(1.95E-03)†	4.80E-01(8.01E-03)†	1.01E-01(2.95E-04)†	2.40E-02(2.62E-05)
	25	8.75E-01(4.71E-03)†	8.99E-02(6.45E-05)†	9.43E-01(1.30E-03)†	4.55E-01(1.58E-03)†	4.36E-02(3.05E-06)†	2.71E-02(3.75E-05)
	50	1.01E+00(3.36E-03)†	8.79E-02(3.70E-05)†	8.48E-01(2.51E-03)†	4.26E-01(5.88E-04)†	3.95E-02(1.88E-06)†	2.65E-02(4.61E-05)
	200	7.87E-01(2.35E-03)†	7.04E-02(7.84E-06)†	7.42E-01(1.74E-03)†	4.52E-01(4.68E-04)†	3.87E-02(8.89E-07)†	2.59E-02(5.75E-05)
WFG1	5	2.74E-01(6.38E-04)†	4.51E-01(7.46E-04)†	2.56E-01(1.11E-03)†	2.43E+00(3.74E-02)†	2.50E-01(3.22E-04)†	2.34E-01(1.62E-04)
	25	3.51E-01(3.25E-04)†	4.22E-01(2.82E-04)†	3.55E-01(3.57E-04)†	2.81E+00(7.21E-03)†	2.47E-01(2.08E-04)†	2.38E-01(1.39E-04)
	50	3.64E-01(2.85E-04)†	3.85E-01(1.33E-04)†	3.63E-01(2.58E-04)†	2.79E+00(8.50E-03)†	2.42E-01(1.71E-04)†	2.31E-01(1.69E-04)
	200	3.67E-01(3.89E-04)†	3.38E-01(3.99E-05)†	3.65E-01(2.25E-04)†	2.80E+00(3.24E-03)†	2.21E-01(1.44E-04)‡	2.31E-01(9.39E-05)
WFG2	5	6.41E-01(7.59E-04)†	4.70E-01(1.02E-03)‡	6.72E-01(1.13E-03)†	7.21E-01(4.87E-06)†	5.27E-01(6.93E-04)‡	6.01E-01(9.34E-04)
	25	8.59E-01(3.02E-03)†	4.48E-01(2.28E-04)‡	8.16E-01(3.85E-03)†	7.26E-01(4.15E-07)†	5.62E-01(8.06E-04)	5.57E-01(1.73E-04)
	50	8.61E-01(5.80E-03)†	4.51E-01(1.96E-04)‡	8.53E-01(2.36E-03)†	7.27E-01(2.67E-07)†	5.56E-01(4.33E-04)†	5.43E-01(1.99E-04)
	200	8.73E-01(5.19E-03)†	4.62E-01(1.74E-04)‡	8.65E-01(3.15E-03)†	7.28E-01(4.30E-09)†	5.32E-01(9.10E-05)‡	5.41E-01(2.27E-05)
WFG3	5	4.60E-02(6.07E-03)‡	2.54E+00(1.36E-03)†	2.08E+00(1.26E-02)†	8.32E-01(7.14E-05)	1.72E+00(7.22E-03)†	8.76E-01(1.09E-01)
	25	2.20E+00(3.19E-02)†	2.76E+00(2.78E-04)†	2.38E+00(3.90E-03)†	8.62E-01(3.43E-05)‡	1.80E+00(1.65E-02)†	1.53E+00(2.38E-02)
	50	2.39E+00(3.61E-03)†	2.79E+00(8.29E-05)†	2.41E+00(4.48E-03)†	8.70E-01(5.84E-06)‡	1.88E+00(6.58E-03)†	1.67E+00(2.54E-02)
	200	2.43E+00(1.83E-03)†	2.80E+00(6.21E-05)†	2.44E+00(2.39E-03)†	8.75E-01(3.06E-06)‡	1.95E+00(2.22E-03)†	1.84E+00(2.71E-03)
WFG4	5	4.58E-01(1.65E-04)†	4.53E-01(8.68E-04)†	6.35E-01(4.54E-04)†	7.68E-01(2.07E-03)†	3.56E-01(1.40E-04)†	3.04E-01(2.25E-05)
	25	5.08E-01(2.74E-04)†	3.58E-01(8.97E-05)†	5.37E-01(3.56E-04)†	7.26E-01(1.79E-03)†	2.47E-01(2.30E-05)‡	2.54E-01(3.17E-05)
	50	4.63E-01(1.71E-04)†	3.41E-01(4.66E-05)†	4.79E-01(2.41E-04)†	7.04E-01(1.96E-03)†	2.44E-01(3.65E-05)‡	2.47E-01(2.95E-05)
	200	4.32E-01(1.42E-04)†	3.12E-01(2.79E-05)†	4.37E-01(1.34E-04)†	7.10E-01(1.44E-03)†	2.34E-01(2.65E-05)‡	2.37E-01(1.85E-05)
WFG5	5	4.76E-01(3.25E-04)†	4.55E-01(2.13E-04)†	7.19E-01(4.67E-04)†	1.79E+00(1.34E-03)†	4.02E-01(1.12E-04)†	3.39E-01(4.56E-05)
	25	5.05E-01(2.44E-04)†	3.79E-01(7.63E-05)†	5.26E-01(2.89E-04)†	1.82E+00(1.14E-03)†	2.93E-01(3.65E-05)	2.90E-01(3.43E-05)
	50	4.64E-01(1.76E-04)†	3.54E-01(8.09E-05)†	4.80E-01(1.75E-04)†	1.81E+00(8.91E-04)†	2.77E-01(3.11E-05)‡	2.82E-01(2.86E-05)
	200	4.46E-01(2.06E-04)†	3.22E-01(2.67E-05)†	4.45E-01(2.06E-04)†	1.76E+00(4.86E-04)†	2.70E-01(3.24E-05)‡	2.86E-01(2.89E-05)
WFG6	5	5.22E-01(1.71E-03)†	5.27E-01(1.57E-03)†	8.14E-01(4.48E-03)†	1.46E+00(2.10E-04)†	5.32E-01(2.43E-03)†	3.87E-01(1.12E-03)
	25	5.42E-01(7.89E-04)†	3.95E-01(1.05E-03)†	5.55E-01(7.18E-04)†	1.49E+00(7.48E-04)†	3.57E-01(6.25E-03)	3.33E-01(1.19E-03)
	50	4.75E-01(2.17E-04)†	3.75E-01(8.60E-04)†	4.82E-01(3.81E-04)†	1.50E+00(7.40E-04)†	3.30E-01(4.49E-03)	3.32E-01(9.48E-04)
	200	4.52E-01(2.07E-04)†	3.44E-01(7.77E-04)†	4.53E-01(8.49E-05)†	1.52E+00(7.89E-04)†	2.66E-01(8.69E-04)‡	3.24E-01(1.02E-03)
WFG7	5	5.89E-01(2.97E-04)†	5.37E-01(1.75E-03)†	6.87E-01(6.74E-04)†	8.62E-01(4.04E-03)†	3.53E-01(1.80E-04)†	2.96E-01(6.28E-05)
	25	5.62E-01(2.44E-04)†	3.57E-01(3.92E-04)†	5.93E-01(3.53E-04)†	6.65E-01(6.92E-03)†	2.54E-01(4.39E-05)†	2.40E-01(2.80E-05)
	50	5.41E-01(2.19E-04)†	3.83E-01(5.29E-04)†	5.45E-01(4.49E-04)†	7.32E-01(5.57E-03)†	2.42E-01(5.97E-05)†	2.35E-01(2.64E-05)
	200	5.22E-01(3.61E-04)†	4.06E-01(2.21E-04)†	5.27E-01(1.97E-04)†	7.22E-01(1.71E-02)†	2.33E-01(1.85E-05)†	2.30E-01(1.90E-05)
WFG8	5	5.91E-01(4.94E-04)†	5.55E-01(1.88E-03)†	6.86E-01(7.45E-04)†	8.65E-01(4.18E-03)†	3.53E-01(2.55E-04)†	2.93E-01(1.67E-04)
	25	5.55E-01(4.13E-04)†	3.47E-01(7.22E-04)†	5.95E-01(3.35E-04)†	6.36E-01(9.27E-03)†	2.53E-01(4.06E-05)†	2.41E-01(2.11E-05)
	50	5.39E-01(3.29E-04)†	3.86E-01(2.42E-04)†	5.45E-01(2.82E-04)†	6.93E-01(9.90E-03)†	2.39E-01(2.80E-05)†	2.35E-01(3.80E-05)
	200	5.26E-01(1.60E-04)†	4.09E-01(2.36E-04)†	5.25E-01(3.12E-04)†	7.53E-01(9.45E-03)†	2.31E-01(9.17E-06)†	2.30E-01(1.50E-05)
WFG9	5	9.06E-01(2.29E-02)	6.97E-01(2.34E-03)‡	1.22E+00(1.23E-03)†	1.02E+00(4.19E-03)†	9.48E-01(1.78E-03)†	9.06E-01(4.69E-03)
	25	1.12E+00(1.42E-02)†	8.09E-01(9.85E-04)‡	8.76E-01(8.97E-02)	9.82E-01(3.70E-03)†	9.04E-01(3.53E-04)	8.73E-01(4.94E-03)
	50	1.11E+00(1.64E-02)†	8.15E-01(7.92E-03)‡	5.33E-01(3.08E-04)‡	9.75E-01(5.43E-03)†	8.73E-01(6.92E-04)	8.70E-01(4.31E-03)
	200	9.71E-01(7.91E-02)†	7.33E-01(4.62E-02)‡	5.27E-01(1.19E-02)‡	8.30E-01(1.02E-02)	8.26E-01(2.14E-03)‡	8.78E-01(1.96E-03)
+-=		28/22/2	33/15/4	27/20/5	40/8/4	28/8/16	—

TABLE 95
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 5 TO 4 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.23E+00(3.57E+00)†	7.77E+00(2.34E+00)†	2.76E+00(2.07E+01)†	1.00E+03(6.43E+03)†	7.50E-01(1.51E+01)†	2.90E-02(1.07E-02)
	25	8.19E+01(2.80E+02)†	2.54E+00(1.19E-01)†	8.99E+01(2.38E+02)†	1.28E+03(4.22E+03)†	2.91E+00(7.57E+00)†	2.57E-02(2.99E-03)
	50	7.95E+01(1.31E+02)†	2.56E+00(7.84E-02)†	9.03E+01(1.48E+02)†	1.34E+03(2.10E+03)†	3.71E-01(4.50E-01)†	2.91E-02(6.50E-03)
	200	1.22E+01(5.56E+01)†	2.57E+00(8.66E-02)†	2.47E+01(1.66E+02)†	1.35E+03(2.87E+03)†	1.70E-02(6.33E-04)	2.96E-02(3.54E-03)
F2	5	5.44E-02(2.74E-05)†	2.57E-01(5.33E-04)†	2.24E-01(1.06E-03)†	1.34E+01(2.15E+00)†	8.01E-02(3.60E-04)†	2.28E-02(6.60E-07)
	25	1.57E-01(7.83E-04)†	1.04E-01(2.86E-05)†	1.79E-01(1.15E-03)†	1.65E+01(3.43E-01)†	2.90E-02(3.35E-06)†	2.06E-02(2.42E-07)
	50	9.36E-02(2.67E-04)†	7.06E-02(1.59E-05)†	9.21E-02(1.52E-04)†	1.67E+01(1.28E-01)†	2.30E-02(1.95E-06)†	2.03E-02(1.62E-07)
	200	4.65E-02(6.59E-05)†	3.22E-02(8.48E-07)†	4.49E-02(7.19E-05)†	1.65E+01(4.63E-01)†	1.96E-02(5.45E-07)‡	2.08E-02(3.43E-07)
F3	5	1.18E+00(4.56E+00)†	2.70E+01(1.88E+01)†	2.67E+00(2.57E+01)†	1.78E+03(1.77E+04)†	4.82E-01(1.43E+00)†	2.50E-02(5.46E-05)
	25	1.48E+02(5.30E+02)†	8.30E+00(1.34E+00)†	1.73E+02(9.41E+02)†	2.55E+03(1.91E+04)†	1.47E+01(1.50E+02)†	9.18E-02(2.03E-02)
	50	1.55E+02(4.48E+02)†	8.37E+00(1.40E+00)†	1.90E+02(8.25E+02)†	2.75E+03(3.97E+03)†	1.37E+00(4.41E+00)†	1.13E-01(1.67E-01)
	200	3.32E+01(1.08E+02)†	8.56E+00(1.65E+00)†	4.19E+01(1.92E+02)†	2.84E+03(8.24E+03)†	9.98E-02(4.61E-02)†	2.52E-02(9.75E-04)
F4	5	7.25E-02(4.27E-04)†	8.87E-02(9.03E-04)†	4.01E-01(1.78E-03)†	5.05E-01(7.67E-03)†	8.61E-02(6.45E-04)†	1.36E-02(5.15E-05)
	25	3.98E-01(8.23E-03)†	1.02E-01(1.15E-04)†	3.06E-01(3.17E-03)†	3.64E-01(1.38E-03)†	2.40E-02(4.68E-06)†	1.60E-02(1.07E-05)
	50	2.61E-01(4.26E-03)†	7.74E-02(3.64E-05)†	1.08E-01(4.71E-04)†	3.58E-01(1.26E-03)†	2.00E-02(4.13E-07)†	1.59E-02(1.08E-05)
	200	4.12E-02(6.17E-05)†	4.37E-02(3.10E-06)†	3.98E-02(3.36E-05)†	4.11E-01(3.52E-04)†	2.07E-02(3.24E-07)†	1.62E-02(2.47E-05)
WFG1	5	2.04E-01(2.59E-04)†	5.36E-01(5.80E-04)†	1.97E-01(5.64E-04)†	2.41E+00(2.03E-02)†	1.64E-01(3.29E-04)†	1.18E-01(3.69E-05)
	25	2.23E-01(1.37E-04)†	3.96E-01(4.22E-04)†	2.50E-01(1.21E-04)†	2.70E+00(3.38E-02)†	1.73E-01(3.13E-04)†	1.14E-01(4.47E-04)
	50	2.14E-01(1.91E-04)†	3.23E-01(1.56E-04)†	2.22E-01(2.18E-04)†	2.72E+00(1.62E-02)†	1.54E-01(9.75E-05)†	1.15E-01(2.16E-05)
	200	1.98E-01(4.80E-05)†	2.28E-01(3.52E-05)†	1.98E-01(7.19E-05)†	2.76E+00(4.19E-03)†	1.18E-01(1.56E-05)	1.18E-01(1.32E-05)
WFG2	5	3.20E-01(6.09E-04)†	3.99E-01(5.85E-04)†	3.32E-01(8.66E-04)†	8.36E-01(6.67E-06)†	2.61E-01(2.92E-04)‡	3.03E-01(2.39E-04)
	25	4.33E-01(3.96E-03)†	2.87E-01(3.86E-05)†	3.63E-01(1.91E-03)†	8.42E-01(1.92E-06)†	2.93E-01(2.70E-04)†	2.83E-01(9.63E-05)
	50	4.01E-01(3.82E-03)†	2.83E-01(2.37E-05)†	3.72E-01(1.16E-03)†	8.44E-01(5.41E-07)†	2.94E-01(1.83E-04)†	2.64E-01(3.97E-05)
	200	4.03E-01(1.51E-03)†	2.79E-01(6.45E-06)†	4.41E-01(2.38E-03)†	8.45E-01(6.55E-07)†	2.58E-01(2.87E-05)	2.57E-01(1.37E-05)
WFG3	5	2.24E-02(1.07E-03)‡	1.78E+00(1.14E-03)†	1.48E+00(7.06E-03)†	8.34E-01(1.19E-04)†	1.33E+00(3.28E-03)†	4.04E-01(2.80E-02)
	25	1.44E+00(1.46E-03)†	1.83E+00(1.21E-04)†	1.47E+00(1.91E-03)†	8.55E-01(9.72E-05)‡	1.33E+00(7.31E-04)†	1.22E+00(1.94E-02)
	50	1.48E+00(1.16E-03)†	1.83E+00(4.54E-05)†	1.46E+00(1.51E-03)†	8.67E-01(6.92E-05)‡	1.34E+00(3.08E-04)	1.32E+00(2.30E-03)
	200	1.49E+00(1.32E-03)†	1.83E+00(3.29E-06)†	1.48E+00(1.47E-03)†	8.76E-01(1.67E-05)‡	1.35E+00(1.30E-04)†	1.30E+00(5.00E-03)
WFG4	5	2.67E-01(1.17E-04)†	3.62E-01(6.73E-04)†	3.98E-01(3.62E-04)†	7.35E-01(1.82E-03)†	1.71E-01(5.38E-05)†	1.16E-01(6.83E-06)
	25	2.06E-01(9.39E-05)†	2.68E-01(5.23E-05)†	2.33E-01(9.04E-05)†	6.58E-01(1.13E-03)†	9.81E-02(5.38E-06)	9.90E-02(4.56E-06)
	50	1.91E-01(3.25E-05)†	2.38E-01(5.08E-05)†	2.08E-01(5.63E-05)†	6.27E-01(7.32E-04)†	9.76E-02(2.89E-06)	9.71E-02(6.57E-06)
	200	1.83E-01(3.45E-05)†	1.84E-01(1.35E-05)†	1.88E-01(4.82E-05)†	6.58E-01(8.13E-04)†	9.82E-02(3.11E-06)	9.76E-02(3.75E-06)
WFG5	5	2.85E-01(2.56E-04)†	3.42E-01(5.08E-04)†	4.39E-01(6.38E-04)†	1.20E+00(1.75E-03)†	2.00E-01(4.17E-05)†	1.50E-01(8.35E-06)
	25	2.16E-01(5.21E-05)†	2.26E-01(6.68E-05)†	2.45E-01(1.20E-04)†	1.20E+00(3.50E-03)†	1.36E-01(6.83E-06)	1.36E-01(1.54E-06)
	50	1.99E-01(2.58E-05)†	2.03E-01(1.86E-05)†	2.14E-01(3.22E-05)†	1.17E+00(4.91E-03)†	1.22E-01(8.19E-06)‡	1.36E-01(2.47E-06)
	200	1.91E-01(1.80E-05)†	1.68E-01(5.83E-06)†	1.94E-01(4.03E-05)†	1.12E+00(4.01E-03)†	1.15E-01(2.82E-06)‡	1.39E-01(3.08E-06)
WFG6	5	3.08E-01(1.75E-03)†	4.34E-01(1.34E-03)†	5.13E-01(4.64E-03)†	1.45E+00(2.29E-04)†	3.84E-01(5.72E-03)†	1.97E-01(8.49E-04)
	25	2.50E-01(5.28E-04)†	3.14E-01(1.10E-04)†	2.51E-01(2.02E-04)†	1.48E+00(5.94E-04)†	1.86E-01(4.93E-03)	1.67E-01(8.16E-04)
	50	2.03E-01(6.09E-05)†	2.64E-01(5.98E-05)†	2.03E-01(6.36E-05)†	1.49E+00(6.29E-04)†	1.61E-01(3.37E-03)	1.67E-01(6.33E-04)
	200	1.84E-01(3.88E-05)†	1.88E-01(2.45E-05)†	1.83E-01(2.97E-05)†	1.52E+00(1.24E-03)†	1.11E-01(6.58E-04)‡	1.65E-01(6.92E-04)
WFG7	5	3.23E-01(3.67E-04)†	5.25E-01(3.90E-03)†	4.18E-01(5.60E-04)†	6.36E-01(3.41E-03)†	2.20E-01(1.70E-04)†	1.18E-01(2.00E-05)
	25	2.38E-01(1.09E-04)†	4.76E-01(3.84E-04)†	2.64E-01(1.22E-04)†	3.90E-01(3.28E-03)†	1.01E-01(1.03E-05)†	9.46E-02(4.22E-06)
	50	2.17E-01(7.07E-05)†	4.46E-01(4.73E-04)†	2.24E-01(9.32E-05)†	3.44E-01(1.96E-03)†	9.55E-02(3.40E-06)	9.55E-02(4.34E-06)
	200	1.98E-01(4.67E-05)†	2.93E-01(7.32E-04)†	2.03E-01(7.32E-05)†	4.13E-01(6.72E-03)†	9.88E-02(4.53E-06)‡	1.01E-01(2.26E-06)
WFG8	5	3.21E-01(5.95E-04)†	5.62E-01(3.38E-03)†	4.16E-01(8.02E-04)†	6.16E-01(3.58E-03)†	2.26E-01(2.40E-04)†	1.17E-01(1.90E-05)
	25	2.36E-01(1.22E-04)†	4.65E-01(1.21E-03)†	2.60E-01(1.37E-04)†	3.92E-01(5.20E-03)†	1.02E-01(9.61E-06)†	9.51E-02(4.94E-06)
	50	2.15E-01(9.80E-05)†	4.48E-01(3.01E-04)†	2.21E-01(6.89E-05)†	3.60E-01(3.87E-03)†	9.48E-02(3.93E-06)	9.47E-02(3.54E-06)
	200	2.01E-01(3.94E-05)†	2.94E-01(5.05E-04)†	2.03E-01(3.50E-05)†	3.99E-01(4.20E-03)†	9.82E-02(3.42E-06)‡	1.01E-01(1.77E-06)
WFG9	5	7.44E-01(1.42E-02)	6.38E-01(2.32E-03)‡	9.49E-01(1.43E-04)†	7.67E-01(5.17E-03)	7.76E-01(2.29E-03)†	7.26E-01(4.27E-03)
	25	8.42E-01(4.20E-03)†	7.13E-01(4.50E-05)	4.54E-01(8.80E-02)‡	6.83E-01(4.50E-03)	6.87E-01(9.39E-04)	6.84E-01(1.46E-03)
	50	8.31E-01(1.50E-02)†	6.93E-01(3.60E-03)	1.97E-01(6.79E-05)‡	7.43E-01(2.72E-03)†	6.56E-01(1.06E-03)	6.78E-01(1.62E-03)
	200	6.65E-01(8.50E-02)†	5.68E-01(4.17E-02)	2.01E-01(1.40E-02)‡	4.57E-01(1.23E-02)‡	6.12E-01(1.75E-03)‡	6.70E-01(1.76E-03)
+-=		28/22/2	33/15/4	27/20/5	40/8/4	28/8/16	—

TABLE 96
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 4 TO 3 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.84E+01(9.13E+01)†	1.57E+01(1.28E+01)†	1.69E+01(3.55E+02)†	2.68E+02(3.18E+03)†	2.66E+00(1.64E+01)†	1.74E-03(4.43E-09)
	25	3.74E+01(8.89E+01)†	7.56E-02(1.18E-03)†	6.19E+01(1.21E+02)†	7.84E+01(5.74E+02)†	3.83E+00(1.41E+01)†	2.03E-03(1.79E-06)
	50	1.26E+01(4.23E+01)†	1.93E-02(5.63E-06)†	2.41E+01(1.54E+02)†	4.92E+01(8.14E+01)†	6.32E-01(5.96E-01)†	1.65E-03(1.03E-08)
	200	2.05E-02(3.93E-03)†	3.71E-03(7.85E-08)‡	3.39E-02(6.08E-03)†	9.63E+00(3.79E+01)†	2.88E-02(1.44E-02)†	1.22E-02(3.50E-03)
F2	5	3.42E-02(2.24E-05)†	2.12E-01(3.66E-04)†	1.31E-01(5.49E-04)†	1.44E+00(5.86E-01)†	5.96E-02(1.12E-04)†	5.59E-03(7.33E-08)
	25	1.62E-02(7.85E-06)†	4.65E-02(1.18E-05)†	1.89E-02(5.10E-06)†	2.00E-01(3.23E-04)†	9.53E-03(1.33E-06)†	4.96E-03(3.61E-08)
	50	9.72E-03(5.89E-07)†	2.66E-02(4.14E-06)†	1.03E-02(8.75E-07)†	2.22E-01(5.56E-05)†	6.01E-03(3.93E-07)†	4.61E-03(2.51E-08)
	200	8.29E-03(1.75E-07)†	7.13E-03(6.80E-08)†	8.23E-03(1.20E-07)†	2.47E-01(3.94E-05)†	4.50E-03(2.05E-08)†	4.41E-03(8.53E-09)
F3	5	2.10E+01(1.70E+02)†	4.36E+01(9.94E+01)†	3.19E+01(1.27E+03)†	7.68E+02(1.84E+04)†	4.82E+00(6.46E+01)†	1.69E-02(4.44E-03)
	25	7.91E+01(3.32E+02)†	1.96E-01(2.79E-03)†	1.36E+02(6.21E+02)†	2.80E+02(1.13E+04)†	1.29E+01(1.10E+02)†	7.76E-02(1.46E-01)
	50	3.64E+01(1.61E+02)†	6.20E-02(5.38E-05)†	5.48E+01(3.19E+02)†	1.45E+02(1.15E+03)†	1.35E+00(1.65E+00)†	4.51E-03(1.81E-07)
	200	3.82E-02(9.63E-03)†	1.45E-02(1.42E-06)†	6.62E-02(4.19E-02)†	1.87E+01(1.41E+02)†	5.59E-02(3.66E-02)†	5.65E-03(5.06E-05)
F4	5	1.03E-01(1.25E-03)†	1.48E-01(1.10E-03)†	3.33E-01(1.59E-03)†	5.15E-01(2.59E-02)†	6.22E-02(3.62E-04)†	1.38E-02(1.33E-03)
	25	5.07E-02(3.50E-04)†	5.78E-02(3.99E-05)†	2.49E-02(1.87E-05)†	2.35E-01(2.87E-04)†	9.49E-03(5.48E-06)†	3.82E-03(1.43E-06)
	50	1.28E-02(2.30E-06)†	3.26E-02(8.99E-06)†	1.06E-02(9.31E-07)†	2.25E-01(1.08E-04)†	5.62E-03(2.57E-07)†	4.28E-03(6.53E-07)
	200	7.96E-03(8.95E-08)†	8.08E-03(1.08E-07)†	8.08E-03(1.73E-07)†	2.43E-01(3.40E-05)†	4.42E-03(1.41E-08)†	3.89E-03(6.76E-07)
WFG1	5	1.45E-01(1.89E-04)†	6.27E-01(7.30E-04)†	1.57E-01(5.42E-04)†	4.75E-01(3.11E-04)†	1.26E-01(1.39E-04)†	3.13E-02(1.09E-05)
	25	1.26E-01(1.32E-04)†	3.81E-01(4.47E-04)†	1.56E-01(1.67E-04)†	4.58E-01(5.09E-05)†	1.22E-01(2.90E-04)†	2.96E-02(3.00E-05)
	50	9.35E-02(3.64E-05)†	2.74E-01(3.02E-04)†	1.05E-01(1.71E-04)†	4.45E-01(3.92E-05)†	7.07E-02(4.59E-05)†	2.95E-02(1.45E-06)
	200	5.33E-02(6.33E-06)†	1.32E-01(8.77E-05)†	5.38E-02(7.09E-06)†	4.43E-01(2.18E-05)†	2.96E-02(4.79E-07)‡	3.02E-02(2.52E-06)
WFG2	5	1.26E-01(2.30E-04)†	3.58E-01(6.81E-04)†	1.55E-01(4.67E-04)†	6.47E-01(2.51E-04)†	1.33E-01(2.90E-04)†	7.30E-02(1.50E-05)
	25	8.56E-02(9.46E-05)†	1.28E-01(3.20E-05)†	8.19E-02(1.55E-05)†	6.43E-01(3.62E-05)†	6.86E-02(1.47E-05)†	6.52E-02(9.33E-06)
	50	8.50E-02(5.33E-05)†	1.04E-01(1.13E-05)†	8.22E-02(3.99E-05)†	6.48E-01(2.53E-05)†	6.68E-02(1.79E-05)	6.62E-02(1.47E-05)
	200	8.68E-02(8.44E-05)†	8.00E-02(2.21E-06)†	8.50E-02(9.01E-05)†	6.48E-01(7.70E-06)†	6.59E-02(6.11E-06)	6.68E-02(2.84E-06)
WFG3	5	2.15E-02(7.55E-04)‡	1.10E+00(7.34E-03)†	9.56E-01(4.25E-03)†	4.22E-01(5.88E-04)‡	9.34E-01(8.31E-03)†	8.12E-02(7.76E-04)
	25	5.14E-01(1.31E-03)†	8.79E-01(9.86E-05)†	5.60E-01(7.66E-04)†	4.27E-01(1.31E-04)	6.54E-01(2.17E-03)†	4.46E-01(2.44E-03)
	50	5.11E-01(9.49E-04)‡	8.49E-01(8.88E-06)†	5.08E-01(3.09E-04)‡	4.30E-01(1.25E-04)‡	5.46E-01(1.82E-04)	5.30E-01(1.66E-03)
	200	5.13E-01(4.61E-04)‡	8.38E-01(9.95E-07)†	5.19E-01(4.43E-04)‡	4.27E-01(4.45E-05)‡	5.30E-01(5.04E-05)‡	5.35E-01(1.03E-04)
WFG4	5	1.29E-01(5.33E-05)†	3.82E-01(5.12E-04)†	2.29E-01(2.26E-04)†	6.54E-01(8.57E-04)†	7.84E-02(4.19E-05)†	2.54E-02(1.34E-06)
	25	7.04E-02(1.97E-05)†	2.10E-01(8.47E-05)†	9.67E-02(1.71E-05)†	5.56E-01(9.18E-05)†	2.08E-02(3.10E-07)†	1.91E-02(1.33E-07)
	50	6.27E-02(2.20E-05)†	1.74E-01(6.74E-05)†	7.76E-02(1.21E-05)†	5.38E-01(6.62E-05)†	1.85E-02(1.99E-07)†	1.82E-02(1.78E-07)
	200	5.49E-02(7.24E-06)†	1.20E-01(1.86E-05)†	5.96E-02(1.05E-05)†	5.22E-01(7.95E-05)†	1.80E-02(1.16E-07)	1.81E-02(1.14E-07)
WFG5	5	1.62E-01(7.63E-05)†	3.17E-01(7.18E-04)†	2.63E-01(4.92E-04)†	4.95E-01(1.32E-03)†	1.15E-01(4.24E-05)†	7.60E-02(9.04E-07)
	25	1.00E-01(4.22E-06)†	1.56E-01(6.94E-05)†	1.22E-01(5.94E-05)†	4.58E-01(3.08E-04)†	6.72E-02(1.35E-05)‡	7.28E-02(1.01E-07)
	50	9.33E-02(4.07E-06)†	1.25E-01(3.88E-05)†	1.02E-01(1.44E-05)†	4.50E-01(2.79E-04)†	4.99E-02(5.65E-06)‡	7.21E-02(3.07E-08)
	200	8.94E-02(2.40E-06)†	9.20E-02(7.75E-06)†	9.00E-02(3.36E-06)†	4.40E-01(6.31E-04)†	4.05E-02(4.12E-08)‡	7.19E-02(1.33E-08)
WFG6	5	2.22E-01(2.20E-03)†	5.91E-01(1.53E-03)†	3.80E-01(4.21E-03)†	1.01E+00(1.24E-02)†	3.55E-01(1.11E-02)†	1.16E-01(9.18E-04)
	25	1.01E-01(2.82E-04)	2.49E-01(2.00E-04)†	1.05E-01(1.46E-04)	1.03E+00(3.86E-04)†	1.15E-01(4.61E-03)	9.75E-02(7.37E-04)
	50	6.31E-02(2.75E-05)‡	1.84E-01(1.13E-04)†	6.64E-02(4.61E-05)‡	1.06E+00(4.74E-04)†	9.06E-02(3.50E-03)	9.68E-02(6.15E-04)
	200	4.15E-02(8.66E-06)‡	9.74E-02(2.88E-05)	4.36E-02(7.06E-06)‡	1.09E+00(1.08E-03)†	3.22E-02(8.81E-04)‡	9.30E-02(7.08E-04)
WFG7	5	1.63E-01(3.04E-04)†	7.57E-01(1.79E-03)†	2.54E-01(3.94E-04)†	4.59E-01(2.41E-03)†	1.61E-01(2.00E-04)†	2.43E-02(1.69E-06)
	25	5.90E-02(3.72E-05)†	4.90E-01(6.30E-04)†	7.61E-02(3.70E-05)†	2.78E-01(1.54E-04)†	2.47E-02(2.37E-06)†	1.86E-02(2.23E-07)
	50	4.35E-02(8.72E-06)†	3.60E-01(6.56E-04)†	4.83E-02(1.01E-05)†	2.66E-01(1.12E-04)†	1.89E-02(2.81E-07)†	1.83E-02(1.83E-07)
	200	3.22E-02(3.06E-06)†	1.59E-01(1.65E-04)†	3.23E-02(2.56E-06)†	2.61E-01(4.35E-05)†	1.84E-02(1.10E-07)‡	1.87E-02(1.11E-07)
WFG8	5	1.64E-01(3.61E-04)†	7.72E-01(1.16E-03)†	2.56E-01(3.16E-04)†	4.48E-01(3.35E-03)†	1.59E-01(1.95E-04)†	2.43E-02(2.12E-06)
	25	5.99E-02(3.16E-05)†	4.79E-01(9.05E-04)†	7.57E-02(2.63E-05)†	2.82E-01(2.17E-04)†	2.49E-02(3.16E-06)†	1.85E-02(2.23E-07)
	50	4.31E-02(6.13E-06)†	3.57E-01(9.26E-04)†	4.79E-02(1.23E-05)†	2.61E-01(7.48E-05)†	1.88E-02(2.08E-07)†	1.81E-02(1.51E-07)
	200	3.21E-02(2.49E-06)†	1.60E-01(1.93E-04)†	3.23E-02(2.75E-06)†	2.63E-01(5.84E-05)†	1.85E-02(1.17E-07)	1.87E-02(1.10E-07)
WFG9	5	6.21E-01(6.56E-03)	6.61E-01(1.92E-03)†	7.16E-01(1.41E-03)†	5.48E-01(5.92E-03)‡	6.76E-01(1.29E-03)†	6.27E-01(1.57E-03)
	25	6.59E-01(5.13E-04)†	6.06E-01(3.38E-05)†	2.53E-01(7.74E-02)‡	3.35E-01(2.63E-03)‡	5.79E-01(1.18E-03)	5.66E-01(9.07E-04)
	50	6.20E-01(1.15E-02)†	5.79E-01(3.37E-03)†	4.90E-02(9.33E-06)‡	3.43E-01(2.76E-03)‡	5.33E-01(8.63E-04)‡	5.63E-01(5.19E-04)
	200	4.46E-01(6.12E-02)	4.44E-01(4.40E-02)	5.75E-02(9.75E-03)‡	3.05E-01(1.41E-03)‡	4.97E-01(1.39E-03)‡	5.55E-01(1.25E-03)
+-=		28/22/2	33/15/4	27/20/5	40/8/4	28/8/16	—

TABLE 97
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 3 TO 2 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.41E+01(4.00E+01)†	3.43E+01(3.46E+01)†	3.33E+01(3.15E+02)†	2.68E+02(4.19E+03)†	5.25E+00(2.14E+01)†	6.70E-05(6.22E-09)
	25	1.54E+01(1.56E+01)†	8.52E-02(1.44E-03)†	2.21E+01(3.03E+01)†	8.54E+01(2.00E+02)†	2.30E+00(5.88E+00)†	8.61E-05(8.54E-09)
	50	1.88E+00(1.90E+00)†	4.76E-03(1.38E-06)‡	2.62E+00(2.31E+00)†	5.68E+01(4.79E+01)†	3.60E-01(3.81E-01)†	2.80E-02(1.24E-02)
	200	2.02E-04(2.96E-08)†	9.02E-05(2.19E-10)†	5.34E-04(3.31E-06)†	1.12E+00(9.24E-01)†	4.51E-05(1.79E-09)	6.38E-05(6.52E-09)
F2	5	1.63E-02(7.23E-06)†	1.32E-01(1.61E-04)†	5.91E-02(2.25E-04)†	2.97E-01(3.65E-02)†	1.91E-02(2.48E-05)†	1.05E-04(7.32E-10)
	25	1.01E-03(6.75E-08)†	6.50E-03(2.63E-07)†	1.30E-03(2.03E-08)†	2.50E-03(1.55E-07)†	9.31E-04(3.36E-08)†	6.47E-05(3.36E-10)
	50	3.29E-04(4.02E-09)†	2.52E-03(3.30E-08)†	3.91E-04(2.40E-09)†	6.72E-04(6.52E-09)†	2.43E-04(1.65E-09)†	5.31E-05(1.84E-10)
	200	1.66E-04(4.05E-10)†	1.97E-04(2.41E-10)†	1.73E-04(5.40E-10)†	6.78E-05(1.17E-11)†	6.68E-05(2.22E-09)†	4.54E-05(1.09E-10)
F3	5	2.02E+01(5.84E+01)†	7.32E+01(2.15E+02)†	6.20E+01(7.92E+02)†	5.13E+02(1.83E+04)†	1.18E+01(1.26E+02)†	1.08E-01(3.62E-01)
	25	3.44E+01(7.57E+01)†	1.86E-01(4.32E-03)†	5.58E+01(1.76E+02)†	1.88E+02(1.42E+03)†	7.45E+00(6.56E+01)†	9.38E-05(2.51E-09)
	50	8.92E+00(2.30E+01)†	1.53E-02(2.88E-05)†	1.01E+01(2.99E+01)†	1.12E+02(4.74E+02)†	8.27E-01(1.97E+00)†	1.10E-04(3.73E-09)
	200	4.30E-04(1.79E-07)†	5.25E-04(4.24E-09)†	4.57E-04(1.27E-07)†	1.16E+00(2.63E+00)†	8.22E-05(4.78E-09)	8.31E-05(1.68E-09)
F4	5	1.16E-01(1.87E-03)†	1.43E-01(5.15E-04)†	2.32E-01(1.38E-03)†	1.11E-01(2.38E-03)†	1.65E-02(1.87E-04)†	1.22E-02(5.17E-04)
	25	4.34E-03(7.50E-07)†	7.87E-03(5.63E-07)†	2.10E-03(1.65E-07)†	3.46E-03(2.85E-07)†	8.82E-04(1.31E-07)†	9.29E-05(1.22E-09)
	50	5.91E-04(5.65E-09)†	3.00E-03(6.81E-08)†	4.52E-04(3.84E-09)†	8.61E-04(5.55E-09)†	2.19E-04(6.79E-09)†	7.72E-05(2.51E-10)
	200	1.61E-04(2.67E-10)†	2.72E-04(3.39E-10)†	1.80E-04(1.01E-09)†	1.06E-04(2.49E-11)†	8.29E-05(8.04E-10)	8.51E-05(2.01E-09)
WFG1	5	1.04E-01(1.14E-04)†	6.32E-01(3.50E-04)†	1.26E-01(4.15E-04)†	1.24E+00(1.93E-05)†	9.46E-02(1.08E-04)†	7.61E-03(4.70E-06)
	25	6.51E-02(7.46E-05)†	2.87E-01(4.85E-04)†	8.36E-02(6.99E-05)†	1.23E+00(4.51E-07)†	7.73E-02(1.06E-04)†	7.48E-03(4.22E-06)
	50	3.11E-02(6.43E-06)†	1.76E-01(5.99E-04)†	3.70E-02(9.92E-06)†	1.23E+00(4.71E-08)†	3.21E-02(1.14E-05)†	7.65E-03(4.20E-06)
	200	7.97E-03(5.31E-07)†	5.58E-02(6.16E-05)†	8.15E-03(3.71E-07)†	1.23E+00(3.81E-09)†	5.21E-03(2.29E-07)‡	7.76E-03(4.58E-06)
WFG2	5	5.73E-02(9.54E-05)†	3.63E-01(9.73E-04)†	8.04E-02(9.33E-05)†	5.13E-01(4.55E-05)†	5.04E-02(1.48E-04)†	8.61E-04(1.41E-08)
	25	4.85E-03(8.55E-07)†	9.00E-02(2.03E-05)†	6.39E-03(1.54E-06)†	5.03E-01(1.10E-06)†	4.12E-03(7.44E-07)†	7.06E-04(8.85E-08)
	50	1.68E-03(4.45E-08)†	6.59E-02(2.45E-06)†	1.79E-03(5.35E-08)†	5.03E-01(2.30E-07)†	1.22E-03(3.71E-08)†	6.20E-04(8.08E-09)
	200	6.87E-04(1.27E-09)†	4.94E-02(3.27E-07)†	7.02E-04(1.13E-09)†	5.03E-01(5.53E-08)†	6.11E-04(2.93E-09)	6.25E-04(1.01E-08)
WFG3	5	8.03E-03(2.24E-05)†	4.30E-01(7.88E-04)†	4.24E-01(1.10E-03)†	6.28E-01(2.40E-05)†	1.03E-01(5.37E-03)†	3.12E-04(5.35E-09)
	25	1.33E-02(3.43E-05)†	5.65E-02(1.47E-05)†	1.78E-02(7.74E-06)†	6.12E-01(2.00E-07)†	3.91E-02(3.65E-04)†	1.53E-04(4.92E-10)
	50	5.45E-03(9.73E-07)†	2.79E-02(2.82E-06)†	5.68E-03(8.18E-07)†	6.11E-01(4.62E-08)†	1.39E-02(5.10E-05)†	1.23E-04(6.93E-11)
	200	7.52E-04(2.17E-08)†	7.63E-03(3.51E-07)†	7.72E-04(1.84E-08)†	6.10E-01(5.36E-10)†	9.04E-04(4.18E-07)†	1.15E-04(6.03E-11)
WFG4	5	5.71E-02(3.95E-05)†	2.82E-01(3.70E-04)†	1.33E-01(8.63E-05)†	6.90E-01(3.26E-04)†	4.04E-02(7.68E-05)†	2.32E-04(1.55E-09)
	25	4.20E-03(4.30E-06)†	9.28E-02(1.67E-05)†	1.80E-02(5.94E-06)†	6.23E-01(1.59E-04)†	1.45E-03(2.52E-07)†	1.39E-04(1.61E-10)
	50	1.96E-03(2.13E-06)†	6.79E-02(6.63E-06)†	6.19E-03(9.62E-07)†	5.68E-01(1.90E-04)†	2.44E-04(1.87E-09)†	1.24E-04(3.55E-11)
	200	6.92E-04(6.03E-08)†	4.11E-02(3.25E-06)†	1.10E-03(4.26E-08)†	5.45E-01(2.49E-07)†	1.21E-04(2.12E-11)	1.20E-04(1.93E-11)
WFG5	5	9.06E-02(1.10E-05)†	2.42E-01(2.54E-04)†	1.59E-01(1.39E-04)†	3.27E-02(1.05E-04)‡	8.38E-02(1.95E-05)†	6.11E-02(6.20E-08)
	25	6.28E-02(4.34E-06)†	7.50E-02(1.24E-05)†	6.81E-02(4.04E-06)†	7.27E-03(1.69E-07)‡	4.93E-02(1.62E-05)‡	6.14E-02(4.36E-09)
	50	5.97E-02(9.69E-06)	6.67E-02(1.78E-06)†	6.11E-02(9.51E-06)	6.87E-03(1.80E-08)‡	3.44E-02(2.64E-06)‡	6.13E-02(4.89E-10)
	200	5.65E-02(7.47E-06)‡	6.10E-02(8.45E-07)‡	5.78E-02(6.59E-06)‡	6.76E-03(3.02E-09)‡	2.73E-02(3.84E-10)‡	6.13E-02(4.80E-10)
WFG6	5	1.45E-01(1.34E-03)†	4.56E-01(9.85E-04)†	2.20E-01(1.43E-03)†	5.22E-01(1.06E-04)†	2.22E-01(8.56E-03)†	8.01E-02(6.53E-04)
	25	3.46E-02(1.25E-04)‡	7.24E-02(1.53E-05)	3.39E-02(4.10E-05)‡	4.76E-01(8.02E-04)†	8.05E-02(3.21E-03)	7.61E-02(8.83E-04)
	50	1.31E-02(1.00E-05)‡	3.88E-02(7.62E-06)‡	1.47E-02(1.20E-05)‡	4.56E-01(7.51E-04)†	6.61E-02(2.51E-03)‡	8.14E-02(2.03E-03)
	200	4.42E-03(3.86E-06)‡	1.20E-02(8.87E-07)‡	5.59E-03(2.91E-06)‡	4.47E-01(6.21E-04)†	1.54E-02(7.84E-04)‡	7.28E-02(5.02E-04)
WFG7	5	8.02E-02(1.21E-04)†	6.42E-01(9.59E-04)†	1.43E-01(2.12E-04)†	2.67E-01(1.39E-03)†	8.23E-02(1.00E-04)†	1.69E-04(9.87E-10)
	25	7.02E-03(6.76E-06)†	1.73E-01(6.68E-04)†	1.35E-02(3.48E-06)†	3.30E-02(1.18E-05)†	4.57E-03(5.56E-07)†	1.31E-04(1.62E-09)
	50	2.47E-03(4.16E-07)†	5.77E-02(1.84E-05)†	3.60E-03(3.96E-07)†	1.10E-02(1.11E-06)†	8.20E-04(2.94E-08)†	1.25E-04(4.42E-11)
	200	2.10E-04(8.67E-10)†	1.19E-02(6.24E-07)†	2.02E-04(5.97E-10)†	1.27E-03(1.41E-08)†	1.23E-04(2.23E-11)	1.22E-04(1.85E-11)
WFG8	5	8.34E-02(1.28E-04)†	6.47E-01(6.37E-04)†	1.44E-01(2.12E-04)†	2.56E-01(8.27E-04)†	7.84E-02(1.71E-04)†	1.79E-04(1.53E-09)
	25	6.91E-03(5.70E-06)†	1.68E-01(7.49E-04)†	1.39E-02(2.68E-06)†	3.18E-02(1.08E-05)†	4.69E-03(5.67E-07)†	1.30E-04(1.17E-09)
	50	2.59E-03(4.05E-07)†	5.51E-02(2.13E-05)†	3.66E-03(4.18E-07)†	1.07E-02(8.93E-07)†	8.50E-04(3.99E-08)†	1.22E-04(2.13E-11)
	200	2.08E-04(1.47E-09)†	1.23E-02(7.09E-07)†	2.15E-04(1.31E-09)†	1.31E-03(1.05E-08)†	1.21E-04(2.07E-11)	1.20E-04(1.35E-11)
WFG9	5	5.07E-01(1.14E-03)†	5.47E-01(1.46E-04)†	5.65E-01(4.54E-05)†	4.73E-01(1.46E-02)‡	5.41E-01(2.18E-03)†	4.81E-01(5.79E-04)
	25	4.69E-01(2.34E-04)†	4.68E-01(6.75E-06)†	1.56E-01(4.64E-02)‡	5.07E-02(1.11E-02)‡	4.51E-01(1.67E-03)	4.45E-01(5.09E-02)
	50	4.11E-01(8.60E-03)	4.42E-01(5.79E-03)	1.28E-02(1.58E-06)‡	5.62E-02(1.02E-02)‡	4.32E-01(5.90E-04)‡	4.48E-01(4.94E-02)
	200	2.72E-01(2.94E-02)‡	3.25E-01(3.40E-02)‡	1.81E-02(5.72E-03)‡	3.67E-02(5.60E-03)‡	3.97E-01(8.76E-04)‡	4.47E-01(3.51E-04)
+-=		28/22/2	33/15/4	27/20/5	40/8/4	28/8/16	—

TABLE 98
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 2 TO 3 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	7.41E-01(2.87E-04)†	7.72E-01(1.95E-03)†	7.49E-01(2.81E-03)†	9.78E-01(6.79E-04)†	7.41E-01(4.55E-04)†	1.00E+00(2.94E-10)
	25	8.56E-01(1.75E-03)†	9.98E-01(1.55E-05)†	8.73E-01(1.42E-03)†	9.99E-01(3.49E-06)†	9.88E-01(1.66E-04)†	1.00E+00(1.40E-07)
	50	9.73E-01(5.63E-04)†	1.00E+00(7.26E-12)‡	9.70E-01(5.88E-04)†	1.00E+00(6.40E-10)	9.99E-01(1.51E-06)†	1.00E+00(3.52E-10)
	200	1.00E+00(7.09E-08)†	1.00E+00(0.00E+00)‡	1.00E+00(2.46E-08)†	1.00E+00(0.00E+00)‡	1.00E+00(5.17E-09)†	1.00E+00(1.01E-09)
F2	5	9.01E-01(4.36E-04)†	9.94E-01(9.23E-05)†	9.99E-01(1.25E-06)†	9.97E-01(1.22E-04)†	1.00E+00(2.51E-09)†	1.00E+00(1.62E-09)
	25	9.98E-01(6.88E-06)†	1.00E+00(0.00E+00)‡	1.00E+00(1.16E-09)†	1.00E+00(2.38E-12)‡	1.00E+00(4.55E-11)†	1.00E+00(1.99E-11)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(1.15E-11)	1.00E+00(5.16E-13)‡	1.00E+00(1.81E-12)	1.00E+00(5.08E-12)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(1.57E-13)	1.00E+00(4.28E-13)
F3	5	8.72E-01(4.36E-04)†	9.09E-01(9.90E-04)†	8.76E-01(1.49E-03)†	9.73E-01(1.31E-03)†	8.89E-01(1.51E-03)†	1.00E+00(5.01E-11)
	25	9.62E-01(2.98E-04)‡	1.00E+00(0.00E+00)†	9.57E-01(3.88E-04)†	9.99E-01(6.53E-07)†	9.99E-01(8.90E-06)†	1.00E+00(5.17E-11)
	50	9.94E-01(3.57E-05)†	1.00E+00(0.00E+00)	9.93E-01(3.91E-05)†	1.00E+00(8.31E-09)†	1.00E+00(5.27E-11)†	1.00E+00(3.31E-12)
	200	1.00E+00(1.93E-09)†	1.00E+00(0.00E+00)	1.00E+00(3.37E-10)†	1.00E+00(0.00E+00)	1.00E+00(1.16E-13)†	1.00E+00(0.00E+00)
F4	5	8.16E-01(4.59E-31)‡	8.16E-01(4.59E-31)‡	9.14E-01(8.26E-03)	8.16E-01(1.94E-09)	9.89E-01(5.33E-04)‡	8.16E-01(1.36E-10)
	25	8.38E-01(2.61E-03)‡	8.36E-01(3.11E-03)‡	9.48E-01(6.84E-03)‡	8.28E-01(2.10E-03)	1.00E+00(7.03E-12)‡	8.16E-01(1.69E-10)
	50	9.94E-01(1.09E-03)‡	9.18E-01(8.46E-03)‡	1.00E+00(2.02E-11)‡	8.76E-01(7.03E-03)‡	1.00E+00(7.03E-13)‡	8.16E-01(1.46E-11)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.86E-01(2.17E-03)‡	1.00E+00(6.24E-14)‡	8.16E-01(1.22E-11)
WFG1	5	7.24E-01(1.56E-04)†	8.18E-01(8.05E-03)†	7.49E-01(1.29E-03)†	4.96E-01(5.98E-05)†	7.77E-01(1.37E-03)†	9.96E-01(1.91E-05)
	25	8.33E-01(9.68E-04)†	8.29E-01(3.62E-03)†	8.58E-01(7.94E-04)†	6.59E-01(1.81E-06)†	8.57E-01(1.29E-03)†	9.95E-01(7.33E-06)
	50	9.10E-01(4.91E-04)†	7.72E-01(2.20E-03)†	9.20E-01(3.67E-04)†	6.59E-01(9.74E-08)†	9.26E-01(5.22E-04)†	9.96E-01(8.27E-06)
	200	9.86E-01(2.11E-05)†	7.03E-01(2.10E-04)†	9.86E-01(3.36E-05)†	6.59E-01(1.04E-06)†	9.92E-01(1.79E-05)†	9.95E-01(1.12E-05)
WFG2	5	7.32E-01(1.01E-03)†	7.16E-01(3.63E-03)†	8.73E-01(2.00E-03)†	1.92E-01(2.79E-06)†	9.44E-01(1.25E-03)†	9.97E-01(1.02E-06)
	25	9.44E-01(9.91E-04)†	7.47E-01(6.06E-04)†	9.81E-01(1.75E-04)†	2.07E-01(7.93E-06)†	9.83E-01(6.65E-05)†	9.92E-01(6.73E-06)
	50	9.93E-01(1.62E-05)‡	7.37E-01(2.18E-04)†	9.95E-01(7.38E-06)‡	2.08E-01(1.98E-06)†	9.91E-01(7.76E-06)	9.90E-01(3.02E-06)
	200	9.99E-01(3.73E-07)‡	7.43E-01(4.11E-05)†	9.99E-01(1.07E-06)‡	2.08E-01(1.88E-07)†	9.88E-01(1.29E-06)	9.88E-01(1.70E-06)
WFG3	5	1.00E+00(4.10E-10)‡	1.00E+00(6.51E-08)†	9.95E-01(1.26E-05)†	5.00E-01(1.13E-04)†	1.00E+00(5.33E-07)†	1.00E+00(6.49E-10)
	25	1.00E+00(1.29E-10)‡	9.99E-01(6.47E-07)†	9.99E-01(6.81E-07)†	5.13E-01(4.02E-07)†	1.00E+00(1.37E-09)‡	1.00E+00(4.36E-07)
	50	1.00E+00(2.05E-10)‡	9.98E-01(3.38E-07)†	1.00E+00(7.43E-08)†	5.13E-01(5.29E-07)†	1.00E+00(9.18E-10)	1.00E+00(8.46E-10)
	200	1.00E+00(2.59E-11)‡	9.98E-01(4.48E-08)†	1.00E+00(5.52E-09)‡	5.13E-01(3.93E-07)†	9.35E-01(6.24E-02)	1.00E+00(1.10E-09)
WFG4	5	8.81E-01(1.44E-03)†	9.94E-01(3.02E-06)†	9.97E-01(1.33E-05)†	8.01E-01(7.39E-04)†	9.99E-01(3.49E-06)†	1.00E+00(1.01E-10)
	25	1.00E+00(9.03E-14)‡	9.94E-01(5.88E-07)†	9.99E-01(9.25E-08)†	8.49E-01(1.05E-06)†	1.00E+00(3.20E-09)†	1.00E+00(6.75E-11)
	50	1.00E+00(6.36E-12)‡	9.95E-01(8.13E-07)†	1.00E+00(3.81E-08)†	8.51E-01(7.08E-07)†	1.00E+00(1.57E-10)†	1.00E+00(2.38E-11)
	200	1.00E+00(1.12E-12)‡	9.95E-01(8.96E-07)†	1.00E+00(4.60E-09)†	8.53E-01(2.43E-08)†	1.00E+00(7.75E-12)†	1.00E+00(2.42E-11)
WFG5	5	8.61E-01(4.16E-04)†	9.78E-01(3.08E-05)†	9.83E-01(7.99E-07)†	8.58E-01(1.24E-03)†	9.81E-01(7.76E-06)†	9.84E-01(3.65E-07)
	25	9.84E-01(3.66E-06)‡	9.83E-01(1.26E-06)†	9.84E-01(6.28E-08)‡	9.58E-01(1.41E-05)†	9.84E-01(1.84E-07)	9.84E-01(7.59E-07)
	50	9.85E-01(8.01E-11)‡	9.84E-01(9.97E-07)†	9.84E-01(2.81E-08)	9.59E-01(2.53E-05)†	9.84E-01(3.54E-07)†	9.84E-01(3.48E-07)
	200	9.85E-01(7.17E-12)†	9.84E-01(1.06E-06)†	9.85E-01(1.04E-07)†	9.66E-01(2.36E-05)†	9.85E-01(1.27E-11)	9.85E-01(2.01E-12)
WFG6	5	8.97E-01(5.40E-04)†	9.96E-01(3.19E-05)‡	9.79E-01(4.19E-05)	4.29E-01(6.21E-07)†	9.79E-01(4.18E-05)	9.78E-01(1.23E-04)
	25	9.80E-01(3.73E-05)	9.98E-01(5.04E-07)‡	9.84E-01(5.09E-05)‡	4.47E-01(1.33E-04)†	9.73E-01(4.11E-04)	9.78E-01(4.53E-05)
	50	9.83E-01(3.97E-05)‡	9.98E-01(1.13E-07)‡	9.83E-01(4.13E-05)‡	4.54E-01(1.94E-07)†	9.70E-01(4.32E-04)	9.79E-01(3.19E-05)
	200	9.84E-01(4.93E-05)‡	9.99E-01(1.64E-08)‡	9.83E-01(5.09E-05)	4.55E-01(4.71E-07)†	9.73E-01(3.59E-04)	9.80E-01(3.80E-05)
WFG7	5	9.94E-01(4.84E-05)†	9.98E-01(4.04E-06)†	9.98E-01(9.50E-06)†	9.93E-01(7.12E-06)†	9.99E-01(9.44E-06)†	1.00E+00(9.23E-13)
	25	1.00E+00(1.14E-08)	9.98E-01(1.21E-06)†	1.00E+00(6.77E-09)†	9.95E-01(1.58E-06)†	1.00E+00(3.80E-11)†	1.00E+00(5.46E-12)
	50	1.00E+00(5.79E-11)	9.98E-01(2.91E-07)†	1.00E+00(3.41E-09)†	9.97E-01(5.12E-07)†	1.00E+00(2.99E-11)†	1.00E+00(8.07E-12)
	200	1.00E+00(0.00E+00)	9.99E-01(3.95E-08)†	1.00E+00(1.35E-11)†	9.99E-01(1.99E-08)†	1.00E+00(2.97E-12)†	1.00E+00(9.31E-13)
WFG8	5	9.94E-01(5.29E-05)†	9.98E-01(3.14E-06)†	9.97E-01(1.69E-05)†	9.92E-01(3.08E-05)†	9.99E-01(1.42E-05)†	1.00E+00(5.81E-12)
	25	1.00E+00(1.09E-09)†	9.98E-01(1.20E-06)†	1.00E+00(7.87E-09)†	9.94E-01(1.25E-06)†	1.00E+00(8.50E-11)†	1.00E+00(5.78E-13)
	50	1.00E+00(7.55E-10)	9.98E-01(5.05E-07)†	1.00E+00(6.70E-10)†	9.96E-01(3.46E-07)†	1.00E+00(3.00E-11)†	1.00E+00(8.45E-13)
	200	1.00E+00(3.23E-14)	9.99E-01(3.80E-08)†	1.00E+00(1.88E-11)†	9.99E-01(2.60E-08)†	1.00E+00(8.37E-12)†	1.00E+00(6.24E-14)
WFG9	5	7.70E-01(4.67E-03)†	8.75E-01(1.64E-06)	8.77E-01(1.63E-05)	9.46E-01(2.71E-03)‡	8.79E-01(2.25E-05)	8.81E-01(1.97E-04)
	25	8.51E-01(3.75E-03)	8.75E-01(1.71E-06)	8.80E-01(2.06E-05)	9.56E-01(2.63E-03)‡	8.78E-01(1.64E-05)	8.80E-01(3.27E-05)
	50	8.50E-01(3.84E-03)	8.75E-01(1.25E-06)‡	8.79E-01(2.35E-05)†	9.40E-01(2.76E-03)‡	8.78E-01(1.48E-05)	8.84E-01(1.88E-04)
	200	8.67E-01(1.75E-03)	8.75E-01(3.83E-07)†	8.80E-01(2.47E-05)	9.49E-01(2.66E-03)‡	8.77E-01(1.18E-05)	8.80E-01(3.52E-05)

TABLE 99
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 3 TO 4 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	6.52E-01(1.72E-03)†	7.09E-01(2.34E-03)†	6.44E-01(8.98E-03)†	9.89E-01(6.26E-04)†	7.19E-01(1.06E-02)†	1.00E+00(2.39E-10)
	25	8.61E-01(3.51E-03)†	9.95E-01(9.82E-05)	8.49E-01(2.46E-03)†	9.39E-01(3.95E-03)†	9.82E-01(3.78E-04)†	9.99E-01(1.52E-05)
	50	9.68E-01(1.21E-03)†	1.00E+00(2.92E-06)†	9.75E-01(7.61E-04)†	9.82E-01(1.15E-03)†	9.98E-01(2.02E-06)†	1.00E+00(2.86E-10)
	200	1.00E+00(2.02E-09)‡	1.00E+00(0.00E+00)‡	1.00E+00(3.37E-07)†	1.00E+00(1.03E-06)†	1.00E+00(3.15E-08)†	1.00E+00(3.34E-09)
F2	5	8.47E-01(5.62E-04)†	1.00E+00(3.92E-08)‡	9.99E-01(7.59E-06)†	9.96E-01(2.61E-04)	1.00E+00(1.28E-10)	1.00E+00(6.17E-07)
	25	9.94E-01(1.01E-04)†	1.00E+00(0.00E+00)‡	1.00E+00(2.14E-11)†	8.28E-01(1.27E-02)†	1.00E+00(8.52E-13)	1.00E+00(3.81E-13)
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(5.16E-13)	2.76E-01(8.59E-02)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	8.66E-06(8.51E-17)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
F3	5	7.97E-01(3.54E-04)†	8.91E-01(1.50E-03)†	7.87E-01(2.76E-03)†	9.90E-01(7.04E-04)†	8.49E-01(4.68E-03)†	1.00E+00(2.38E-11)
	25	9.46E-01(3.58E-04)†	1.00E+00(0.00E+00)‡	9.48E-01(6.45E-04)†	8.91E-01(2.66E-03)†	9.99E-01(9.70E-06)†	1.00E+00(1.81E-10)
	50	9.89E-01(1.37E-04)†	1.00E+00(0.00E+00)	9.92E-01(9.08E-05)†	8.97E-01(4.13E-03)†	1.00E+00(7.50E-10)†	1.00E+00(2.61E-12)
	200	1.00E+00(1.35E-08)	1.00E+00(0.00E+00)	1.00E+00(5.45E-12)	6.76E-01(6.74E-02)†	1.00E+00(2.95E-13)†	1.00E+00(0.00E+00)
F4	5	7.07E-01(1.11E-07)†	7.22E-01(1.66E-03)‡	9.13E-01(5.30E-03)‡	8.01E-01(1.05E-02)‡	9.93E-01(6.81E-04)‡	7.43E-01(4.53E-03)
	25	9.30E-01(3.60E-03)‡	8.91E-01(1.05E-02)‡	9.77E-01(2.29E-03)‡	9.83E-01(2.08E-03)‡	1.00E+00(1.65E-12)‡	7.74E-01(6.35E-03)
	50	1.00E+00(0.00E+00)‡	9.87E-01(1.58E-03)‡	1.00E+00(0.00E+00)‡	9.96E-01(5.79E-04)‡	1.00E+00(3.23E-14)‡	7.79E-01(6.46E-03)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	7.84E-01(6.52E-03)
WFG1	5	5.90E-01(7.21E-04)†	6.17E-01(3.23E-03)†	6.00E-01(1.31E-03)†	5.08E-01(1.14E-03)†	6.60E-01(1.24E-03)†	9.91E-01(3.11E-04)
	25	7.82E-01(6.90E-04)†	6.25E-01(1.35E-03)†	7.96E-01(1.16E-03)†	5.44E-01(8.11E-04)†	7.90E-01(1.30E-03)†	9.90E-01(5.17E-05)
	50	8.76E-01(3.47E-04)†	5.82E-01(1.44E-03)†	8.74E-01(6.15E-04)†	5.60E-01(3.39E-04)†	8.92E-01(6.85E-04)†	9.88E-01(2.85E-05)
	200	9.74E-01(4.12E-05)†	5.58E-01(2.59E-04)†	9.78E-01(5.19E-05)†	5.59E-01(8.14E-05)†	9.83E-01(2.53E-05)†	9.90E-01(3.25E-05)
WFG2	5	6.74E-01(8.30E-04)†	6.65E-01(3.21E-03)†	7.66E-01(3.30E-03)†	1.83E-01(1.60E-05)†	8.63E-01(1.70E-03)†	9.97E-01(2.52E-06)
	25	9.19E-01(9.27E-04)†	5.85E-01(5.26E-04)†	9.61E-01(2.93E-04)†	1.93E-01(3.84E-06)†	9.67E-01(1.27E-04)†	9.89E-01(1.29E-05)
	50	9.84E-01(4.55E-05)	5.81E-01(3.43E-04)†	9.84E-01(3.29E-05)	1.92E-01(4.43E-07)†	9.86E-01(1.11E-05)‡	9.83E-01(3.90E-06)
	200	9.96E-01(2.54E-06)‡	5.89E-01(1.01E-04)†	9.96E-01(2.49E-06)‡	1.91E-01(2.57E-08)†	9.79E-01(1.63E-06)‡	9.79E-01(1.37E-06)
WFG3	5	1.00E+00(5.02E-10)‡	9.99E-01(8.41E-08)†	9.94E-01(1.38E-05)†	4.99E-01(1.44E-04)†	1.00E+00(1.36E-07)†	1.00E+00(1.50E-07)
	25	1.00E+00(2.09E-10)‡	9.99E-01(1.92E-07)†	9.98E-01(2.22E-06)†	5.00E-01(2.72E-06)†	1.00E+00(2.16E-09)	1.00E+00(6.59E-07)
	50	1.00E+00(2.28E-10)‡	9.99E-01(2.53E-07)†	9.99E-01(3.49E-07)†	4.98E-01(3.87E-06)†	1.00E+00(1.13E-09)†	1.00E+00(1.88E-09)
	200	1.00E+00(1.14E-11)‡	9.99E-01(1.86E-08)†	1.00E+00(7.12E-09)†	4.96E-01(2.37E-08)†	9.35E-01(6.24E-02)†	1.00E+00(1.66E-09)
WFG4	5	8.50E-01(1.44E-03)†	9.94E-01(9.69E-07)†	9.93E-01(3.28E-05)†	8.56E-01(1.62E-04)†	9.98E-01(2.55E-05)†	1.00E+00(5.38E-11)
	25	1.00E+00(9.03E-14)‡	9.95E-01(5.15E-07)†	9.99E-01(3.32E-07)†	8.63E-01(7.05E-07)†	1.00E+00(1.37E-10)†	1.00E+00(3.63E-11)
	50	1.00E+00(3.18E-12)‡	9.96E-01(5.23E-07)†	9.99E-01(2.29E-07)†	8.65E-01(5.52E-07)†	1.00E+00(2.74E-11)†	1.00E+00(1.03E-11)
	200	1.00E+00(5.46E-13)	9.96E-01(8.09E-07)†	1.00E+00(2.37E-08)†	8.66E-01(4.37E-09)†	1.00E+00(1.61E-13)	1.00E+00(4.37E-13)
WFG5	5	8.15E-01(7.23E-04)†	9.81E-01(1.62E-05)†	9.85E-01(3.56E-07)†	8.92E-01(2.10E-04)†	9.85E-01(8.55E-07)†	9.87E-01(6.02E-08)
	25	9.84E-01(2.64E-05)	9.86E-01(5.71E-07)†	9.86E-01(7.96E-08)†	8.97E-01(3.06E-05)†	9.87E-01(2.65E-09)†	9.87E-01(7.74E-10)
	50	9.87E-01(1.04E-11)†	9.86E-01(3.70E-07)†	9.86E-01(3.97E-08)†	8.97E-01(2.29E-05)†	9.87E-01(2.94E-11)†	9.87E-01(6.16E-12)
	200	9.87E-01(1.07E-12)†	9.87E-01(1.50E-08)†	9.87E-01(4.34E-09)†	9.00E-01(4.08E-07)†	9.87E-01(4.59E-31)	9.87E-01(4.59E-31)
WFG6	5	8.30E-01(5.29E-04)†	9.96E-01(9.82E-07)‡	9.77E-01(7.18E-05)	3.76E-01(1.92E-05)†	9.80E-01(3.41E-05)	9.69E-01(4.66E-04)
	25	9.78E-01(6.52E-05)	9.98E-01(1.33E-07)‡	9.84E-01(4.57E-05)‡	3.97E-01(2.56E-06)†	9.78E-01(2.49E-04)	9.81E-01(4.05E-05)
	50	9.84E-01(3.57E-05)‡	9.99E-01(6.95E-08)‡	9.84E-01(3.74E-05)‡	3.97E-01(4.88E-07)†	9.73E-01(3.84E-04)†	9.80E-01(2.87E-05)
	200	9.86E-01(4.29E-05)‡	9.99E-01(8.61E-09)‡	9.85E-01(4.53E-05)‡	3.97E-01(2.54E-07)†	9.74E-01(3.21E-04)†	9.81E-01(3.42E-05)
WFG7	5	9.91E-01(1.16E-04)†	9.93E-01(4.03E-06)†	9.98E-01(1.61E-05)†	9.94E-01(1.62E-06)†	1.00E+00(7.95E-07)†	1.00E+00(4.13E-13)
	25	1.00E+00(6.56E-08)†	9.98E-01(2.20E-07)†	1.00E+00(1.53E-08)†	9.97E-01(4.40E-07)†	1.00E+00(3.05E-11)†	1.00E+00(4.52E-10)
	50	1.00E+00(0.00E+00)‡	9.98E-01(9.72E-08)†	1.00E+00(7.07E-09)†	9.99E-01(6.03E-08)†	1.00E+00(7.79E-12)†	1.00E+00(2.72E-12)
	200	1.00E+00(0.00E+00)	9.99E-01(1.46E-08)†	1.00E+00(5.63E-10)†	1.00E+00(2.45E-10)†	1.00E+00(1.40E-13)†	1.00E+00(0.00E+00)
WFG8	5	9.92E-01(9.96E-05)†	9.93E-01(4.33E-06)†	9.98E-01(1.75E-05)†	9.94E-01(2.39E-06)†	1.00E+00(1.11E-06)†	1.00E+00(4.92E-12)
	25	1.00E+00(9.05E-10)	9.97E-01(3.53E-07)†	1.00E+00(6.68E-09)†	9.96E-01(4.30E-07)†	1.00E+00(3.41E-11)‡	1.00E+00(1.30E-08)
	50	1.00E+00(0.00E+00)	9.99E-01(1.19E-07)†	1.00E+00(4.65E-09)†	9.99E-01(8.94E-08)†	1.00E+00(9.78E-12)†	1.00E+00(1.57E-13)
	200	1.00E+00(3.23E-14)	9.99E-01(1.03E-08)†	1.00E+00(6.52E-10)†	1.00E+00(1.84E-10)†	1.00E+00(1.16E-13)†	1.00E+00(0.00E+00)
WFG9	5	7.16E-01(9.75E-03)†	8.77E-01(3.56E-04)‡	8.84E-01(1.59E-05)‡	9.53E-01(3.79E-03)‡	8.86E-01(1.92E-05)‡	8.42E-01(3.24E-03)
	25	8.18E-01(7.44E-03)	8.82E-01(1.33E-06)	8.87E-01(1.68E-05)	9.64E-01(2.26E-03)‡	8.85E-01(1.65E-05)	8.57E-01(2.44E-03)
	50	8.45E-01(4.66E-03)	8.82E-01(1.69E-07)	8.86E-01(1.65E-05)‡	9.65E-01(1.83E-03)‡	8.86E-01(1.83E-05)‡	8.43E-01(3.15E-03)
	200	8.74E-01(1.69E-03)	8.84E-01(5.59E-06)	8.89E-01(9.45E-06)	9.73E-01(1.51E-03)‡	8.85E-01(1.51E-05)	8.65E-01(2.40E-03)

TABLE 100
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 4 TO 5 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	5.93E-01(4.90E-04)†	6.74E-01(1.76E-03)†	5.97E-01(9.32E-03)†	9.81E-01(2.36E-03)†	7.06E-01(1.41E-02)†	1.00E+00(1.22E-10)
	25	8.76E-01(3.09E-03)†	9.70E-01(3.33E-04)†	8.92E-01(3.53E-03)†	9.86E-01(1.01E-03)	9.74E-01(6.12E-04)†	9.96E-01(4.49E-05)
	50	9.89E-01(4.35E-04)	9.96E-01(4.34E-05)	9.90E-01(4.64E-04)	9.88E-01(5.18E-04)†	9.95E-01(2.15E-05)†	1.00E+00(1.78E-10)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(9.83E-07)†	9.99E-01(1.07E-06)†	1.00E+00(4.01E-09)
F2	5	8.23E-01(5.50E-04)†	1.00E+00(5.71E-06)‡	9.98E-01(5.59E-05)†	9.70E-01(2.86E-03)†	1.00E+00(2.68E-07)	9.98E-01(6.29E-05)
	25	9.97E-01(2.12E-05)†	1.00E+00(0.00E+00)‡	1.00E+00(6.24E-14)	8.72E-01(1.04E-03)†	1.00E+00(6.26E-13)	1.00E+00(7.79E-07)
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	7.12E-01(1.85E-02)†	1.00E+00(3.23E-14)	1.00E+00(0.00E+00)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	7.71E-02(1.66E-03)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
F3	5	7.55E-01(5.34E-04)†	9.03E-01(1.22E-03)†	7.36E-01(2.85E-03)†	9.75E-01(2.76E-03)†	8.39E-01(5.33E-03)†	1.00E+00(1.92E-10)
	25	9.57E-01(7.71E-04)†	1.00E+00(0.00E+00)‡	9.51E-01(7.06E-04)†	8.45E-01(4.96E-03)†	9.98E-01(1.58E-05)	9.98E-01(4.65E-05)
	50	1.00E+00(2.26E-06)	1.00E+00(0.00E+00)‡	9.96E-01(8.88E-05)	8.31E-01(6.68E-03)†	1.00E+00(1.03E-06)†	1.00E+00(6.71E-11)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	8.06E-01(5.87E-03)†	1.00E+00(2.68E-11)†	1.00E+00(6.24E-14)
F4	5	6.44E-01(1.35E-03)	6.75E-01(4.15E-03)	9.05E-01(6.41E-03)‡	9.08E-01(8.59E-03)‡	9.98E-01(4.50E-05)‡	7.10E-01(5.17E-03)
	25	9.95E-01(2.66E-04)‡	9.42E-01(7.19E-03)‡	1.00E+00(3.16E-13)‡	1.00E+00(0.00E+00)‡	1.00E+00(3.23E-14)‡	7.47E-01(3.26E-03)
	50	1.00E+00(0.00E+00)‡	9.96E-01(3.61E-04)‡	1.00E+00(0.00E+00)‡	9.97E-01(3.60E-04)‡	1.00E+00(0.00E+00)‡	7.28E-01(5.65E-03)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	7.33E-01(5.39E-03)
WFG1	5	5.23E-01(1.13E-03)†	4.70E-01(9.49E-04)†	5.07E-01(5.29E-04)†	4.34E-01(2.06E-03)†	5.83E-01(1.30E-03)†	9.27E-01(4.40E-04)
	25	7.54E-01(6.05E-04)†	4.86E-01(8.51E-04)†	7.53E-01(7.27E-04)†	4.78E-01(5.92E-04)†	7.36E-01(4.74E-04)†	9.48E-01(1.86E-04)
	50	8.52E-01(4.09E-04)†	4.61E-01(1.36E-03)†	8.49E-01(5.74E-04)†	4.92E-01(2.42E-04)†	8.60E-01(3.17E-04)†	9.69E-01(8.42E-05)
	200	9.67E-01(8.41E-05)†	4.45E-01(1.67E-04)†	9.70E-01(5.64E-05)†	4.94E-01(9.14E-05)†	9.68E-01(8.57E-05)†	9.75E-01(9.71E-05)
WFG2	5	6.36E-01(5.81E-04)†	5.71E-01(1.98E-03)†	6.86E-01(1.25E-03)†	1.66E-01(1.23E-05)†	7.95E-01(1.24E-03)†	9.97E-01(1.16E-05)
	25	8.99E-01(6.88E-04)†	4.62E-01(3.61E-04)†	9.47E-01(2.79E-04)†	1.74E-01(2.53E-06)†	9.50E-01(1.26E-04)†	9.83E-01(2.65E-05)
	50	9.68E-01(1.73E-04)‡	4.66E-01(2.31E-04)†	9.77E-01(5.48E-05)	1.73E-01(8.14E-08)†	9.81E-01(7.59E-06)‡	9.45E-01(3.08E-02)
	200	9.95E-01(2.91E-06)‡	4.74E-01(1.30E-04)†	9.94E-01(3.90E-06)‡	1.73E-01(2.78E-07)†	9.71E-01(1.77E-06)	9.70E-01(2.19E-06)
WFG3	5	1.00E+00(3.71E-09)‡	9.98E-01(1.89E-06)‡	9.91E-01(4.64E-05)†	4.75E-01(1.68E-05)†	1.00E+00(1.47E-07)‡	9.93E-01(3.67E-04)
	25	1.00E+00(1.05E-09)‡	9.98E-01(6.65E-07)†	9.97E-01(6.28E-06)†	4.76E-01(3.18E-05)†	9.99E-01(2.16E-07)	9.99E-01(2.18E-06)
	50	1.00E+00(6.93E-10)‡	9.98E-01(3.33E-07)†	9.98E-01(1.42E-06)†	4.75E-01(2.11E-05)†	9.99E-01(1.07E-07)†	9.99E-01(1.22E-06)
	200	1.00E+00(4.46E-11)‡	9.98E-01(1.74E-07)†	9.99E-01(3.01E-07)‡	4.86E-01(7.09E-06)†	9.34E-01(6.22E-02)†	9.99E-01(1.72E-07)
WFG4	5	8.43E-01(1.45E-03)†	9.93E-01(1.09E-04)†	9.89E-01(7.37E-05)†	8.67E-01(1.26E-04)†	9.87E-01(2.00E-04)†	1.00E+00(2.05E-06)
	25	1.00E+00(7.64E-10)‡	9.93E-01(7.32E-05)†	9.98E-01(1.35E-06)†	8.74E-01(1.06E-06)†	1.00E+00(8.09E-11)†	1.00E+00(8.66E-11)
	50	1.00E+00(8.65E-13)‡	9.96E-01(2.36E-05)†	9.98E-01(3.24E-07)†	8.74E-01(4.97E-07)†	1.00E+00(5.86E-12)†	1.00E+00(5.23E-12)
	200	1.00E+00(1.16E-13)‡	9.97E-01(7.11E-07)†	9.99E-01(8.79E-08)†	8.74E-01(1.65E-07)†	1.00E+00(6.24E-14)	1.00E+00(2.95E-13)
WFG5	5	7.88E-01(5.96E-04)†	9.85E-01(1.13E-05)†	9.86E-01(7.45E-07)†	8.14E-01(9.46E-05)†	9.88E-01(3.91E-07)†	9.88E-01(7.39E-07)
	25	9.86E-01(1.86E-05)‡	9.87E-01(4.40E-07)†	9.87E-01(1.66E-07)†	8.17E-01(2.61E-05)†	9.88E-01(4.53E-07)	9.88E-01(3.98E-07)
	50	9.89E-01(3.94E-12)	9.88E-01(2.65E-07)†	9.88E-01(1.02E-07)†	8.16E-01(4.56E-05)†	9.88E-01(1.49E-07)†	9.89E-01(1.82E-07)
	200	9.89E-01(2.58E-13)†	9.88E-01(2.23E-08)†	9.88E-01(3.75E-09)†	8.19E-01(1.76E-06)†	9.89E-01(6.24E-14)	9.89E-01(2.04E-31)
WFG6	5	8.08E-01(6.02E-04)†	9.93E-01(7.47E-05)‡	9.78E-01(5.58E-05)	3.43E-01(4.08E-05)†	9.79E-01(4.21E-05)	9.74E-01(1.88E-04)
	25	9.81E-01(5.52E-05)	9.82E-01(3.60E-04)	9.84E-01(4.33E-05)	3.56E-01(3.68E-07)†	9.79E-01(2.35E-04)†	9.81E-01(4.37E-05)
	50	9.85E-01(3.46E-05)‡	9.93E-01(1.35E-04)‡	9.85E-01(3.88E-05)‡	3.56E-01(1.76E-07)†	9.74E-01(3.55E-04)†	9.80E-01(2.79E-05)
	200	9.94E-01(9.34E-06)‡	1.00E+00(4.80E-09)‡	9.95E-01(1.53E-05)‡	3.57E-01(1.04E-06)†	9.75E-01(3.11E-04)†	9.81E-01(3.33E-05)
WFG7	5	9.96E-01(3.42E-05)†	9.89E-01(1.22E-04)†	9.98E-01(2.44E-05)†	9.95E-01(1.66E-06)†	9.98E-01(2.75E-05)†	1.00E+00(3.85E-11)
	25	1.00E+00(9.78E-09)†	9.84E-01(3.55E-04)†	1.00E+00(1.93E-08)†	9.98E-01(1.63E-07)†	1.00E+00(1.72E-11)†	1.00E+00(3.40E-10)
	50	1.00E+00(0.00E+00)	9.98E-01(6.28E-05)†	1.00E+00(1.25E-08)†	1.00E+00(1.19E-08)†	1.00E+00(4.23E-12)†	1.00E+00(1.20E-12)
	200	1.00E+00(0.00E+00)	1.00E+00(7.72E-10)†	1.00E+00(2.42E-09)†	1.00E+00(1.46E-10)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
WFG8	5	9.96E-01(3.90E-05)†	9.86E-01(4.19E-04)†	9.99E-01(7.89E-06)†	9.95E-01(2.59E-06)†	9.99E-01(5.47E-06)†	1.00E+00(5.87E-07)
	25	1.00E+00(6.24E-14)‡	9.92E-01(2.36E-04)†	1.00E+00(8.67E-08)†	9.98E-01(2.56E-07)†	1.00E+00(1.89E-11)‡	1.00E+00(9.70E-10)
	50	1.00E+00(2.53E-09)	9.98E-01(4.36E-05)†	1.00E+00(4.32E-08)†	1.00E+00(9.78E-09)†	1.00E+00(5.00E-12)†	1.00E+00(1.16E-13)
	200	1.00E+00(0.00E+00)	1.00E+00(2.22E-09)†	1.00E+00(4.67E-09)†	1.00E+00(1.42E-10)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
WFG9	5	6.81E-01(1.57E-02)†	8.35E-01(2.49E-03)	8.87E-01(1.11E-05)‡	9.62E-01(2.15E-03)‡	8.88E-01(1.57E-05)‡	8.29E-01(4.78E-03)
	25	7.96E-01(9.20E-03)	8.77E-01(6.73E-04)‡	8.90E-01(6.08E-06)‡	9.77E-01(1.28E-03)‡	8.87E-01(1.54E-05)‡	8.25E-01(6.90E-03)
	50	8.22E-01(6.83E-03)‡	8.83E-01(2.49E-04)‡	8.92E-01(6.15E-06)‡	9.81E-01(8.81E-04)‡	8.89E-01(1.60E-05)‡	8.12E-01(6.35E-03)
	200	8.75E-01(2.21E-03)‡	8.90E-01(5.56E-06)‡	8.94E-01(1.21E-05)‡	9.88E-01(6.15E-04)‡	8.92E-01(3.23E-05)‡	8.37E-01(4.70E-03)

TABLE 101
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 5 TO 6 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	5.72E-01(6.23E-04)†	6.42E-01(1.24E-03)†	5.73E-01(6.42E-03)†	9.60E-01(1.45E-03)†	7.02E-01(1.11E-02)†	1.00E+00(2.10E-11)
	25	9.43E-01(2.69E-03)†	9.61E-01(2.56E-04)†	9.56E-01(2.93E-03)	9.76E-01(1.07E-03)	9.53E-01(1.29E-03)†	9.86E-01(5.54E-04)
	50	1.00E+00(0.00E+00)‡	9.90E-01(9.88E-05)†	1.00E+00(0.00E+00)†	9.96E-01(4.80E-05)‡	9.90E-01(3.16E-04)†	1.00E+00(1.48E-06)
	200	1.00E+00(0.00E+00)‡	1.00E+00(2.61E-10)‡	1.00E+00(0.00E+00)‡	1.00E+00(3.58E-06)†	9.97E-01(5.83E-06)†	1.00E+00(8.33E-07)
F2	5	8.12E-01(4.85E-04)†	9.98E-01(2.57E-05)‡	9.98E-01(2.21E-05)†	9.74E-01(1.29E-03)†	9.98E-01(2.89E-05)†	9.98E-01(5.07E-05)
	25	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(3.23E-14)	9.03E-01(9.63E-04)†	1.00E+00(1.38E-12)	1.00E+00(2.62E-07)
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	8.82E-01(4.29E-03)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	6.09E-01(1.82E-02)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
F3	5	7.35E-01(1.75E-03)†	8.96E-01(7.51E-04)†	7.06E-01(4.72E-03)†	9.25E-01(2.93E-03)†	8.47E-01(7.15E-03)†	9.98E-01(9.22E-05)
	25	9.79E-01(6.55E-04)	1.00E+00(0.00E+00)‡	9.77E-01(7.26E-04)	8.30E-01(6.83E-03)†	9.95E-01(6.60E-05)	9.91E-01(1.87E-04)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(3.23E-14)‡	8.26E-01(9.96E-03)†	1.00E+00(1.44E-06)†	1.00E+00(1.44E-10)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	7.69E-01(6.16E-03)†	1.00E+00(1.42E-06)†	1.00E+00(0.00E+00)
F4	5	6.09E-01(2.54E-03)†	6.71E-01(5.20E-03)	9.63E-01(3.13E-03)‡	9.59E-01(2.08E-03)‡	9.95E-01(1.92E-04)‡	6.89E-01(3.83E-03)
	25	9.98E-01(6.14E-05)‡	9.73E-01(1.51E-03)‡	1.00E+00(0.00E+00)‡	9.86E-01(9.52E-04)‡	9.94E-01(4.72E-04)‡	7.20E-01(3.35E-03)
	50	1.00E+00(0.00E+00)‡	9.97E-01(2.45E-04)‡	1.00E+00(0.00E+00)‡	9.87E-01(9.08E-04)‡	1.00E+00(0.00E+00)‡	7.11E-01(5.58E-03)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	7.43E-01(7.52E-03)
WFG1	5	4.94E-01(1.13E-03)†	3.81E-01(1.31E-04)†	4.51E-01(7.84E-04)†	4.07E-01(9.44E-04)†	5.25E-01(1.51E-03)†	8.70E-01(7.61E-04)
	25	7.34E-01(4.48E-04)†	4.12E-01(8.59E-04)†	7.29E-01(6.56E-04)†	4.37E-01(4.71E-04)†	6.96E-01(4.51E-04)†	9.03E-01(2.28E-04)
	50	8.40E-01(3.99E-04)†	3.97E-01(1.40E-03)†	8.34E-01(5.98E-04)†	4.49E-01(2.11E-04)†	8.32E-01(2.93E-04)†	9.46E-01(2.03E-04)
	200	9.67E-01(6.54E-05)‡	3.76E-01(1.87E-04)†	9.69E-01(8.86E-05)‡	4.52E-01(5.32E-05)†	9.48E-01(1.89E-04)	9.51E-01(2.46E-04)
WFG2	5	6.11E-01(7.07E-04)†	4.75E-01(2.46E-03)†	6.76E-01(7.70E-04)†	1.60E-01(9.44E-06)†	7.30E-01(1.24E-03)†	9.92E-01(2.60E-04)
	25	8.89E-01(3.55E-04)†	3.99E-01(5.68E-04)†	9.41E-01(2.55E-04)†	1.64E-01(1.26E-07)†	9.22E-01(3.18E-04)†	9.79E-01(4.56E-05)
	50	9.62E-01(3.10E-04)‡	3.95E-01(2.72E-04)†	9.73E-01(7.55E-05)	1.64E-01(8.98E-07)†	9.73E-01(1.33E-05)	9.41E-01(3.05E-02)
	200	9.93E-01(4.84E-06)‡	3.98E-01(9.13E-05)†	9.92E-01(4.12E-06)‡	1.63E-01(7.13E-07)†	9.63E-01(3.06E-06)	9.62E-01(1.50E-06)
WFG3	5	1.00E+00(6.14E-09)‡	9.89E-01(8.30E-05)†	9.86E-01(7.03E-05)†	4.57E-01(2.34E-05)†	1.00E+00(1.98E-07)	9.98E-01(1.79E-05)
	25	1.00E+00(2.66E-09)‡	9.97E-01(6.38E-07)	9.93E-01(1.18E-05)	4.58E-01(1.44E-05)†	9.99E-01(6.88E-07)	9.83E-01(8.42E-04)
	50	1.00E+00(2.29E-09)‡	9.98E-01(5.72E-07)	9.96E-01(6.32E-06)†	4.61E-01(2.16E-05)†	9.98E-01(1.08E-06)	9.97E-01(4.18E-06)
	200	1.00E+00(1.38E-10)‡	9.98E-01(3.56E-07)‡	9.98E-01(7.41E-07)‡	4.67E-01(5.02E-11)†	9.33E-01(6.20E-02)	9.97E-01(8.77E-07)
WFG4	5	8.39E-01(1.47E-03)†	9.63E-01(1.06E-03)†	9.83E-01(1.39E-04)†	8.51E-01(4.44E-04)†	9.80E-01(1.41E-04)†	1.00E+00(1.24E-08)
	25	1.00E+00(1.33E-08)‡	9.25E-01(5.84E-04)†	9.98E-01(9.74E-07)†	8.66E-01(4.27E-06)†	1.00E+00(5.82E-09)‡	1.00E+00(4.66E-07)
	50	1.00E+00(8.28E-13)‡	9.41E-01(2.82E-04)†	9.98E-01(7.37E-07)†	8.66E-01(2.88E-06)†	1.00E+00(2.58E-12)	1.00E+00(3.40E-12)
	200	1.00E+00(2.02E-11)	9.56E-01(1.41E-04)†	1.00E+00(6.91E-08)†	8.64E-01(1.16E-06)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
WFG5	5	7.86E-01(6.57E-04)†	9.67E-01(4.53E-04)†	9.87E-01(2.11E-06)†	7.44E-01(4.94E-05)†	9.88E-01(1.92E-05)†	9.89E-01(1.29E-06)
	25	9.88E-01(1.08E-05)†	9.30E-01(1.73E-04)†	9.88E-01(2.38E-07)†	7.46E-01(3.05E-05)†	9.90E-01(4.61E-09)†	9.90E-01(4.02E-10)
	50	9.90E-01(6.58E-13)‡	9.33E-01(5.93E-05)†	9.89E-01(1.05E-07)†	7.46E-01(2.94E-05)†	9.90E-01(1.42E-09)†	9.90E-01(1.36E-10)
	200	9.90E-01(9.08E-11)‡	9.48E-01(4.97E-05)†	9.90E-01(3.26E-09)†	7.48E-01(3.91E-06)†	9.90E-01(1.36E-10)†	9.90E-01(1.03E-10)
WFG6	5	7.90E-01(8.60E-04)†	9.23E-01(1.24E-03)†	9.78E-01(6.30E-05)	3.18E-01(2.62E-05)†	9.77E-01(5.90E-05)	9.76E-01(1.25E-04)
	25	9.81E-01(6.33E-05)	9.02E-01(6.42E-04)†	9.86E-01(4.36E-05)‡	3.26E-01(1.20E-06)†	9.80E-01(1.98E-04)	9.80E-01(5.87E-05)
	50	9.90E-01(2.03E-05)‡	9.15E-01(5.21E-04)†	9.91E-01(2.81E-05)‡	3.27E-01(3.44E-06)†	9.76E-01(2.76E-04)	9.80E-01(3.78E-05)
	200	9.98E-01(3.87E-06)‡	9.33E-01(3.89E-04)†	9.99E-01(3.79E-07)‡	3.27E-01(2.63E-06)†	9.79E-01(1.84E-04)	9.81E-01(3.95E-05)
WFG7	5	9.99E-01(7.99E-06)	9.22E-01(6.81E-04)†	9.99E-01(2.62E-06)†	9.93E-01(8.16E-05)†	9.99E-01(5.05E-06)†	1.00E+00(1.77E-07)
	25	1.00E+00(2.31E-09)†	9.45E-01(1.77E-04)†	9.99E-01(7.01E-08)†	9.99E-01(4.18E-06)†	1.00E+00(6.41E-12)‡	1.00E+00(1.47E-08)
	50	1.00E+00(0.00E+00)	9.49E-01(6.03E-05)†	9.99E-01(1.31E-07)†	1.00E+00(2.51E-10)†	1.00E+00(2.12E-12)†	1.00E+00(4.28E-13)
	200	1.00E+00(0.00E+00)	9.67E-01(1.47E-04)†	1.00E+00(2.52E-09)†	1.00E+00(8.49E-11)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
WFG8	5	9.98E-01(9.15E-06)†	9.31E-01(1.05E-03)†	9.99E-01(3.19E-07)†	9.90E-01(3.13E-04)†	9.98E-01(1.71E-05)†	1.00E+00(3.51E-11)
	25	1.00E+00(4.58E-09)†	9.36E-01(3.16E-04)†	9.99E-01(1.93E-07)†	9.99E-01(1.83E-06)†	1.00E+00(1.34E-11)	1.00E+00(4.71E-10)
	50	1.00E+00(1.45E-09)	9.50E-01(7.96E-05)†	9.99E-01(9.11E-08)†	1.00E+00(4.86E-07)†	1.00E+00(2.38E-12)†	1.00E+00(9.03E-14)
	200	1.00E+00(5.98E-11)	9.66E-01(1.96E-04)†	1.00E+00(1.88E-09)†	1.00E+00(5.04E-11)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
WFG9	5	6.50E-01(1.74E-02)†	7.49E-01(7.94E-03)†	8.87E-01(4.17E-06)‡	9.58E-01(3.36E-03)‡	8.88E-01(8.96E-06)‡	7.94E-01(8.42E-03)
	25	7.85E-01(9.90E-03)	8.15E-01(1.91E-03)	8.93E-01(1.82E-05)‡	9.80E-01(1.54E-03)‡	8.89E-01(8.16E-06)‡	7.80E-01(1.09E-02)
	50	8.16E-01(6.78E-03)	8.20E-01(1.08E-03)‡	8.97E-01(5.30E-05)‡	9.85E-01(6.14E-04)‡	8.90E-01(7.74E-06)‡	7.81E-01(8.29E-03)
	200	8.67E-01(2.66E-03)‡	8.43E-01(9.91E-05)‡	9.37E-01(2.32E-03)‡	9.93E-01(3.94E-04)‡	8.95E-01(2.67E-05)‡	8.24E-01(3.30E-03)

TABLE 102
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 6 TO 7 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	5.61E-01(7.28E-04)†	6.51E-01(1.62E-03)†	5.55E-01(4.70E-03)†	9.41E-01(2.56E-03)†	6.89E-01(6.98E-03)†	1.00E+00(5.85E-11)
	25	9.95E-01(4.16E-04)‡	8.99E-01(9.61E-04)†	9.89E-01(6.86E-04)‡	9.43E-01(2.42E-03)†	9.52E-01(1.09E-03)†	9.86E-01(4.23E-04)
	50	1.00E+00(0.00E+00)‡	9.67E-01(2.15E-04)†	1.00E+00(0.00E+00)‡	9.92E-01(2.02E-04)†	9.89E-01(1.49E-04)†	9.97E-01(8.51E-05)
	200	1.00E+00(0.00E+00)‡	1.00E+00(3.66E-09)‡	1.00E+00(0.00E+00)‡	9.99E-01(7.04E-06)†	9.96E-01(1.66E-05)†	1.00E+00(3.25E-07)
F2	5	8.08E-01(4.14E-04)†	1.00E+00(3.58E-06)‡	9.99E-01(6.72E-06)	9.77E-01(7.71E-04)†	9.94E-01(5.90E-05)†	9.98E-01(4.23E-05)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(3.23E-14)‡	9.14E-01(3.39E-04)†	1.00E+00(2.57E-12)	9.99E-01(4.09E-06)
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	9.24E-01(7.01E-04)†	1.00E+00(1.57E-13)	1.00E+00(0.00E+00)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	8.32E-01(5.78E-03)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
F3	5	7.17E-01(4.01E-04)†	9.07E-01(5.25E-04)†	7.08E-01(6.04E-03)†	9.02E-01(2.99E-03)†	8.26E-01(8.53E-03)†	9.97E-01(3.12E-04)
	25	9.97E-01(8.40E-05)‡	1.00E+00(0.00E+00)‡	9.99E-01(1.07E-05)‡	7.32E-01(6.71E-03)†	9.90E-01(2.16E-04)	9.95E-01(5.59E-05)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.17E-01(1.64E-02)†	9.99E-01(5.57E-06)†	9.99E-01(6.30E-06)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	9.75E-01(4.85E-03)†	1.00E+00(2.79E-06)†	1.00E+00(1.69E-12)
F4	5	6.43E-01(6.21E-03)	6.86E-01(7.23E-03)	9.94E-01(2.43E-04)‡	9.70E-01(6.12E-04)‡	9.91E-01(3.37E-04)‡	6.71E-01(6.42E-03)
	25	1.00E+00(0.00E+00)‡	9.81E-01(1.05E-03)‡	1.00E+00(1.29E-13)‡	9.12E-01(5.17E-04)‡	9.98E-01(1.78E-04)‡	6.99E-01(4.06E-03)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.94E-01(1.25E-03)‡	1.00E+00(0.00E+00)‡	6.91E-01(6.63E-03)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.02E-01(3.47E-04)‡	1.00E+00(0.00E+00)‡	7.33E-01(1.07E-02)
WFG1	5	4.94E-01(1.00E-03)†	3.43E-01(1.32E-04)†	4.27E-01(1.01E-03)†	3.54E-01(9.91E-04)†	4.84E-01(8.66E-04)†	8.26E-01(1.14E-03)
	25	7.25E-01(2.93E-04)†	3.65E-01(5.89E-04)†	7.17E-01(8.95E-04)†	3.86E-01(6.90E-04)†	6.74E-01(4.38E-04)†	8.59E-01(3.29E-04)
	50	8.34E-01(5.82E-04)†	3.45E-01(1.14E-03)†	8.22E-01(4.24E-04)†	4.18E-01(1.80E-04)†	8.02E-01(2.73E-04)†	9.18E-01(3.15E-04)
	200	9.72E-01(4.75E-05)‡	3.26E-01(2.10E-04)†	9.70E-01(7.77E-05)‡	4.19E-01(9.09E-05)†	9.30E-01(1.90E-04)†	9.39E-01(2.08E-04)
WFG2	5	5.98E-01(7.86E-04)†	3.97E-01(7.30E-04)†	6.62E-01(4.77E-04)†	1.50E-01(8.73E-06)†	6.91E-01(6.90E-04)†	9.87E-01(8.67E-04)
	25	8.82E-01(3.50E-04)†	3.24E-01(2.51E-04)†	9.34E-01(4.02E-04)†	1.51E-01(4.68E-08)†	8.95E-01(4.57E-04)†	9.73E-01(8.48E-05)
	50	9.55E-01(1.52E-04)‡	3.28E-01(1.98E-04)†	9.68E-01(1.13E-04)	1.51E-01(1.41E-06)†	9.63E-01(2.38E-05)	9.34E-01(3.01E-02)
	200	9.93E-01(4.64E-06)‡	3.38E-01(9.47E-05)†	9.92E-01(6.20E-06)‡	1.52E-01(4.05E-06)†	9.57E-01(1.60E-06)‡	9.55E-01(1.43E-06)
WFG3	5	1.00E+00(5.42E-08)‡	9.91E-01(4.22E-05)†	9.78E-01(1.94E-04)†	4.28E-01(2.67E-05)†	9.98E-01(1.40E-06)‡	9.94E-01(1.22E-04)
	25	1.00E+00(1.65E-08)‡	9.97E-01(1.15E-06)‡	9.87E-01(7.73E-05)	4.34E-01(1.06E-05)†	9.97E-01(5.53E-07)‡	9.83E-01(6.21E-04)
	50	1.00E+00(8.13E-09)‡	9.97E-01(1.25E-06)	9.91E-01(2.32E-05)†	4.36E-01(2.44E-06)†	9.97E-01(1.02E-06)	9.96E-01(1.27E-05)
	200	1.00E+00(5.25E-10)‡	9.97E-01(1.30E-06)‡	9.97E-01(2.05E-06)‡	4.36E-01(1.75E-07)†	9.32E-01(6.19E-02)†	9.95E-01(4.88E-06)
WFG4	5	8.45E-01(1.21E-03)†	8.96E-01(3.39E-03)†	9.75E-01(2.17E-04)†	8.27E-01(2.91E-04)†	9.56E-01(2.94E-04)†	1.00E+00(1.43E-06)
	25	1.00E+00(3.30E-11)‡	8.49E-01(6.66E-04)†	9.98E-01(7.11E-07)†	8.35E-01(2.90E-05)†	1.00E+00(1.83E-06)†	1.00E+00(3.89E-07)
	50	1.00E+00(3.23E-14)‡	8.56E-01(6.67E-04)†	9.99E-01(3.89E-07)†	8.29E-01(3.55E-05)‡	1.00E+00(1.52E-12)†	1.00E+00(5.85E-12)
	200	1.00E+00(0.00E+00)	8.88E-01(2.85E-04)†	1.00E+00(1.83E-08)†	8.21E-01(2.01E-05)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
WFG5	5	7.91E-01(7.82E-04)†	9.39E-01(1.89E-03)†	9.87E-01(2.86E-06)	6.87E-01(3.37E-05)†	9.86E-01(3.08E-05)	9.88E-01(1.36E-05)
	25	9.90E-01(2.68E-06)†	8.61E-01(4.52E-04)†	9.89E-01(1.79E-07)†	6.85E-01(1.95E-05)†	9.91E-01(3.66E-09)†	9.91E-01(1.50E-09)
	50	9.91E-01(2.90E-13)‡	8.58E-01(4.27E-04)†	9.90E-01(1.19E-07)†	6.86E-01(1.77E-05)†	9.91E-01(2.28E-09)†	9.91E-01(9.59E-10)
	200	9.91E-01(3.20E-07)‡	8.91E-01(1.48E-04)†	9.91E-01(1.57E-07)‡	6.84E-01(1.70E-05)†	9.91E-01(5.44E-10)	9.91E-01(6.87E-10)
WFG6	5	7.88E-01(7.71E-04)†	8.44E-01(2.62E-03)†	9.77E-01(3.81E-05)‡	2.99E-01(1.47E-05)†	9.72E-01(1.18E-04)	9.70E-01(9.68E-05)
	25	9.89E-01(2.23E-05)‡	8.18E-01(1.91E-04)†	9.92E-01(2.20E-05)‡	3.02E-01(2.43E-06)†	9.82E-01(1.70E-04)‡	9.79E-01(7.66E-05)
	50	9.96E-01(3.59E-06)‡	8.29E-01(1.57E-04)†	9.97E-01(2.37E-06)‡	3.03E-01(2.35E-06)†	9.82E-01(1.52E-04)	9.81E-01(5.18E-05)
	200	1.00E+00(1.81E-07)‡	8.44E-01(3.04E-04)†	1.00E+00(6.08E-08)‡	3.03E-01(9.67E-07)†	9.93E-01(1.27E-04)‡	9.89E-01(1.06E-04)
WFG7	5	9.99E-01(4.71E-06)‡	8.67E-01(1.70E-03)†	9.99E-01(1.82E-06)‡	9.88E-01(4.30E-04)	9.97E-01(1.94E-05)‡	9.85E-01(1.24E-04)
	25	1.00E+00(1.81E-10)‡	8.84E-01(2.50E-04)†	9.99E-01(1.28E-07)†	9.75E-01(2.09E-04)†	1.00E+00(3.70E-12)	1.00E+00(2.32E-08)
	50	1.00E+00(1.51E-09)	8.85E-01(6.54E-04)†	1.00E+00(5.34E-08)†	9.74E-01(2.39E-04)†	1.00E+00(1.62E-12)†	1.00E+00(2.90E-13)
	200	1.00E+00(6.83E-11)	9.16E-01(3.67E-04)†	1.00E+00(2.57E-10)†	9.20E-01(9.47E-04)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
WFG8	5	1.00E+00(2.76E-07)‡	8.72E-01(1.46E-03)†	1.00E+00(8.21E-08)‡	9.81E-01(8.10E-04)	9.96E-01(1.94E-05)‡	9.87E-01(1.19E-04)
	25	1.00E+00(1.51E-09)†	8.82E-01(2.84E-04)†	9.99E-01(2.59E-07)†	9.73E-01(2.62E-04)†	1.00E+00(1.32E-11)‡	1.00E+00(3.25E-10)
	50	1.00E+00(0.00E+00)	8.89E-01(2.31E-04)†	1.00E+00(6.33E-08)†	9.66E-01(2.62E-04)†	1.00E+00(7.57E-13)†	1.00E+00(0.00E+00)
	200	1.00E+00(2.65E-11)	9.16E-01(2.76E-04)†	1.00E+00(4.62E-10)†	9.29E-01(9.43E-04)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
WFG9	5	6.16E-01(1.63E-02)†	6.98E-01(6.84E-03)†	8.87E-01(1.03E-05)‡	9.50E-01(2.49E-03)‡	8.85E-01(5.11E-06)‡	7.67E-01(1.13E-02)
	25	7.72E-01(1.02E-02)	7.60E-01(1.50E-03)	9.43E-01(1.36E-03)‡	9.69E-01(5.94E-04)‡	8.88E-01(5.96E-05)‡	7.43E-01(1.28E-02)
	50	7.98E-01(8.96E-03)‡	7.70E-01(1.52E-03)4	9.90E-01(3.64E-04)‡	9.55E-01(5.06E-04)‡	8.88E-01(1.96E-05)‡	7.51E-01(1.05E-02)
	200	8.82E-01(2.83E-03)‡	8.04E-01(9.99E-04)	9.96E-01(3.86E-04)‡	9.54E-01(4.30E-04)‡	8.92E-01(3.14E-05)‡	8.14E-01(3.70E-03)

TABLE 103
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 7 TO 6 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	6.67E-01(5.98E-03)†	1.00E+00(0.00E+00)‡	6.85E-01(1.44E-02)†	9.38E-01(2.92E-03)†	7.76E-01(8.15E-03)†	1.00E+00(1.94E-11)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.39E-01(2.23E-03)†	9.92E-01(6.01E-05)†	9.95E-01(7.60E-05)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.80E-01(8.48E-04)†	9.92E-01(2.86E-04)†	1.00E+00(7.99E-08)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.99E-01(4.49E-05)†	9.96E-01(6.88E-05)†	1.00E+00(5.47E-07)
F2	5	9.20E-01(3.57E-04)†	1.00E+00(0.00E+00)‡	1.00E+00(1.40E-09)‡	9.69E-01(1.34E-03)†	1.00E+00(3.30E-09)‡	9.99E-01(5.63E-05)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(1.29E-13)	9.11E-01(5.14E-04)†	1.00E+00(9.03E-14)	1.00E+00(1.18E-06)
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	9.11E-01(6.27E-04)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	7.79E-01(4.85E-03)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
F3	5	8.30E-01(2.80E-03)†	1.00E+00(0.00E+00)‡	7.70E-01(1.42E-03)†	8.71E-01(3.44E-03)†	8.91E-01(4.66E-03)†	9.99E-01(1.03E-05)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	7.47E-01(2.85E-03)†	1.00E+00(4.24E-07)‡	9.99E-01(7.74E-06)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.41E-01(1.13E-02)†	1.00E+00(3.37E-06)†	1.00E+00(5.49E-11)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	9.54E-01(5.52E-03)†	1.00E+00(1.09E-08)†	1.00E+00(0.00E+00)
F4	5	8.26E-01(4.74E-03)‡	8.44E-01(1.17E-02)‡	1.00E+00(1.71E-09)‡	1.00E+00(1.29E-13)‡	1.00E+00(8.83E-12)‡	7.65E-01(1.03E-02)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	7.83E-01(4.59E-03)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	7.95E-01(1.36E-02)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	7.56E-01(9.65E-03)
WFG1	5	5.82E-01(8.90E-04)†	4.31E-01(5.97E-04)†	4.90E-01(8.51E-04)†	3.79E-01(1.23E-03)†	5.69E-01(7.58E-04)†	8.72E-01(1.14E-03)
	25	8.23E-01(3.88E-04)†	4.35E-01(6.86E-04)†	8.06E-01(6.59E-04)†	4.15E-01(8.76E-04)†	7.37E-01(7.88E-04)†	9.11E-01(3.84E-04)
	50	8.97E-01(3.65E-04)†	4.13E-01(1.20E-03)†	8.85E-01(4.39E-04)†	4.52E-01(2.20E-04)†	8.35E-01(1.50E-03)†	9.55E-01(1.18E-04)
	200	9.51E-01(1.27E-04)	3.84E-01(2.38E-04)†	9.49E-01(2.18E-04)	4.51E-01(1.23E-04)†	9.09E-01(5.60E-04)†	9.48E-01(2.06E-04)
WFG2	5	6.83E-01(4.90E-04)†	4.55E-01(5.38E-04)†	7.79E-01(1.41E-03)†	1.64E-01(1.84E-05)†	7.69E-01(7.55E-04)†	9.93E-01(1.54E-04)
	25	9.70E-01(6.72E-05)†	3.88E-01(3.37E-04)†	9.66E-01(6.02E-05)†	1.64E-01(6.41E-08)†	9.55E-01(9.88E-05)†	9.78E-01(1.38E-05)
	50	9.82E-01(2.87E-05)‡	3.90E-01(3.04E-04)†	9.79E-01(3.59E-05)‡	1.64E-01(2.51E-06)†	9.76E-01(2.07E-05)‡	9.37E-01(3.03E-02)
	200	9.94E-01(5.21E-06)‡	3.94E-01(8.08E-05)†	9.93E-01(5.29E-06)‡	1.66E-01(5.71E-06)†	9.66E-01(2.48E-05)‡	9.60E-01(9.88E-07)
WFG3	5	1.00E+00(1.95E-07)‡	9.91E-01(6.22E-05)†	9.59E-01(3.41E-04)†	4.62E-01(2.57E-05)†	9.98E-01(1.20E-06)‡	9.97E-01(1.02E-04)
	25	9.99E-01(3.24E-06)‡	9.97E-01(6.94E-07)‡	9.78E-01(2.11E-04)	4.62E-01(6.83E-06)†	9.98E-01(1.46E-06)‡	9.47E-01(3.70E-03)
	50	9.98E-01(1.61E-05)‡	9.97E-01(4.13E-07)	9.83E-01(6.33E-05)†	4.65E-01(5.30E-06)†	9.98E-01(1.07E-06)‡	9.97E-01(2.98E-06)
	200	9.97E-01(2.94E-06)	9.98E-01(2.97E-07)‡	9.94E-01(4.05E-06)†	4.66E-01(2.45E-06)†	9.33E-01(6.21E-02)4	9.97E-01(7.22E-07)
WFG4	5	9.67E-01(6.20E-04)†	8.91E-01(1.71E-03)†	9.92E-01(6.51E-06)†	8.53E-01(5.31E-04)†	9.99E-01(1.14E-05)†	1.00E+00(1.25E-08)
	25	1.00E+00(1.37E-08)‡	8.91E-01(6.04E-04)†	9.95E-01(2.30E-06)†	8.65E-01(2.36E-05)†	1.00E+00(3.91E-11)‡	1.00E+00(9.36E-08)
	50	1.00E+00(1.32E-09)	9.11E-01(5.50E-04)†	9.97E-01(1.34E-06)†	8.66E-01(3.78E-06)†	1.00E+00(1.45E-12)	1.00E+00(5.97E-12)
	200	1.00E+00(2.76E-09)†	9.39E-01(2.53E-04)†	9.99E-01(1.73E-07)†	8.63E-01(1.72E-06)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
WFG5	5	9.12E-01(4.65E-04)†	8.89E-01(1.55E-03)†	9.82E-01(4.61E-06)†	7.45E-01(3.76E-05)†	9.89E-01(6.67E-08)†	9.89E-01(6.96E-08)
	25	9.90E-01(2.30E-09)‡	8.95E-01(6.17E-04)†	9.87E-01(1.31E-06)†	7.41E-01(4.28E-05)†	9.90E-01(2.95E-09)†	9.90E-01(2.33E-09)
	50	9.90E-01(4.33E-10)‡	9.19E-01(4.95E-04)†	9.88E-01(4.15E-07)†	7.42E-01(3.18E-05)†	9.90E-01(1.01E-07)	9.90E-01(6.02E-10)
	200	9.90E-01(3.46E-07)‡	9.46E-01(1.24E-04)†	9.90E-01(1.99E-07)†	7.44E-01(1.52E-05)†	9.92E-01(1.82E-10)‡	9.90E-01(1.34E-10)
WFG6	5	8.97E-01(6.87E-04)†	7.58E-01(2.27E-03)†	9.77E-01(4.65E-05)	3.26E-01(7.56E-06)†	9.78E-01(3.78E-05)	9.77E-01(1.09E-04)
	25	9.91E-01(1.15E-05)‡	8.56E-01(4.46E-04)†	9.91E-01(1.22E-05)‡	3.28E-01(3.46E-06)†	9.83E-01(1.65E-04)‡	9.80E-01(5.73E-05)
	50	9.97E-01(1.82E-06)‡	8.86E-01(1.14E-04)†	9.96E-01(4.56E-06)‡	3.28E-01(2.81E-06)†	9.84E-01(1.58E-04)‡	9.80E-01(2.91E-05)
	200	9.99E-01(1.54E-07)‡	9.14E-01(3.72E-04)†	9.99E-01(1.80E-07)‡	3.27E-01(7.90E-07)†	9.96E-01(5.43E-05)‡	9.82E-01(4.76E-05)
WFG7	5	1.00E+00(2.40E-08)	8.85E-01(9.22E-04)†	9.96E-01(5.23E-06)†	9.93E-01(1.57E-04)†	1.00E+00(3.01E-09)†	1.00E+00(2.83E-10)
	25	1.00E+00(4.92E-08)	9.42E-01(1.42E-04)†	9.97E-01(1.75E-06)†	1.00E+00(6.21E-09)†	1.00E+00(8.53E-12)	1.00E+00(2.94E-08)
	50	1.00E+00(6.62E-09)†	9.47E-01(2.70E-04)†	9.98E-01(5.20E-07)†	1.00E+00(2.07E-09)†	1.00E+00(2.25E-12)†	1.00E+00(9.31E-13)
	200	1.00E+00(1.85E-09)†	9.70E-01(1.28E-04)†	1.00E+00(1.15E-08)†	1.00E+00(1.30E-10)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
WFG8	5	1.00E+00(3.10E-09)	8.99E-01(9.42E-04)†	9.97E-01(2.20E-06)†	9.91E-01(2.28E-04)†	1.00E+00(1.41E-08)†	1.00E+00(2.18E-10)
	25	1.00E+00(3.32E-08)	9.46E-01(1.20E-04)†	9.97E-01(1.82E-06)†	1.00E+00(6.78E-08)†	1.00E+00(9.69E-12)‡	1.00E+00(6.03E-09)
	50	1.00E+00(6.19E-09)†	9.45E-01(7.93E-05)†	9.99E-01(3.19E-07)†	1.00E+00(2.62E-07)†	1.00E+00(1.32E-12)†	1.00E+00(3.23E-14)
	200	1.00E+00(5.31E-09)†	9.68E-01(1.54E-04)†	1.00E+00(1.62E-08)†	9.97E-01(1.57E-04)†	1.00E+00(3.23E-14)	1.00E+00(0.00E+00)
WFG9	5	6.72E-01(1.81E-02)†	7.29E-01(7.68E-03)†	8.87E-01(3.95E-06)‡	9.74E-01(1.19E-03)‡	8.94E-01(1.54E-04)‡	8.02E-01(9.09E-03)
	25	8.13E-01(7.91E-03)	8.15E-01(7.96E-04)	9.58E-01(1.76E-03)‡	9.92E-01(3.23E-04)‡	8.95E-01(9.06E-05)‡	7.84E-01(1.15E-02)
	50	8.41E-01(3.93E-03)‡	8.28E-01(8.89E-04)	9.97E-01(4.06E-06)‡	9.90E-01(5.26E-04)‡	8.97E-01(1.21E-04)‡	7.97E-01(7.34E-03)
	200	9.08E-01(3.19E-03)‡	8.69E-01(2.35E-03)	9.96E-01(3.50E-04)‡	9.93E-01(3.96E-04)‡	8.99E-01(6.05E-05)‡	8.65E-01(1.15E-03)

TABLE 104
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 6 TO 5 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	8.50E-01(8.46E-03)†	1.00E+00(0.00E+00)‡	7.60E-01(1.29E-02)†	8.35E-01(5.84E-03)†	8.82E-01(6.58E-03)†	1.00E+00(9.72E-11)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.92E-01(4.24E-03)†	9.99E-01(5.38E-06)	9.98E-01(6.18E-06)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.71E-01(2.29E-03)†	1.00E+00(4.83E-07)	1.00E+00(3.36E-10)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.98E-01(1.71E-04)†	1.00E+00(3.02E-07)	1.00E+00(2.23E-08)
F2	5	9.93E-01(4.74E-05)†	1.00E+00(0.00E+00)‡	1.00E+00(2.41E-09)‡	9.02E-01(4.59E-03)‡	1.00E+00(6.45E-10)†	9.99E-01(4.68E-05)
	25	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	8.45E-01(3.06E-03)†	1.00E+00(3.23E-14)	1.00E+00(9.03E-14)
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	7.84E-01(1.14E-02)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	5.92E-01(2.18E-02)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
F3	5	9.46E-01(1.90E-03)†	1.00E+00(0.00E+00)‡	8.76E-01(3.14E-03)†	8.40E-01(3.29E-03)†	9.57E-01(1.08E-03)†	1.00E+00(3.25E-10)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	7.96E-01(1.95E-03)†	1.00E+00(2.70E-11)‡	1.00E+00(2.30E-06)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.48E-01(6.37E-03)†	1.00E+00(1.05E-11)	9.99E-01(2.58E-05)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	9.37E-01(7.82E-03)†	1.00E+00(1.27E-11)	1.00E+00(6.47E-13)
F4	5	9.64E-01(2.73E-03)‡	9.60E-01(4.71E-03)‡	1.00E+00(3.75E-09)‡	1.00E+00(0.00E+00)‡	1.00E+00(7.09E-12)‡	8.18E-01(8.54E-03)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.18E-01(8.35E-03)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.14E-01(1.51E-02)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	7.98E-01(1.54E-02)
WFG1	5	6.81E-01(9.06E-04)†	5.71E-01(9.12E-04)†	5.85E-01(2.07E-03)†	4.10E-01(1.48E-03)†	6.54E-01(1.19E-03)†	9.28E-01(3.45E-04)
	25	8.60E-01(3.74E-04)†	5.20E-01(9.22E-04)†	8.30E-01(4.83E-04)†	4.54E-01(8.53E-04)†	7.60E-01(1.85E-03)†	9.64E-01(1.04E-04)
	50	9.03E-01(3.04E-04)†	4.87E-01(1.37E-03)†	8.81E-01(3.00E-04)†	4.91E-01(2.27E-04)†	8.26E-01(1.27E-03)†	9.74E-01(6.77E-05)
	200	9.49E-01(1.70E-04)†	4.55E-01(1.45E-04)†	9.50E-01(8.33E-05)†	4.93E-01(1.18E-04)†	9.33E-01(3.02E-04)†	9.75E-01(6.69E-05)
WFG2	5	7.88E-01(8.61E-04)†	5.61E-01(7.96E-04)†	8.69E-01(7.01E-04)†	1.74E-01(1.22E-05)†	8.58E-01(5.60E-04)†	9.98E-01(3.11E-06)
	25	9.73E-01(8.34E-05)†	4.91E-01(4.20E-04)†	9.65E-01(6.68E-05)†	1.74E-01(2.35E-06)†	9.59E-01(1.60E-04)†	9.78E-01(7.63E-05)
	50	9.81E-01(5.14E-05)‡	4.92E-01(3.38E-04)†	9.77E-01(3.78E-05)‡	1.74E-01(4.05E-07)†	9.79E-01(5.16E-05)‡	9.43E-01(3.06E-02)
	200	9.94E-01(5.07E-06)‡	4.99E-01(3.37E-04)†	9.94E-01(5.26E-06)‡	1.77E-01(7.90E-06)†	9.74E-01(2.19E-06)‡	9.68E-01(1.37E-06)
WFG3	5	9.98E-01(5.24E-06)	8.52E-01(1.49E-02)†	9.10E-01(1.76E-03)†	4.84E-01(2.31E-05)†	9.80E-01(1.34E-03)†	9.94E-01(2.48E-04)
	25	9.91E-01(7.06E-05)	8.94E-01(1.39E-02)†	9.63E-01(2.85E-04)†	4.82E-01(1.65E-05)†	9.75E-01(9.11E-04)†	9.92E-01(1.70E-04)
	50	9.91E-01(3.14E-05)†	9.02E-01(1.13E-02)†	9.80E-01(4.80E-05)†	4.85E-01(1.39E-05)†	9.86E-01(4.25E-04)†	9.99E-01(1.54E-06)
	200	9.97E-01(1.92E-06)†	9.62E-01(2.58E-03)†	9.96E-01(1.99E-06)†	4.86E-01(1.53E-05)†	9.31E-01(6.19E-02)†	9.99E-01(2.00E-07)
WFG4	5	1.00E+00(4.14E-08)	9.38E-01(1.78E-03)†	9.84E-01(1.16E-05)†	8.72E-01(2.75E-05)†	1.00E+00(6.80E-09)‡	1.00E+00(3.39E-08)
	25	1.00E+00(5.41E-08)	9.58E-01(3.41E-04)†	9.92E-01(3.32E-06)†	8.74E-01(1.64E-06)†	1.00E+00(3.16E-11)	1.00E+00(1.33E-06)
	50	1.00E+00(1.21E-07)†	9.77E-01(2.64E-04)†	9.95E-01(2.17E-06)†	8.75E-01(1.20E-06)†	1.00E+00(2.33E-12)†	1.00E+00(2.94E-12)
	200	1.00E+00(1.20E-07)†	9.93E-01(8.74E-05)†	9.98E-01(3.28E-07)†	8.74E-01(1.50E-07)†	1.00E+00(0.00E+00)	1.00E+00(6.24E-14)
WFG5	5	9.85E-01(7.79E-05)	9.37E-01(3.74E-04)†	9.74E-01(1.36E-05)†	8.19E-01(3.15E-05)†	9.88E-01(3.83E-07)†	9.88E-01(9.52E-08)
	25	9.89E-01(6.28E-09)	9.79E-01(1.97E-04)†	9.83E-01(2.26E-06)†	8.13E-01(4.03E-05)†	9.89E-01(6.18E-07)‡	9.89E-01(1.02E-10)
	50	9.89E-01(1.72E-09)†	9.85E-01(9.58E-05)†	9.86E-01(5.27E-07)†	8.14E-01(2.44E-05)†	9.90E-01(1.09E-07)‡	9.89E-01(1.92E-12)
	200	9.89E-01(2.97E-07)‡	9.89E-01(3.29E-08)†	9.88E-01(1.85E-08)†	8.20E-01(6.85E-06)†	9.92E-01(7.45E-12)‡	9.89E-01(1.92E-12)
WFG6	5	9.71E-01(8.17E-05)†	7.96E-01(5.09E-03)†	9.69E-01(6.40E-05)†	3.58E-01(9.57E-06)†	9.75E-01(4.91E-05)	9.75E-01(1.57E-04)
	25	9.89E-01(1.31E-05)‡	9.45E-01(1.77E-04)†	9.89E-01(9.91E-06)‡	3.60E-01(7.26E-06)†	9.82E-01(1.76E-04)	9.81E-01(4.87E-05)
	50	9.95E-01(1.85E-06)‡	9.61E-01(1.05E-04)†	9.95E-01(4.16E-06)‡	3.61E-01(8.25E-06)†	9.84E-01(1.50E-04)‡	9.80E-01(2.79E-05)
	200	9.99E-01(2.14E-07)‡	9.99E-01(1.33E-06)‡	9.99E-01(4.04E-07)‡	3.58E-01(7.94E-07)†	9.96E-01(4.59E-05)‡	9.81E-01(3.28E-05)
WFG7	5	1.00E+00(6.98E-08)	9.56E-01(8.58E-04)†	9.90E-01(1.38E-05)†	9.93E-01(7.69E-06)†	1.00E+00(1.63E-09)†	1.00E+00(3.74E-11)
	25	1.00E+00(4.69E-07)†	9.98E-01(5.91E-05)†	9.94E-01(3.75E-06)†	9.98E-01(5.30E-07)†	1.00E+00(4.03E-11)‡	1.00E+00(1.83E-08)
	50	9.99E-01(5.44E-07)†	1.00E+00(1.96E-09)†	9.98E-01(6.48E-07)†	9.99E-01(9.84E-08)†	1.00E+00(1.40E-11)†	1.00E+00(5.98E-13)
	200	1.00E+00(8.68E-09)†	1.00E+00(8.25E-10)†	1.00E+00(4.22E-08)†	1.00E+00(9.16E-10)†	1.00E+00(1.83E-12)†	1.00E+00(0.00E+00)
WFG8	5	1.00E+00(7.64E-08)†	9.63E-01(7.11E-04)†	9.91E-01(1.31E-05)†	9.93E-01(7.45E-06)†	1.00E+00(4.16E-09)†	1.00E+00(5.65E-12)
	25	1.00E+00(4.08E-07)†	9.88E-01(3.82E-04)†	9.95E-01(3.18E-06)†	9.98E-01(3.75E-07)†	1.00E+00(4.32E-11)†	1.00E+00(2.03E-11)
	50	9.99E-01(4.02E-07)†	1.00E+00(4.17E-09)†	9.97E-01(1.18E-06)†	9.99E-01(3.25E-08)†	1.00E+00(1.61E-11)†	1.00E+00(1.16E-13)
	200	1.00E+00(1.37E-08)†	1.00E+00(1.56E-09)†	1.00E+00(1.95E-08)†	1.00E+00(6.84E-10)†	1.00E+00(1.03E-12)†	1.00E+00(0.00E+00)
WFG9	5	7.20E-01(1.62E-02)†	7.99E-01(5.15E-03)†	8.87E-01(6.27E-05)	9.65E-01(8.25E-04)‡	8.94E-01(1.85E-04)‡	8.34E-01(4.58E-03)
	25	8.42E-01(5.71E-03)	8.88E-01(2.02E-04)‡	9.58E-01(2.25E-03)‡	9.90E-01(4.59E-04)‡	8.97E-01(1.21E-04)‡	8.29E-01(6.40E-03)
	50	8.71E-01(3.62E-03)‡	8.96E-01(4.28E-04)‡	9.97E-01(3.44E-07)‡	9.88E-01(5.62E-04)‡	9.01E-01(2.04E-04)‡	8.27E-01(6.36E-03)
	200	9.21E-01(2.40E-03)‡	9.25E-01(1.99E-03)‡	9.96E-01(3.36E-04)‡	9.92E-01(3.77E-04)‡	9.04E-01(1.68E-04)‡	8.70E-01(2.18E-03)

TABLE 105
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 5 TO 4 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	9.83E-01(2.37E-03)†	1.00E+00(0.00E+00)‡	9.72E-01(2.54E-03)†	8.93E-01(2.31E-03)†	9.74E-01(1.84E-03)†	1.00E+00(1.53E-10)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.41E-01(4.01E-03)†	1.00E+00(1.43E-11)‡	9.99E-01(7.33E-07)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.46E-01(2.79E-03)†	1.00E+00(8.14E-10)	1.00E+00(1.64E-08)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(1.82E-06)†	1.00E+00(2.23E-08)‡	1.00E+00(1.66E-08)
F2	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(1.07E-09)†	8.70E-01(4.54E-03)†	1.00E+00(9.65E-11)†	1.00E+00(4.16E-10)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	7.60E-02(1.78E-02)†	1.00E+00(0.00E+00)‡	1.00E+00(2.25E-08)
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	2.84E-03(9.76E-05)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	8.66E-06(1.41E-22)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
F3	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.92E-01(1.81E-04)†	8.63E-01(2.23E-05)†	9.91E-01(2.15E-04)†	1.00E+00(1.91E-11)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.66E-01(1.03E-07)†	1.00E+00(2.32E-12)‡	1.00E+00(2.08E-07)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.70E-01(5.73E-04)†	1.00E+00(5.25E-12)	1.00E+00(3.07E-11)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	4.89E-05(3.60E-10)†	1.00E+00(3.24E-12)	1.00E+00(3.23E-14)
F4	5	1.00E+00(3.21E-07)‡	9.97E-01(2.05E-04)‡	1.00E+00(1.22E-08)‡	1.00E+00(1.29E-13)‡	1.00E+00(3.53E-12)‡	8.88E-01(7.37E-03)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(5.16E-13)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.93E-01(9.19E-03)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.84E-01(9.87E-03)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.76E-01(1.53E-02)
WFG1	5	7.82E-01(9.91E-04)†	7.66E-01(1.23E-03)†	6.76E-01(1.73E-03)†	4.68E-01(1.33E-03)†	7.83E-01(7.35E-04)†	9.91E-01(2.07E-04)
	25	8.87E-01(5.73E-04)†	6.64E-01(1.17E-03)†	8.57E-01(7.02E-04)†	5.16E-01(8.72E-04)†	8.14E-01(2.20E-03)†	9.88E-01(1.85E-05)
	50	9.02E-01(4.97E-04)†	6.09E-01(1.83E-03)†	8.87E-01(4.58E-04)†	5.54E-01(3.14E-04)†	8.59E-01(1.14E-03)†	9.87E-01(4.90E-05)
	200	9.61E-01(8.85E-05)†	5.66E-01(1.46E-04)†	9.61E-01(5.54E-05)†	5.53E-01(9.56E-05)†	9.66E-01(2.35E-04)†	9.86E-01(4.20E-05)
WFG2	5	9.16E-01(6.47E-04)†	6.99E-01(6.99E-04)†	9.27E-01(6.02E-04)†	1.90E-01(4.76E-05)†	9.18E-01(4.90E-04)†	9.97E-01(2.53E-05)
	25	9.74E-01(7.02E-05)†	6.30E-01(3.15E-04)†	9.74E-01(8.69E-05)†	1.93E-01(1.36E-06)†	9.72E-01(5.67E-05)†	9.83E-01(1.13E-04)
	50	9.86E-01(4.50E-05)‡	6.18E-01(1.50E-04)†	9.83E-01(2.30E-05)‡	1.93E-01(3.44E-07)†	9.85E-01(2.24E-05)‡	9.49E-01(3.10E-02)
	200	9.95E-01(5.16E-06)‡	6.28E-01(1.18E-04)†	9.96E-01(3.49E-06)‡	1.96E-01(1.47E-05)†	9.81E-01(1.88E-06)‡	9.77E-01(5.10E-07)
WFG3	5	9.98E-01(7.41E-06)‡	9.84E-01(1.17E-04)†	8.74E-01(1.53E-03)†	5.07E-01(1.54E-05)†	9.82E-01(6.73E-04)†	1.00E+00(1.46E-08)
	25	9.90E-01(5.16E-05)‡	9.97E-01(1.43E-06)†	9.77E-01(6.47E-05)†	5.01E-01(9.68E-06)†	9.78E-01(1.07E-03)†	9.99E-01(3.37E-06)
	50	9.92E-01(1.07E-05)‡	9.99E-01(1.09E-07)†	9.89E-01(6.27E-06)†	4.99E-01(5.11E-06)†	9.90E-01(1.83E-04)†	1.00E+00(3.01E-09)
	200	9.98E-01(5.69E-07)‡	9.99E-01(8.54E-09)†	9.98E-01(6.14E-07)†	4.97E-01(6.98E-08)†	9.32E-01(6.20E-02)†	1.00E+00(7.26E-10)
WFG4	5	1.00E+00(4.56E-07)	9.90E-01(4.16E-05)†	9.74E-01(2.03E-05)†	8.61E-01(1.53E-06)†	1.00E+00(1.97E-10)†	1.00E+00(7.63E-11)
	25	9.99E-01(5.68E-07)†	9.95E-01(3.98E-07)†	9.90E-01(1.81E-06)†	8.61E-01(3.25E-06)†	1.00E+00(6.44E-11)†	1.00E+00(3.65E-11)
	50	9.99E-01(4.93E-07)†	9.96E-01(5.29E-07)†	9.94E-01(1.70E-06)†	8.64E-01(1.31E-06)†	1.00E+00(4.48E-12)†	1.00E+00(1.51E-12)
	200	9.99E-01(2.21E-07)†	9.96E-01(7.32E-07)†	9.98E-01(2.37E-07)†	8.66E-01(1.14E-08)†	1.00E+00(1.16E-13)	1.00E+00(2.06E-13)
WFG5	5	9.87E-01(5.13E-08)‡	9.83E-01(6.38E-06)†	9.64E-01(2.12E-05)†	9.00E-01(3.60E-05)†	9.86E-01(2.40E-07)†	9.87E-01(7.27E-08)
	25	9.87E-01(2.29E-08)†	9.86E-01(5.29E-07)†	9.81E-01(2.22E-06)†	8.94E-01(1.80E-05)†	9.89E-01(2.05E-07)‡	9.87E-01(3.67E-10)
	50	9.87E-01(8.75E-09)†	9.86E-01(4.39E-07)†	9.84E-01(8.69E-07)†	8.96E-01(3.14E-05)†	9.91E-01(1.44E-07)‡	9.87E-01(6.37E-13)
	200	9.87E-01(2.04E-07)‡	9.87E-01(1.40E-08)†	9.87E-01(1.86E-08)†	9.00E-01(2.09E-05)†	9.93E-01(1.15E-31)‡	9.87E-01(4.59E-31)
WFG6	5	9.80E-01(6.90E-05)	9.49E-01(1.31E-03)†	9.61E-01(1.22E-04)†	4.02E-01(1.27E-05)†	9.69E-01(5.98E-05)†	9.73E-01(3.21E-04)
	25	9.88E-01(1.25E-05)‡	9.98E-01(1.03E-07)‡	9.87E-01(8.75E-06)‡	4.04E-01(1.64E-05)†	9.81E-01(1.82E-04)	9.81E-01(4.51E-05)
	50	9.94E-01(2.36E-06)‡	9.99E-01(6.50E-08)‡	9.94E-01(2.15E-06)‡	4.05E-01(1.78E-05)†	9.84E-01(1.56E-04)‡	9.80E-01(3.06E-05)
	200	9.99E-01(2.88E-07)‡	9.99E-01(1.23E-08)‡	9.98E-01(4.07E-07)‡	4.03E-01(1.17E-05)†	9.96E-01(4.56E-05)‡	9.82E-01(3.22E-05)
WFG7	5	9.99E-01(5.84E-06)†	9.95E-01(1.52E-06)†	9.82E-01(4.91E-05)†	9.90E-01(2.04E-05)†	1.00E+00(3.09E-08)†	1.00E+00(7.70E-13)
	25	9.99E-01(2.15E-06)†	9.99E-01(6.93E-07)†	9.93E-01(2.17E-06)†	9.95E-01(1.45E-06)†	1.00E+00(1.33E-10)‡	1.00E+00(5.45E-08)
	50	9.99E-01(8.11E-07)†	9.99E-01(2.78E-07)†	9.97E-01(6.44E-07)†	9.98E-01(1.87E-07)†	1.00E+00(5.33E-11)†	1.00E+00(2.32E-12)
	200	1.00E+00(1.03E-08)†	9.99E-01(2.39E-08)†	1.00E+00(1.88E-08)†	1.00E+00(3.89E-10)†	1.00E+00(4.62E-12)†	1.00E+00(0.00E+00)
WFG8	5	9.99E-01(2.91E-06)†	9.94E-01(2.38E-06)†	9.80E-01(3.21E-05)†	9.90E-01(3.42E-05)†	1.00E+00(1.66E-07)†	1.00E+00(4.92E-12)
	25	9.99E-01(2.42E-06)†	9.99E-01(9.42E-07)†	9.93E-01(3.01E-06)†	9.95E-01(2.49E-06)†	1.00E+00(2.01E-10)†	1.00E+00(2.43E-10)
	50	9.99E-01(8.79E-07)†	9.99E-01(1.99E-07)†	9.97E-01(4.94E-07)†	9.98E-01(2.92E-07)†	1.00E+00(6.97E-11)†	1.00E+00(2.06E-13)
	200	1.00E+00(1.20E-08)†	9.99E-01(2.19E-08)†	1.00E+00(4.42E-08)†	1.00E+00(5.71E-10)†	1.00E+00(1.83E-12)†	1.00E+00(0.00E+00)
WFG9	5	7.62E-01(1.04E-02)†	8.43E-01(2.87E-03)	8.78E-01(1.77E-06)	9.42E-01(1.10E-03)‡	8.88E-01(1.56E-04)‡	8.46E-01(3.39E-03)
	25	8.62E-01(2.53E-03)	8.84E-01(3.10E-06)	9.60E-01(2.46E-03)‡	9.89E-01(5.38E-04)‡	8.96E-01(1.69E-04)‡	8.60E-01(2.46E-03)
	50	8.91E-01(8.30E-04)‡	8.91E-01(3.47E-04)‡	9.97E-01(3.86E-07)‡	9.86E-01(6.99E-04)‡	8.95E-01(8.78E-05)‡	8.57E-01(3.42E-03)
	200	9.23E-01(2.11E-03)‡	9.20E-01(2.13E-03)‡	9.95E-01(3.44E-04)‡	9.92E-01(4.00E-04)‡	9.01E-01(1.05E-04)‡	8.80E-01(1.93E-03)

TABLE 106
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 4 TO 3 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.98E-01(1.01E-05)†	9.98E-01(1.64E-05)†	1.00E+00(1.50E-08)†	1.00E+00(2.31E-10)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(1.38E-08)	1.00E+00(7.64E-11)‡	1.00E+00(1.39E-07)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(4.80E-10)	1.00E+00(1.01E-07)†	1.00E+00(3.63E-10)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(4.90E-10)‡	1.00E+00(3.72E-09)‡	1.00E+00(5.13E-10)
F2	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(1.09E-09)	8.99E-01(6.07E-03)†	1.00E+00(7.47E-11)‡	1.00E+00(3.77E-10)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(1.77E-11)	1.00E+00(1.72E-12)	1.00E+00(3.24E-09)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(5.16E-13)	1.00E+00(1.66E-12)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
F3	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.95E-01(4.94E-05)†	9.05E-01(6.32E-03)†	9.99E-01(7.44E-06)†	1.00E+00(6.08E-11)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(6.63E-09)†	1.00E+00(9.33E-12)	1.00E+00(5.22E-09)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(3.29E-09)†	1.00E+00(3.78E-12)	1.00E+00(4.04E-12)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(3.96E-11)	1.00E+00(0.00E+00)	1.00E+00(4.06E-13)
F4	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(7.83E-09)	1.00E+00(2.40E-11)‡	1.00E+00(4.38E-11)‡	8.59E-01(8.75E-02)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(3.90E-12)‡	1.00E+00(1.29E-13)‡	9.23E-01(8.47E-03)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.70E-01(4.71E-03)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.53E-01(6.66E-03)
WFG1	5	8.79E-01(1.09E-03)†	9.24E-01(1.05E-04)†	7.93E-01(1.17E-03)†	6.20E-01(7.61E-04)†	8.97E-01(5.14E-04)†	9.95E-01(1.96E-05)
	25	9.09E-01(4.36E-04)†	8.24E-01(2.32E-03)†	8.87E-01(6.89E-04)†	6.59E-01(1.46E-06)†	8.71E-01(1.20E-03)†	9.95E-01(1.25E-05)
	50	9.22E-01(2.65E-04)†	7.50E-01(1.82E-03)†	9.15E-01(4.41E-04)†	6.59E-01(2.30E-08)†	8.74E-01(4.35E-04)†	9.95E-01(1.27E-05)
	200	9.80E-01(3.37E-05)†	7.19E-01(9.04E-05)†	9.77E-01(3.98E-05)†	6.59E-01(7.30E-10)†	9.80E-01(1.76E-04)†	9.95E-01(8.87E-06)
WFG2	5	9.76E-01(2.06E-04)†	8.25E-01(2.40E-03)†	9.67E-01(1.93E-04)†	1.99E-01(4.86E-05)†	9.72E-01(1.82E-04)†	9.98E-01(2.90E-06)
	25	9.83E-01(9.72E-05)†	7.35E-01(4.32E-04)†	9.85E-01(3.84E-05)†	2.09E-01(4.54E-06)†	9.84E-01(1.25E-04)†	9.91E-01(4.98E-06)
	50	9.92E-01(2.05E-05)‡	7.38E-01(1.82E-04)†	9.93E-01(1.55E-05)‡	2.10E-01(6.82E-06)†	9.91E-01(1.90E-05)‡	9.56E-01(3.15E-02)
	200	9.97E-01(4.16E-06)‡	7.40E-01(2.94E-05)†	9.97E-01(4.37E-06)‡	2.08E-01(2.29E-07)†	9.89E-01(1.93E-06)‡	9.87E-01(3.56E-07)
WFG3	5	9.96E-01(1.05E-05)†	9.51E-01(1.13E-03)†	8.58E-01(1.31E-03)†	5.13E-01(1.86E-05)†	9.62E-01(1.27E-03)†	1.00E+00(1.35E-07)
	25	9.92E-01(2.71E-05)†	9.78E-01(3.03E-04)†	9.82E-01(5.50E-05)†	5.13E-01(2.15E-06)†	9.67E-01(6.61E-04)†	1.00E+00(1.74E-08)
	50	9.95E-01(1.76E-06)†	9.88E-01(9.12E-05)†	9.94E-01(1.79E-06)†	5.13E-01(3.32E-07)†	9.86E-01(1.14E-04)†	1.00E+00(5.27E-09)
	200	9.99E-01(5.12E-08)‡	9.96E-01(7.44E-06)‡	9.99E-01(6.42E-08)‡	5.13E-01(4.84E-07)†	9.33E-01(6.20E-02)†	9.68E-01(3.23E-02)
WFG4	5	9.99E-01(1.80E-06)†	9.89E-01(3.20E-06)†	9.67E-01(2.28E-05)†	8.45E-01(4.73E-06)†	1.00E+00(3.34E-10)†	1.00E+00(7.45E-11)
	25	9.99E-01(1.36E-06)†	9.94E-01(8.02E-07)†	9.91E-01(3.01E-06)†	8.44E-01(9.64E-06)†	1.00E+00(1.53E-10)†	1.00E+00(2.28E-11)
	50	9.99E-01(1.37E-06)†	9.94E-01(1.20E-06)†	9.94E-01(1.33E-06)†	8.49E-01(2.88E-06)†	1.00E+00(2.60E-11)†	1.00E+00(7.18E-12)
	200	9.99E-01(1.57E-07)†	9.95E-01(8.32E-07)†	9.99E-01(1.30E-07)†	8.53E-01(3.44E-07)†	1.00E+00(7.81E-13)‡	1.00E+00(1.42E-11)
WFG5	5	9.85E-01(1.47E-07)‡	9.77E-01(2.00E-05)†	9.52E-01(4.71E-05)†	9.58E-01(1.47E-05)†	9.82E-01(2.61E-06)†	9.83E-01(2.48E-06)
	25	9.84E-01(2.90E-07)‡	9.83E-01(1.39E-06)†	9.78E-01(4.50E-06)†	9.59E-01(1.88E-05)†	9.87E-01(6.77E-07)‡	9.84E-01(1.20E-06)
	50	9.85E-01(6.95E-08)†	9.84E-01(9.27E-07)†	9.82E-01(9.25E-07)†	9.58E-01(1.40E-05)†	9.90E-01(2.57E-07)‡	9.85E-01(1.37E-08)
	200	9.85E-01(2.26E-07)‡	9.84E-01(8.02E-07)†	9.85E-01(4.18E-09)†	9.64E-01(3.87E-05)†	9.92E-01(3.23E-14)‡	9.85E-01(2.52E-13)
WFG6	5	9.71E-01(1.25E-04)†	9.57E-01(6.12E-04)†	9.45E-01(1.92E-04)†	4.60E-01(1.63E-05)†	9.53E-01(1.79E-04)†	9.79E-01(6.40E-05)
	25	9.87E-01(1.16E-05)‡	9.85E-01(7.85E-05)‡	9.86E-01(7.64E-06)‡	4.59E-01(1.54E-05)†	9.79E-01(2.12E-04)	9.80E-01(4.58E-05)
	50	9.94E-01(1.90E-06)‡	9.91E-01(3.24E-05)‡	9.93E-01(2.40E-06)‡	4.58E-01(5.54E-06)†	9.82E-01(1.82E-04)‡	9.80E-01(3.38E-05)
	200	9.98E-01(5.19E-07)‡	9.96E-01(4.17E-06)‡	9.98E-01(2.73E-07)‡	4.56E-01(1.67E-07)†	9.96E-01(5.87E-05)‡	9.80E-01(3.82E-05)
WFG7	5	9.97E-01(2.31E-05)†	9.87E-01(6.14E-06)†	9.71E-01(5.01E-05)†	9.86E-01(5.43E-05)†	9.99E-01(2.77E-07)†	1.00E+00(9.23E-13)
	25	9.98E-01(2.62E-06)†	9.96E-01(1.74E-06)†	9.94E-01(1.44E-06)†	9.90E-01(4.26E-06)†	1.00E+00(4.46E-10)†	1.00E+00(5.18E-12)
	50	9.99E-01(4.94E-07)†	9.97E-01(4.62E-07)†	9.98E-01(2.85E-07)†	9.96E-01(7.17E-07)†	1.00E+00(2.46E-10)†	1.00E+00(3.25E-12)
	200	1.00E+00(2.36E-09)†	9.99E-01(4.00E-08)†	1.00E+00(2.15E-09)†	9.99E-01(1.99E-08)†	1.00E+00(5.23E-12)†	1.00E+00(4.28E-13)
WFG8	5	9.98E-01(1.56E-05)†	9.86E-01(7.50E-06)†	9.69E-01(7.10E-05)†	9.86E-01(6.77E-05)†	9.99E-01(1.75E-06)†	1.00E+00(5.81E-12)
	25	9.98E-01(2.32E-06)†	9.95E-01(1.77E-06)†	9.94E-01(2.05E-06)†	9.89E-01(9.56E-06)†	1.00E+00(1.07E-08)†	1.00E+00(2.30E-11)
	50	9.99E-01(3.73E-07)†	9.97E-01(4.04E-07)†	9.98E-01(3.95E-07)†	9.96E-01(1.01E-06)†	1.00E+00(2.95E-10)†	1.00E+00(4.65E-13)
	200	1.00E+00(2.17E-09)†	9.99E-01(3.46E-08)†	1.00E+00(5.34E-09)†	9.99E-01(1.97E-08)†	1.00E+00(7.54E-12)†	1.00E+00(0.00E+00)
WFG9	5	8.13E-01(6.43E-03)†	8.72E-01(1.08E-03)†	8.77E-01(2.98E-04)†	9.03E-01(1.06E-03)‡	8.76E-01(1.29E-04)†	8.82E-01(2.31E-04)
	25	8.86E-01(1.96E-04)	8.79E-01(1.36E-04)†	9.59E-01(2.98E-03)‡	9.81E-01(7.10E-04)‡	8.88E-01(1.65E-04)‡	8.81E-01(7.22E-05)
	50	8.94E-01(5.68E-04)‡	8.85E-01(5.31E-04)	9.96E-01(2.35E-07)‡	9.80E-01(9.60E-04)‡	8.91E-01(1.55E-04)	8.86E-01(2.11E-04)
	200	9.21E-01(2.28E-03)‡	9.14E-01(2.52E-03)‡	9.95E-01(2.97E-04)‡	9.88E-01(4.54E-04)‡	8.93E-01(1.09E-04)‡	8.84E-01(1.92E-04)

TABLE 107
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 3 TO 2 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.00E+00(0.00E+00)‡	9.91E-01(2.75E-03)	9.98E-01(1.63E-05)†	9.84E-01(3.31E-04)†	1.00E+00(1.43E-08)†	1.00E+00(2.63E-10)
	25	1.00E+00(0.00E+00)‡	1.00E+00(1.19E-06)†	1.00E+00(0.00E+00)‡	9.95E-01(4.23E-05)†	1.00E+00(1.43E-06)	1.00E+00(3.83E-10)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.97E-01(8.88E-06)†	1.00E+00(2.43E-07)‡	9.99E-01(1.40E-05)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(4.63E-08)†	1.00E+00(7.98E-10)‡	1.00E+00(1.29E-09)
F2	5	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(1.03E-08)†	6.43E-01(1.64E-01)†	1.00E+00(1.89E-10)†	1.00E+00(0.00E+00)
	25	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(2.43E-09)†	1.00E+00(3.94E-10)†	1.00E+00(1.69E-10)†	1.00E+00(5.69E-11)
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(8.93E-11)†	1.00E+00(4.82E-10)†	1.00E+00(3.39E-10)†	1.00E+00(0.00E+00)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(1.95E-10)‡	1.00E+00(5.08E-10)	1.00E+00(4.15E-10)
F3	5	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	9.93E-01(6.05E-04)†	7.96E-01(4.73E-02)†	1.00E+00(5.07E-09)†	1.00E+00(2.14E-11)
	25	1.00E+00(0.00E+00)	1.00E+00(3.07E-06)	1.00E+00(0.00E+00)	9.95E-01(3.45E-05)†	1.00E+00(9.03E-11)†	1.00E+00(0.00E+00)
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	9.88E-01(2.73E-03)‡	1.00E+00(8.21E-10)	9.68E-01(3.23E-02)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(2.11E-08)‡	1.00E+00(8.76E-11)	9.68E-01(3.23E-02)
F4	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(8.20E-08)	1.00E+00(5.97E-10)‡	1.00E+00(1.78E-10)‡	5.16E-01(2.58E-01)
	25	1.00E+00(0.00E+00)‡	1.00E+00(1.03E-10)‡	1.00E+00(6.78E-10)‡	1.00E+00(4.94E-10)‡	1.00E+00(3.12E-10)‡	0.00E+00(0.00E+00)
	50	1.00E+00(0.00E+00)‡	1.00E+00(2.74E-11)‡	1.00E+00(2.30E-10)‡	1.00E+00(2.44E-10)‡	1.00E+00(2.48E-10)‡	0.00E+00(0.00E+00)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(3.43E-10)‡	1.00E+00(2.12E-10)‡	5.16E-01(2.58E-01)
WFG1	5	9.58E-01(6.54E-04)†	9.49E-01(4.00E-04)†	8.83E-01(9.31E-04)†	5.69E-01(5.69E-07)†	9.90E-01(2.32E-05)†	9.96E-01(1.99E-05)
	25	9.57E-01(2.52E-04)†	8.85E-01(2.36E-04)†	9.45E-01(6.10E-04)†	5.69E-01(1.64E-07)†	9.42E-01(8.18E-04)†	9.96E-01(1.97E-05)
	50	9.72E-01(1.11E-04)†	8.82E-01(9.66E-05)†	9.72E-01(2.13E-04)†	5.70E-01(7.59E-08)†	9.59E-01(3.99E-04)†	9.97E-01(8.78E-06)
	200	9.97E-01(4.45E-07)‡	8.88E-01(1.86E-05)†	9.97E-01(1.65E-06)‡	5.70E-01(3.79E-09)†	9.95E-01(1.52E-05)†	9.96E-01(1.91E-05)
WFG2	5	9.91E-01(2.26E-05)†	9.20E-01(1.40E-03)†	9.84E-01(9.68E-06)†	2.43E-01(1.95E-05)†	9.92E-01(1.78E-05)†	9.97E-01(2.69E-06)
	25	9.95E-01(6.39E-06)	8.90E-01(1.44E-05)†	9.95E-01(6.98E-06)	2.46E-01(3.27E-07)†	9.95E-01(2.03E-05)	9.96E-01(1.26E-07)
	50	9.97E-01(2.30E-06)‡	8.92E-01(2.80E-06)†	9.97E-01(4.95E-06)‡	2.47E-01(8.06E-09)†	9.98E-01(1.94E-06)‡	9.64E-01(3.20E-02)
	200	1.00E+00(8.66E-08)‡	8.93E-01(3.88E-07)†	1.00E+00(8.36E-08)‡	2.47E-01(1.05E-09)†	9.96E-01(1.44E-07)	9.96E-01(1.03E-07)
WFG3	5	9.97E-01(4.56E-06)†	9.60E-01(2.68E-04)†	9.22E-01(1.48E-04)†	4.46E-01(8.23E-06)†	9.88E-01(1.18E-04)†	1.00E+00(4.57E-10)
	25	9.96E-01(2.59E-06)‡	9.93E-01(8.62E-06)‡	9.95E-01(1.85E-06)‡	4.46E-01(2.80E-07)†	9.89E-01(3.53E-05)‡	8.39E-01(1.40E-01)
	50	9.98E-01(3.54E-07)‡	9.97E-01(2.18E-06)‡	9.98E-01(1.20E-07)‡	4.47E-01(6.08E-08)†	9.95E-01(9.08E-06)‡	9.03E-01(9.03E-02)
	200	1.00E+00(1.33E-09)	9.99E-01(1.29E-07)‡	1.00E+00(1.40E-09)	4.47E-01(9.71E-10)†	9.35E-01(6.23E-02)†	9.68E-01(3.23E-02)
WFG4	5	9.96E-01(1.56E-05)†	9.83E-01(5.65E-06)†	9.62E-01(5.73E-05)†	8.24E-01(1.29E-05)†	1.00E+00(7.92E-10)†	1.00E+00(3.18E-10)
	25	9.99E-01(1.74E-06)†	9.91E-01(1.19E-06)†	9.94E-01(1.87E-06)†	8.22E-01(1.75E-05)†	9.99E-01(5.11E-06)†	1.00E+00(3.27E-07)
	50	9.99E-01(4.06E-07)†	9.92E-01(3.68E-06)†	9.98E-01(4.07E-07)†	8.29E-01(9.98E-06)†	1.00E+00(3.70E-08)†	1.00E+00(5.61E-10)
	200	1.00E+00(1.03E-08)†	9.94E-01(1.52E-06)†	1.00E+00(2.98E-09)†	8.35E-01(7.88E-08)†	1.00E+00(1.23E-07)†	1.00E+00(5.79E-10)
WFG5	5	9.81E-01(2.55E-07)‡	9.64E-01(2.55E-04)†	9.21E-01(1.75E-04)†	9.56E-01(7.56E-06)†	9.69E-01(1.12E-04)†	9.76E-01(5.43E-05)
	25	9.81E-01(1.06E-06)‡	9.67E-01(2.38E-04)	9.55E-01(1.93E-04)†	9.60E-01(4.92E-05)†	9.71E-01(7.81E-05)†	9.75E-01(5.38E-05)
	50	9.82E-01(2.19E-07)‡	9.71E-01(2.37E-04)	9.66E-01(2.17E-04)†	9.62E-01(7.54E-05)†	9.81E-01(3.94E-05)‡	9.78E-01(1.32E-05)
	200	9.83E-01(8.86E-07)‡	9.72E-01(2.01E-04)†	9.81E-01(1.20E-05)‡	9.73E-01(2.57E-04)	9.89E-01(4.67E-06)‡	9.77E-01(6.57E-06)
WFG6	5	9.65E-01(1.48E-04)†	9.50E-01(5.35E-04)†	9.42E-01(2.70E-04)†	5.17E-01(8.44E-05)†	9.23E-01(8.31E-04)†	9.76E-01(5.79E-05)
	25	9.89E-01(1.32E-05)‡	9.89E-01(2.59E-05)‡	9.90E-01(5.34E-06)‡	5.22E-01(2.08E-05)†	9.64E-01(2.81E-04)‡	9.14E-01(5.96E-02)
	50	9.96E-01(1.02E-06)‡	9.94E-01(8.00E-06)‡	9.95E-01(1.22E-06)‡	5.22E-01(1.91E-06)	9.75E-01(2.53E-04)‡	5.35E-01(2.44E-01)
	200	9.99E-01(3.08E-07)‡	9.98E-01(6.89E-07)‡	9.98E-01(2.49E-07)‡	5.22E-01(9.09E-07)†	9.95E-01(7.78E-05)‡	9.78E-01(4.75E-05)
WFG7	5	9.94E-01(4.01E-05)†	9.69E-01(2.22E-05)†	9.65E-01(7.92E-05)†	9.79E-01(1.26E-04)†	9.97E-01(2.41E-06)†	1.00E+00(2.02E-10)
	25	9.98E-01(1.41E-06)‡	9.94E-01(6.58E-06)‡	9.96E-01(1.03E-06)‡	9.89E-01(1.00E-05)‡	1.00E+00(1.78E-06)‡	9.03E-01(9.03E-02)
	50	9.99E-01(1.23E-07)†	9.97E-01(4.69E-07)†	9.99E-01(1.58E-07)†	9.96E-01(1.00E-06)†	1.00E+00(4.29E-08)†	1.00E+00(1.71E-10)
	200	1.00E+00(1.84E-10)	9.99E-01(1.03E-08)†	1.00E+00(5.97E-10)	1.00E+00(1.01E-08)†	1.00E+00(1.80E-07)	1.00E+00(3.17E-10)
WFG8	5	9.93E-01(5.19E-05)†	9.68E-01(3.87E-05)†	9.65E-01(1.08E-04)†	9.80E-01(2.28E-04)†	9.96E-01(2.37E-05)†	1.00E+00(1.76E-10)
	25	9.98E-01(1.55E-06)‡	9.94E-01(4.53E-06)‡	9.96E-01(1.27E-06)‡	9.89E-01(1.16E-05)‡	9.99E-01(1.76E-06)‡	9.35E-01(6.24E-02)
	50	9.99E-01(7.82E-08)†	9.97E-01(4.54E-07)†	9.99E-01(2.15E-07)†	9.96E-01(6.24E-07)†	9.99E-01(5.90E-06)†	1.00E+00(1.65E-10)
	200	1.00E+00(1.90E-10)	9.99E-01(7.57E-09)†	1.00E+00(4.43E-10)	1.00E+00(9.60E-09)†	1.00E+00(9.94E-08)†	1.00E+00(3.16E-10)
WFG9	5	8.62E-01(4.13E-05)	8.58E-01(3.70E-06)†	8.46E-01(1.53E-05)†	8.65E-01(1.31E-03)	8.48E-01(1.35E-04)†	8.63E-01(2.26E-05)
	25	8.66E-01(3.02E-05)‡	8.60E-01(1.01E-06)	9.55E-01(3.84E-03)‡	9.48E-01(8.00E-04)‡	8.69E-01(2.14E-04)‡	4.76E-01(1.93E-01)
	50	8.82E-01(7.72E-04)‡	8.65E-01(2.99E-04)	9.97E-01(2.70E-07)‡	9.49E-01(9.52E-04)‡	8.74E-01(9.24E-05)‡	5.30E-01(1.83E-01)
	200	9.24E-01(2.47E-03)‡	9.01E-01(3.30E-03)‡	9.95E-01(4.85E-04)‡	9.66E-01(8.74E-04)‡	8.80E-01(1.23E-04)‡	8.64E-01(3.59E-05)

TABLE 108
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 7 TO 6 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	0.00E+00(0.00E+00)†	9.98E-01(5.53E-06)‡	0.00E+00(0.00E+00)†	2.62E-02(3.69E-03)†	9.07E-01(1.38E-02)†	9.77E-01(4.80E-04)
	25	0.00E+00(0.00E+00)†	1.00E+00(5.15E-10)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	9.99E-01(1.60E-06)	1.00E+00(1.32E-07)
	50	0.00E+00(0.00E+00)†	1.00E+00(4.73E-12)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	1.00E+00(1.87E-07)	1.00E+00(1.70E-08)
	200	0.00E+00(0.00E+00)†	1.00E+00(1.15E-31)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	1.00E+00(3.38E-09)†	1.00E+00(9.80E-10)
F2	5	8.46E-01(2.06E-03)†	9.93E-01(5.76E-07)†	8.85E-01(2.62E-04)†	0.00E+00(0.00E+00)†	9.95E-01(4.80E-08)	9.95E-01(3.69E-08)
	25	8.38E-01(2.05E-03)†	9.95E-01(4.13E-08)†	8.56E-01(1.32E-03)†	0.00E+00(0.00E+00)†	9.96E-01(1.93E-08)	9.96E-01(1.59E-08)
	50	8.52E-01(3.24E-03)†	9.96E-01(2.17E-08)†	8.55E-01(1.63E-03)†	0.00E+00(0.00E+00)†	9.96E-01(1.84E-09)	9.96E-01(2.49E-09)
	200	8.75E-01(3.16E-03)†	9.96E-01(9.91E-10)†	8.44E-01(4.22E-03)†	0.00E+00(0.00E+00)†	9.96E-01(3.07E-10)	9.96E-01(2.03E-10)
F3	5	0.00E+00(0.00E+00)†	9.39E-01(7.14E-04)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	2.93E-01(6.09E-02)†	4.23E-01(4.42E-02)
	25	0.00E+00(0.00E+00)†	9.94E-01(1.68E-07)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	7.96E-01(7.77E-02)	9.02E-01(1.61E-02)
	50	0.00E+00(0.00E+00)†	9.95E-01(6.96E-08)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	8.81E-01(4.56E-02)†	9.87E-01(9.54E-05)
	200	0.00E+00(0.00E+00)†	9.96E-01(8.47E-09)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	9.94E-01(2.31E-06)†	9.95E-01(1.28E-06)
F4	5	6.01E-01(1.61E-04)†	9.94E-01(2.86E-07)	8.35E-01(1.09E-03)†	9.86E-01(2.71E-05)†	9.93E-01(5.01E-07)	9.94E-01(4.07E-07)
	25	6.28E-01(2.03E-04)†	9.96E-01(1.03E-08)	7.01E-01(1.26E-03)†	9.92E-01(4.04E-06)†	9.96E-01(8.14E-08)	9.96E-01(1.29E-07)
	50	6.35E-01(1.63E-04)†	9.96E-01(4.53E-09)†	6.83E-01(7.23E-04)†	9.93E-01(2.88E-06)†	9.96E-01(1.07E-08)	9.96E-01(9.44E-09)
	200	6.56E-01(2.62E-04)†	9.96E-01(4.20E-10)†	6.55E-01(2.25E-04)†	9.94E-01(2.24E-07)†	9.97E-01(1.79E-10)	9.97E-01(1.66E-10)
WFG1	5	8.90E-01(3.19E-04)	8.74E-01(1.17E-04)†	8.95E-01(3.44E-04)‡	2.96E-01(2.37E-02)†	8.84E-01(1.18E-04)	8.83E-01(6.00E-05)
	25	9.55E-01(1.88E-04)‡	9.18E-01(9.95E-05)†	9.56E-01(9.28E-05)‡	2.47E-01(2.25E-02)†	9.44E-01(2.35E-04)	9.44E-01(2.45E-04)
	50	9.78E-01(2.09E-05)	9.32E-01(5.86E-05)†	9.77E-01(2.29E-05)	2.73E-01(2.33E-02)†	9.76E-01(3.08E-05)	9.77E-01(1.87E-05)
	200	9.94E-01(1.23E-06)†	9.51E-01(3.88E-05)†	9.94E-01(7.51E-07)†	2.59E-01(2.39E-02)†	9.96E-01(2.29E-07)	9.96E-01(1.52E-06)
WFG2	5	9.30E-01(2.61E-03)†	9.19E-01(1.74E-04)†	9.62E-01(1.35E-04)†	2.09E-01(6.06E-07)†	9.92E-01(1.05E-05)	9.93E-01(5.22E-06)
	25	9.94E-01(2.31E-06)†	9.56E-01(1.63E-05)†	9.94E-01(2.01E-06)†	2.09E-01(1.94E-08)†	9.98E-01(6.84E-07)	9.99E-01(1.37E-07)
	50	9.97E-01(5.59E-07)†	9.63E-01(1.68E-05)†	9.96E-01(4.37E-07)†	2.09E-01(1.41E-09)†	9.99E-01(3.64E-08)†	1.00E+00(2.73E-08)
	200	9.98E-01(1.90E-07)†	9.76E-01(7.81E-06)†	9.98E-01(1.92E-07)†	2.09E-01(6.63E-10)†	1.00E+00(6.49E-11)†	1.00E+00(5.40E-11)
WFG3	5	6.45E-01(4.44E-04)‡	4.83E-01(1.77E-03)†	6.48E-01(4.72E-04)‡	2.16E-01(1.55E-06)†	5.90E-01(2.74E-04)‡	5.47E-01(4.80E-04)
	25	6.93E-01(4.53E-05)‡	5.88E-01(7.21E-04)	6.90E-01(4.55E-05)‡	2.17E-01(7.60E-07)†	6.28E-01(3.46E-04)‡	5.94E-01(9.77E-04)
	50	7.01E-01(2.09E-05)‡	6.16E-01(2.11E-04)†	7.00E-01(1.44E-05)‡	2.18E-01(1.36E-07)†	6.49E-01(1.91E-04)‡	6.25E-01(5.55E-04)
	200	7.05E-01(1.25E-05)‡	6.46E-01(4.69E-05)†	7.05E-01(9.89E-06)†	2.19E-01(1.54E-08)†	6.80E-01(6.43E-05)‡	6.74E-01(1.59E-04)
WFG4	5	7.79E-01(6.19E-04)†	5.50E-01(2.24E-03)†	7.18E-01(7.33E-04)†	3.26E-01(9.25E-05)†	9.18E-01(2.53E-06)	9.19E-01(2.91E-06)
	25	7.92E-01(3.56E-04)†	6.74E-01(1.75E-03)†	7.51E-01(5.33E-04)†	3.23E-01(1.39E-04)†	9.26E-01(4.07E-07)	9.26E-01(3.57E-07)
	50	8.00E-01(2.70E-04)†	7.15E-01(5.76E-04)†	7.61E-01(5.45E-04)†	2.95E-01(3.16E-04)†	9.26E-01(5.71E-07)	9.26E-01(4.12E-07)
	200	8.21E-01(1.95E-04)†	7.76E-01(3.53E-04)†	7.90E-01(3.99E-04)†	2.86E-01(1.62E-05)†	9.23E-01(2.08E-07)	9.23E-01(2.27E-07)
WFG5	5	7.23E-01(4.88E-04)†	5.46E-01(9.53E-04)†	6.84E-01(4.67E-04)†	4.97E-01(1.89E-05)†	8.76E-01(2.19E-06)†	8.78E-01(1.78E-06)
	25	7.43E-01(4.11E-04)†	6.74E-01(3.38E-04)†	7.25E-01(2.71E-04)†	4.78E-01(2.36E-05)†	8.85E-01(1.07E-06)	8.85E-01(4.29E-06)
	50	7.54E-01(3.01E-04)†	7.03E-01(2.14E-04)†	7.39E-01(2.57E-04)†	4.70E-01(2.38E-05)†	8.85E-01(5.54E-07)	8.86E-01(3.24E-07)
	200	7.60E-01(1.79E-04)†	7.62E-01(8.27E-05)†	7.57E-01(3.01E-04)†	4.66E-01(1.15E-05)†	8.86E-01(2.71E-07)	8.86E-01(2.74E-07)
WFG6	5	7.09E-01(6.41E-04)†	4.68E-01(2.63E-03)†	6.72E-01(5.29E-04)†	1.12E-01(1.25E-06)†	8.31E-01(5.28E-04)†	8.45E-01(4.38E-04)
	25	7.77E-01(1.91E-04)†	6.20E-01(4.68E-04)†	7.57E-01(3.17E-04)†	1.12E-01(7.80E-07)†	9.04E-01(4.77E-05)†	9.08E-01(6.41E-05)
	50	7.89E-01(1.56E-04)†	6.76E-01(5.27E-04)†	7.86E-01(2.35E-04)†	1.11E-01(1.73E-07)†	9.19E-01(5.02E-06)†	9.20E-01(5.08E-06)
	200	8.02E-01(2.86E-04)†	7.49E-01(1.70E-04)†	8.01E-01(2.00E-04)†	1.11E-01(1.25E-07)†	9.25E-01(5.99E-07)	9.25E-01(8.24E-07)
WFG7	5	7.64E-01(4.22E-04)†	5.42E-01(1.06E-03)†	7.10E-01(2.60E-04)†	7.32E-01(5.40E-04)†	8.90E-01(1.77E-05)†	8.96E-01(2.27E-05)
	25	8.10E-01(7.56E-05)†	6.90E-01(5.57E-04)†	7.92E-01(2.20E-04)†	8.20E-01(3.36E-04)†	9.22E-01(2.39E-06)†	9.23E-01(9.90E-07)
	50	8.25E-01(5.32E-05)†	7.46E-01(6.45E-04)†	8.16E-01(8.47E-05)†	8.22E-01(5.44E-04)†	9.26E-01(3.72E-07)	9.27E-01(3.67E-07)
	200	8.42E-01(3.34E-05)†	8.18E-01(8.04E-05)†	8.39E-01(2.97E-05)†	8.38E-01(1.01E-04)†	9.24E-01(7.55E-08)	9.24E-01(7.31E-08)
WFG8	5	7.66E-01(2.05E-04)†	5.28E-01(7.78E-04)†	7.16E-01(5.32E-04)†	7.28E-01(9.13E-04)†	8.91E-01(1.75E-05)†	8.94E-01(1.23E-05)
	25	8.10E-01(7.56E-05)†	6.90E-01(5.57E-04)†	7.92E-01(2.20E-04)†	8.23E-01(3.82E-04)†	9.22E-01(1.07E-06)†	9.23E-01(1.61E-06)
	50	8.27E-01(4.88E-05)†	7.49E-01(1.56E-04)†	8.14E-01(6.87E-05)†	8.34E-01(3.70E-04)†	9.26E-01(3.15E-07)†	9.27E-01(6.07E-07)
	200	8.40E-01(3.16E-05)†	8.18E-01(1.61E-04)†	8.38E-01(2.71E-05)†	8.39E-01(8.83E-05)†	9.24E-01(8.71E-08)	9.24E-01(7.87E-08)
WFG9	5	7.40E-01(7.25E-04)†	4.98E-01(2.59E-03)†	6.75E-01(8.01E-04)†	7.99E-01(2.26E-04)‡	7.25E-01(1.78E-02)	6.65E-01(1.43E-02)
	25	8.10E-01(7.56E-05)	6.90E-01(5.57E-04)	7.92E-01(2.20E-04)	8.28E-01(1.77E-04)	7.73E-01(2.51E-02)	7.52E-01(2.57E-02)
	50	8.27E-01(6.35E-05)	7.17E-01(8.53E-03)	8.14E-01(1.37E-04)	8.30E-01(1.63E-04)	6.98E-01(2.28E-02)	7.26E-01(2.67E-02)
	200	8.41E-01(2.64E-05)‡	7.85E-01(9.89E-03)‡	8.37E-01(4.77E-05)‡	8.17E-01(2.10E-04)‡	7.08E-01(2.47E-02)	6.82E-01(2.26E-02)

TABLE 109
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 6 TO 5 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	0.00E+00(0.00E+00)†	9.04E-01(2.40E-03)‡	0.00E+00(0.00E+00)†	2.01E-02(2.08E-03)†	1.69E-01(4.24E-02)†	2.41E-01(6.33E-02)
	25	0.00E+00(0.00E+00)†	9.99E-01(1.77E-07)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	9.23E-01(1.66E-02)	9.88E-01(1.94E-04)
	50	0.00E+00(0.00E+00)†	1.00E+00(2.00E-10)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	9.97E-01(1.76E-05)†	1.00E+00(4.64E-08)
	200	0.00E+00(0.00E+00)†	1.00E+00(4.06E-13)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	1.00E+00(1.68E-08)†	1.00E+00(7.55E-10)
F2	5	8.37E-01(4.02E-03)†	9.78E-01(4.48E-06)†	9.05E-01(2.18E-04)†	1.05E-02(3.44E-03)†	9.85E-01(7.38E-07)†	9.86E-01(7.95E-07)
	25	9.02E-01(1.87E-03)†	9.86E-01(1.73E-07)†	9.38E-01(1.35E-04)†	0.00E+00(0.00E+00)†	9.90E-01(5.34E-08)	9.90E-01(4.34E-08)
	50	9.41E-01(4.80E-04)†	9.87E-01(4.77E-08)†	9.53E-01(6.67E-05)†	0.00E+00(0.00E+00)†	9.90E-01(7.57E-09)	9.90E-01(6.08E-09)
	200	9.67E-01(4.44E-05)†	9.90E-01(6.84E-09)†	9.66E-01(2.93E-05)†	0.00E+00(0.00E+00)†	9.91E-01(1.37E-09)	9.91E-01(1.64E-09)
F3	5	0.00E+00(0.00E+00)†	5.00E-01(6.82E-02)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	1.32E-05(5.42E-09)†	2.08E-02(3.09E-03)
	25	0.00E+00(0.00E+00)†	9.78E-01(2.24E-05)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	3.17E-01(8.10E-02)†	5.14E-01(9.75E-02)
	50	0.00E+00(0.00E+00)†	9.85E-01(3.56E-07)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	6.36E-01(1.31E-01)†	9.43E-01(2.61E-02)
	200	0.00E+00(0.00E+00)†	9.89E-01(4.32E-08)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	9.89E-01(1.64E-06)	9.89E-01(1.18E-06)
F4	5	3.86E-01(2.42E-04)†	9.83E-01(1.63E-06)‡	8.14E-01(1.78E-03)†	9.47E-01(2.69E-04)†	9.79E-01(5.92E-06)†	9.80E-01(6.50E-06)
	25	5.31E-01(8.63E-04)†	9.88E-01(1.23E-07)†	8.18E-01(1.12E-03)†	9.83E-01(9.79E-07)†	9.89E-01(1.15E-07)	9.89E-01(1.43E-07)
	50	6.57E-01(1.04E-03)†	9.89E-01(6.14E-08)†	8.68E-01(8.14E-04)†	9.85E-01(8.77E-08)†	9.90E-01(2.02E-08)	9.90E-01(1.01E-08)
	200	9.05E-01(1.67E-04)†	9.90E-01(5.17E-09)†	9.24E-01(1.71E-04)†	9.86E-01(7.47E-09)†	9.91E-01(1.04E-09)	9.91E-01(5.80E-10)
WFG1	5	8.37E-01(2.78E-04)	8.10E-01(2.51E-04)†	8.34E-01(1.96E-04)	3.00E-01(1.84E-03)†	8.30E-01(7.86E-05)†	8.39E-01(1.49E-04)
	25	9.14E-01(2.97E-04)†	8.80E-01(8.83E-05)†	9.15E-01(3.61E-04)†	2.90E-01(2.14E-03)†	9.25E-01(2.75E-04)†	9.44E-01(8.28E-05)
	50	9.62E-01(4.14E-05)†	9.09E-01(9.31E-05)†	9.61E-01(3.58E-05)†	2.75E-01(3.22E-03)†	9.72E-01(2.75E-05)†	9.76E-01(3.10E-05)
	200	9.90E-01(9.88E-07)†	9.36E-01(5.10E-05)†	9.90E-01(1.22E-06)†	2.84E-01(1.26E-03)†	9.96E-01(1.29E-07)	9.96E-01(6.80E-08)
WFG2	5	9.28E-01(1.06E-03)†	8.77E-01(2.57E-04)†	9.48E-01(1.36E-04)†	2.10E-01(1.49E-06)†	9.66E-01(7.91E-05)†	9.78E-01(1.71E-05)
	25	9.90E-01(2.39E-06)†	9.46E-01(4.48E-05)†	9.91E-01(2.16E-06)†	2.11E-01(1.75E-07)†	9.96E-01(7.48E-07)†	9.97E-01(4.15E-07)
	50	9.94E-01(5.53E-07)†	9.56E-01(1.58E-05)†	9.94E-01(1.14E-06)†	2.11E-01(8.41E-08)†	9.99E-01(3.09E-08)†	9.99E-01(1.77E-08)
	200	9.95E-01(3.73E-07)†	9.73E-01(6.46E-06)†	9.95E-01(1.99E-07)†	2.11E-01(3.97E-08)†	9.99E-01(1.38E-10)	9.99E-01(1.35E-10)
WFG3	5	6.32E-01(3.23E-04)‡	4.79E-01(1.04E-03)†	6.16E-01(2.69E-04)‡	2.16E-01(4.03E-06)†	5.87E-01(2.54E-04)	5.82E-01(4.72E-04)
	25	6.94E-01(2.69E-05)‡	6.05E-01(1.71E-04)†	6.91E-01(2.52E-05)‡	2.18E-01(2.09E-07)†	6.43E-01(2.13E-04)	6.40E-01(3.53E-04)
	50	7.05E-01(6.83E-06)‡	6.31E-01(1.48E-04)†	7.04E-01(1.16E-05)‡	2.19E-01(2.16E-07)†	6.60E-01(2.30E-04)	6.57E-01(4.45E-04)
	200	7.10E-01(1.23E-05)‡	6.56E-01(4.22E-05)†	7.11E-01(5.86E-06)†	2.21E-01(3.41E-08)†	6.89E-01(1.91E-05)	6.86E-01(1.17E-04)
WFG4	5	7.53E-01(3.25E-04)†	5.27E-01(4.24E-03)†	6.89E-01(2.16E-04)†	3.14E-01(1.20E-04)†	8.68E-01(8.74E-06)†	8.72E-01(8.51E-06)
	25	7.94E-01(8.09E-05)†	6.87E-01(9.66E-04)†	7.68E-01(1.19E-04)†	3.33E-01(6.55E-05)†	8.89E-01(4.32E-07)	8.89E-01(4.54E-07)
	50	8.03E-01(1.17E-04)†	7.28E-01(2.88E-04)†	7.82E-01(1.44E-04)†	3.37E-01(1.53E-04)†	8.90E-01(3.11E-07)	8.90E-01(1.86E-07)
	200	8.18E-01(4.58E-05)†	7.92E-01(8.11E-05)†	8.06E-01(1.25E-04)†	3.28E-01(2.29E-05)†	8.91E-01(9.96E-08)	8.91E-01(7.50E-08)
WFG5	5	7.18E-01(2.80E-04)†	5.64E-01(6.31E-04)†	6.68E-01(3.29E-04)†	5.13E-01(2.45E-05)†	8.48E-01(3.13E-06)†	8.51E-01(2.29E-06)
	25	7.56E-01(1.44E-04)†	7.09E-01(1.77E-04)†	7.40E-01(1.28E-04)†	5.12E-01(2.66E-05)†	8.59E-01(6.03E-07)	8.60E-01(2.35E-06)
	50	7.65E-01(1.12E-04)†	7.43E-01(4.81E-05)†	7.56E-01(9.88E-05)†	5.09E-01(1.65E-05)†	8.60E-01(3.97E-07)	8.61E-01(4.75E-07)
	200	7.75E-01(8.70E-05)†	7.86E-01(3.44E-05)†	7.71E-01(9.21E-05)†	5.04E-01(9.50E-06)†	8.61E-01(2.63E-07)	8.61E-01(1.78E-07)
WFG6	5	6.75E-01(9.17E-04)†	4.16E-01(1.77E-03)†	6.22E-01(5.11E-04)†	1.30E-01(2.72E-06)†	7.36E-01(1.29E-03)†	7.74E-01(1.25E-03)
	25	7.74E-01(1.17E-04)†	6.64E-01(3.08E-04)†	7.65E-01(1.47E-04)†	1.32E-01(1.15E-06)†	8.68E-01(1.56E-05)†	8.73E-01(1.45E-05)
	50	7.93E-01(5.76E-05)†	7.11E-01(9.46E-05)†	7.87E-01(5.67E-05)†	1.32E-01(1.23E-06)†	8.84E-01(2.39E-06)†	8.86E-01(1.56E-06)
	200	8.06E-01(8.42E-05)†	7.99E-01(3.72E-05)†	8.06E-01(1.02E-04)†	1.33E-01(1.75E-07)†	8.90E-01(3.72E-07)	8.90E-01(3.99E-07)
WFG7	5	7.27E-01(3.48E-04)†	4.92E-01(1.36E-03)†	6.78E-01(4.05E-04)†	6.37E-01(5.52E-04)†	8.22E-01(4.82E-05)†	8.37E-01(1.97E-05)
	25	8.00E-01(5.50E-05)†	6.92E-01(5.13E-04)†	7.86E-01(7.85E-05)†	7.73E-01(3.32E-04)†	8.85E-01(1.51E-06)†	8.86E-01(9.64E-07)
	50	8.12E-01(3.27E-05)†	7.40E-01(2.57E-04)†	8.09E-01(2.69E-05)†	7.91E-01(2.44E-04)†	8.90E-01(5.01E-07)	8.91E-01(3.22E-07)
	200	8.27E-01(1.53E-05)†	8.12E-01(7.78E-05)†	8.26E-01(1.65E-05)†	8.16E-01(1.15E-04)†	8.92E-01(5.99E-08)	8.92E-01(2.68E-08)
WFG8	5	7.26E-01(2.54E-04)†	4.81E-01(7.89E-04)†	6.79E-01(4.17E-04)†	6.39E-01(5.12E-04)†	8.25E-01(2.98E-05)†	8.37E-01(2.43E-05)
	25	8.00E-01(5.50E-05)†	6.92E-01(5.13E-04)†	7.86E-01(7.85E-05)†	7.73E-01(3.36E-04)†	8.85E-01(1.48E-06)†	8.86E-01(2.07E-06)
	50	8.12E-01(3.32E-05)†	7.42E-01(2.11E-04)†	8.07E-01(4.47E-05)†	7.88E-01(2.71E-04)†	8.90E-01(2.58E-07)†	8.91E-01(3.92E-07)
	200	8.30E-01(2.61E-05)†	8.08E-01(7.60E-05)†	8.26E-01(2.05E-05)†	8.09E-01(1.04E-04)†	8.92E-01(5.19E-08)	8.92E-01(4.11E-08)
WFG9	5	7.10E-01(7.60E-04)‡	4.26E-01(2.15E-03)†	6.12E-01(1.12E-03)	7.32E-01(2.37E-04)‡	6.56E-01(1.10E-02)	6.36E-01(8.77E-03)
	25	8.00E-01(5.50E-05)	6.92E-01(5.13E-04)	7.86E-01(7.85E-05)	8.02E-01(9.12E-05)	7.62E-01(1.67E-02)	7.40E-01(1.83E-02)
	50	8.16E-01(3.68E-05)	7.35E-01(7.01E-03)	8.11E-01(6.82E-05)	8.08E-01(1.44E-04)	7.02E-01(1.56E-02)	7.27E-01(1.80E-02)
	200	8.31E-01(2.19E-05)‡	8.05E-01(7.24E-03)‡	8.28E-01(2.16E-05)‡	8.03E-01(1.62E-04)‡	7.09E-01(1.76E-02)	6.91E-01(1.57E-02)

TABLE 110
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 5 TO 4 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	0.00E+00(0.00E+00)	3.66E-01(6.84E-02)‡	0.00E+00(0.00E+00)†	3.19E-02(4.84E-03)‡	2.03E-03(1.28E-04)	0.00E+00(0.00E+00)
	25	0.00E+00(0.00E+00)†	9.98E-01(9.73E-07)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	6.37E-01(8.12E-02)†	8.79E-01(1.02E-02)
	50	0.00E+00(0.00E+00)†	1.00E+00(7.09E-10)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	9.81E-01(1.05E-03)†	9.97E-01(2.29E-05)
	200	7.71E-02(2.57E-02)†	1.00E+00(7.23E-12)‡	1.25E-02(2.88E-03)†	0.00E+00(0.00E+00)†	1.00E+00(7.58E-09)†	1.00E+00(1.69E-08)
F2	5	8.59E-01(3.76E-03)†	9.49E-01(1.55E-05)†	9.22E-01(5.65E-05)†	0.00E+00(0.00E+00)†	9.66E-01(2.94E-06)†	9.67E-01(1.35E-06)
	25	9.52E-01(1.14E-04)†	9.67E-01(5.26E-07)†	9.61E-01(6.63E-06)†	0.00E+00(0.00E+00)†	9.73E-01(3.48E-08)	9.73E-01(2.00E-08)
	50	9.65E-01(5.70E-06)†	9.70E-01(1.72E-07)†	9.66E-01(6.14E-07)†	0.00E+00(0.00E+00)†	9.74E-01(1.55E-08)	9.74E-01(1.31E-08)
	200	9.69E-01(7.46E-07)†	9.74E-01(9.31E-09)†	9.69E-01(1.52E-06)†	0.00E+00(0.00E+00)†	9.75E-01(1.01E-08)	9.75E-01(1.29E-08)
F3	5	0.00E+00(0.00E+00)	8.60E-02(1.42E-02)‡	0.00E+00(0.00E+00)	0.00E+00(0.00E+00)	0.00E+00(0.00E+00)	1.36E-03(5.70E-05)
	25	0.00E+00(0.00E+00)†	9.42E-01(2.23E-04)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	3.86E-02(2.46E-02)†	9.50E-02(2.87E-02)
	50	0.00E+00(0.00E+00)†	9.65E-01(1.66E-06)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	4.28E-01(1.30E-01)†	8.69E-01(4.51E-02)
	200	0.00E+00(0.00E+00)†	9.72E-01(8.17E-08)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	9.72E-01(9.33E-06)†	9.73E-01(2.58E-06)
F4	5	2.37E-01(6.64E-04)†	9.58E-01(7.00E-06)†	8.39E-01(5.60E-04)†	8.83E-01(6.03E-04)†	9.50E-01(3.17E-05)†	9.58E-01(2.73E-05)
	25	8.18E-01(7.56E-04)†	9.68E-01(1.04E-06)†	9.56E-01(2.87E-05)†	9.63E-01(2.12E-06)†	9.73E-01(1.92E-07)	9.73E-01(1.75E-07)
	50	9.42E-01(5.69E-05)†	9.70E-01(4.10E-07)†	9.66E-01(1.18E-06)†	9.67E-01(3.58E-07)†	9.74E-01(3.36E-08)†	9.74E-01(2.23E-08)
	200	9.70E-01(9.36E-07)†	9.74E-01(1.63E-08)†	9.70E-01(7.55E-07)†	9.69E-01(9.18E-08)†	9.75E-01(5.46E-09)	9.75E-01(4.00E-09)
WFG1	5	8.15E-01(1.49E-04)†	7.56E-01(2.35E-04)†	8.01E-01(1.32E-04)†	4.71E-01(2.87E-03)†	8.07E-01(8.60E-05)†	8.27E-01(2.04E-04)
	25	9.06E-01(1.44E-04)†	8.53E-01(9.57E-05)†	9.01E-01(2.05E-04)†	4.36E-01(6.14E-03)†	9.24E-01(9.41E-05)†	9.40E-01(4.80E-05)
	50	9.51E-01(9.07E-05)†	8.87E-01(6.10E-05)†	9.46E-01(8.81E-05)†	4.41E-01(6.72E-03)†	9.67E-01(2.26E-05)†	9.76E-01(6.83E-06)
	200	9.85E-01(8.43E-07)†	9.30E-01(2.50E-05)†	9.85E-01(4.70E-07)†	4.53E-01(4.66E-03)†	9.93E-01(8.04E-08)	9.93E-01(7.02E-08)
WFG2	5	9.27E-01(2.49E-04)†	8.54E-01(3.15E-04)†	9.36E-01(2.01E-04)†	2.52E-01(4.48E-06)†	9.46E-01(5.64E-05)†	9.64E-01(2.03E-05)
	25	9.85E-01(1.74E-06)†	9.44E-01(2.29E-05)†	9.85E-01(1.94E-06)†	2.55E-01(3.78E-08)†	9.92E-01(3.77E-07)†	9.92E-01(2.71E-07)
	50	9.89E-01(7.00E-07)†	9.57E-01(1.70E-05)†	9.89E-01(5.31E-07)†	2.56E-01(3.16E-08)†	9.94E-01(2.65E-08)	9.94E-01(5.81E-08)
	200	9.91E-01(4.92E-07)†	9.73E-01(4.46E-06)†	9.90E-01(4.31E-07)†	2.56E-01(6.83E-11)†	9.95E-01(9.95E-10)	9.95E-01(1.31E-09)
WFG3	5	6.29E-01(3.08E-04)‡	5.32E-01(5.92E-04)†	6.22E-01(1.02E-04)‡	2.56E-01(2.61E-05)†	6.04E-01(1.18E-04)	6.05E-01(2.89E-04)
	25	7.04E-01(1.95E-05)‡	6.58E-01(4.90E-05)†	7.03E-01(1.29E-05)‡	2.66E-01(1.80E-07)†	6.79E-01(5.17E-05)	6.76E-01(3.18E-04)
	50	7.14E-01(2.75E-06)‡	6.76E-01(2.78E-05)†	7.13E-01(4.97E-06)‡	2.66E-01(5.13E-08)†	6.93E-01(1.21E-05)	6.93E-01(4.67E-05)
	200	7.19E-01(2.55E-06)‡	6.94E-01(5.39E-06)†	7.19E-01(2.00E-06)‡	2.67E-01(8.61E-08)†	7.08E-01(3.10E-06)	7.08E-01(2.86E-06)
WFG4	5	7.28E-01(1.25E-04)†	5.57E-01(3.05E-03)†	6.86E-01(1.81E-04)†	3.23E-01(8.41E-05)†	8.04E-01(1.18E-05)†	8.09E-01(1.15E-05)
	25	7.73E-01(2.95E-05)†	7.32E-01(5.08E-05)†	7.59E-01(3.54E-05)†	3.61E-01(6.96E-05)†	8.34E-01(2.57E-07)†	8.34E-01(1.41E-07)
	50	7.80E-01(4.13E-05)†	7.59E-01(2.40E-05)†	7.68E-01(6.35E-05)†	3.69E-01(3.72E-05)†	8.36E-01(1.65E-07)	8.36E-01(1.98E-07)
	200	7.90E-01(1.60E-05)†	7.90E-01(3.58E-06)†	7.84E-01(2.42E-05)†	3.72E-01(3.78E-06)†	8.38E-01(1.32E-08)	8.38E-01(1.05E-08)
WFG5	5	7.08E-01(1.72E-04)†	6.35E-01(2.84E-04)†	6.58E-01(1.61E-04)†	5.51E-01(1.82E-05)†	7.87E-01(2.06E-05)†	7.90E-01(2.49E-05)
	25	7.46E-01(3.38E-05)†	7.44E-01(3.60E-05)†	7.30E-01(4.51E-05)†	5.63E-01(1.22E-05)†	8.11E-01(4.48E-07)†	8.12E-01(1.39E-06)
	50	7.52E-01(4.43E-05)†	7.56E-01(1.37E-05)†	7.44E-01(1.74E-05)†	5.64E-01(1.10E-05)†	8.13E-01(1.13E-07)	8.13E-01(1.21E-07)
	200	7.60E-01(3.47E-05)†	7.74E-01(4.87E-06)†	7.58E-01(2.86E-05)†	5.60E-01(3.78E-06)†	8.14E-01(1.35E-07)	8.14E-01(1.26E-07)
WFG6	5	6.81E-01(5.02E-04)†	4.22E-01(2.04E-03)†	6.23E-01(3.28E-04)†	1.52E-01(2.52E-06)†	6.68E-01(1.19E-03)†	7.24E-01(5.58E-04)
	25	7.61E-01(5.83E-05)†	7.28E-01(7.11E-05)†	7.53E-01(6.03E-05)†	1.58E-01(8.34E-07)†	8.17E-01(1.22E-05)†	8.22E-01(6.92E-06)
	50	7.77E-01(2.80E-05)†	7.61E-01(2.00E-05)†	7.70E-01(3.90E-05)†	1.58E-01(2.39E-07)†	8.31E-01(7.54E-07)†	8.32E-01(6.53E-07)
	200	7.89E-01(2.21E-05)†	8.00E-01(4.74E-06)†	7.89E-01(1.57E-05)†	1.60E-01(1.95E-07)†	8.37E-01(3.24E-07)	8.37E-01(8.36E-07)
WFG7	5	7.06E-01(1.84E-04)†	4.62E-01(2.11E-03)†	6.56E-01(2.44E-04)†	5.70E-01(2.86E-04)†	7.58E-01(3.68E-05)†	7.79E-01(3.19E-05)
	25	7.78E-01(2.62E-05)†	6.65E-01(2.77E-04)†	7.71E-01(1.67E-05)†	7.25E-01(1.48E-04)†	8.30E-01(8.43E-07)†	8.32E-01(8.44E-07)
	50	7.91E-01(7.41E-06)†	7.17E-01(1.73E-04)†	7.86E-01(1.77E-05)†	7.46E-01(8.03E-05)†	8.35E-01(1.71E-07)†	8.35E-01(1.73E-07)
	200	8.01E-01(9.84E-06)†	7.86E-01(9.41E-06)†	8.00E-01(4.14E-06)†	7.67E-01(1.14E-04)†	8.39E-01(1.10E-08)	8.39E-01(6.64E-09)
WFG8	5	6.98E-01(1.18E-04)†	4.71E-01(1.46E-03)†	6.60E-01(1.89E-04)†	5.68E-01(2.52E-04)†	7.61E-01(3.41E-05)†	7.80E-01(3.32E-05)
	25	7.78E-01(2.62E-05)†	6.65E-01(2.77E-04)†	7.71E-01(1.67E-05)†	7.28E-01(1.29E-04)†	8.30E-01(8.18E-07)†	8.31E-01(9.07E-07)
	50	7.91E-01(9.09E-06)†	7.18E-01(1.61E-04)†	7.87E-01(1.55E-05)†	7.47E-01(9.91E-05)†	8.35E-01(2.37E-07)†	8.35E-01(1.42E-07)
	200	8.01E-01(7.94E-06)†	7.86E-01(1.31E-05)†	8.01E-01(8.43E-06)†	7.67E-01(5.17E-05)†	8.39E-01(9.50E-09)	8.39E-01(1.20E-08)
WFG9	5	7.06E-01(5.06E-04)‡	4.09E-01(1.71E-03)†	6.02E-01(1.24E-03)	6.60E-01(4.32E-04)‡	5.90E-01(8.71E-03)	6.05E-01(6.27E-03)
	25	7.78E-01(2.62E-05)	6.65E-01(2.77E-04)	7.71E-01(1.67E-05)	7.58E-01(5.95E-05)	7.26E-01(1.17E-02)	7.10E-01(1.23E-02)
	50	7.92E-01(1.14E-05)	7.46E-01(5.98E-03)	7.90E-01(1.01E-05)	7.58E-01(5.58E-05)	6.80E-01(1.06E-02)	6.96E-01(1.30E-02)
	200	8.02E-01(8.32E-06)‡	7.88E-01(5.24E-03)‡	8.00E-01(9.11E-06)‡	7.51E-01(6.16E-05)‡	6.88E-01(1.18E-02)	6.64E-01(1.16E-02)

TABLE 111
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 4 TO 3 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	0.00E+00(0.00E+00)	2.20E-02(5.28E-03)‡	0.00E+00(0.00E+00)	3.64E-02(5.39E-03)‡	0.00E+00(0.00E+00)	0.00E+00(0.00E+00)
	25	0.00E+00(0.00E+00)†	9.91E-01(5.38E-06)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	2.12E-01(5.50E-02)†	6.23E-01(6.41E-02)
	50	0.00E+00(0.00E+00)†	9.96E-01(9.88E-09)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	9.45E-01(5.32E-03)†	9.92E-01(1.02E-04)
	200	9.95E-01(1.55E-05)†	9.97E-01(1.02E-10)‡	9.94E-01(5.34E-05)†	1.64E-02(4.85E-03)†	9.97E-01(1.04E-07)‡	9.96E-01(1.11E-05)
F2	5	8.46E-01(2.14E-03)†	8.92E-01(2.41E-05)†	8.89E-01(2.08E-05)†	1.79E-01(3.15E-02)†	9.19E-01(1.83E-06)†	9.22E-01(2.06E-06)
	25	9.24E-01(1.93E-06)†	9.22E-01(3.23E-07)†	9.25E-01(2.55E-07)†	9.16E-01(1.18E-05)†	9.29E-01(5.29E-08)†	9.29E-01(6.35E-08)
	50	9.26E-01(2.02E-06)†	9.25E-01(1.26E-07)†	9.26E-01(1.02E-06)†	9.24E-01(1.65E-06)†	9.29E-01(4.59E-08)	9.30E-01(3.31E-08)
	200	9.27E-01(6.09E-07)†	9.29E-01(3.73E-09)†	9.26E-01(1.93E-06)†	9.27E-01(2.27E-08)†	9.30E-01(5.63E-09)	9.30E-01(1.14E-08)
F3	5	0.00E+00(0.00E+00)	5.11E-05(8.10E-08)	0.00E+00(0.00E+00)	0.00E+00(0.00E+00)g	0.00E+00(0.00E+00)	0.00E+00(0.00E+00)
	25	0.00E+00(0.00E+00)†	8.52E-01(5.96E-04)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	1.45E-02(6.49E-03)	2.75E-02(6.73E-03)
	50	0.00E+00(0.00E+00)†	9.17E-01(3.27E-06)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	3.13E-01(1.40E-01)†	7.76E-01(5.94E-02)
	200	9.25E-01(2.99E-06)†	9.27E-01(6.07E-08)†	9.24E-01(3.75E-06)†	3.07E-02(2.71E-02)†	9.29E-01(2.48E-05)†	9.28E-01(5.56E-05)
F4	5	1.79E-01(1.36E-03)†	9.01E-01(2.70E-05)†	8.13E-01(3.38E-04)†	8.16E-01(9.38E-04)†	8.95E-01(6.35E-05)†	9.13E-01(2.89E-05)
	25	9.06E-01(3.10E-05)†	9.21E-01(6.53E-07)†	9.25E-01(6.55E-07)†	9.20E-01(1.58E-05)†	9.28E-01(2.12E-07)†	9.28E-01(1.11E-07)
	50	9.26E-01(1.69E-07)†	9.25E-01(2.49E-07)†	9.27E-01(2.13E-07)†	9.26E-01(4.14E-07)†	9.29E-01(5.63E-08)†	9.30E-01(2.59E-08)
	200	9.27E-01(6.83E-07)†	9.29E-01(7.65E-09)†	9.27E-01(4.07E-07)†	9.28E-01(1.62E-08)†	9.30E-01(1.33E-08)	9.30E-01(8.87E-09)
WFG1	5	7.95E-01(7.75E-05)†	6.93E-01(1.44E-04)†	7.76E-01(7.42E-05)†	4.12E-01(1.07E-03)†	7.87E-01(7.56E-05)†	8.13E-01(1.09E-04)
	25	8.98E-01(8.19E-05)†	8.15E-01(5.38E-05)†	8.92E-01(8.22E-05)†	3.96E-01(7.90E-04)†	9.03E-01(5.62E-05)†	9.23E-01(5.03E-05)
	50	9.34E-01(2.91E-05)†	8.57E-01(6.72E-05)†	9.30E-01(3.32E-05)†	3.94E-01(8.20E-04)†	9.46E-01(9.63E-06)†	9.52E-01(7.96E-06)
	200	9.64E-01(4.70E-07)†	9.10E-01(1.65E-05)†	9.64E-01(4.17E-07)†	3.96E-01(7.38E-04)†	9.70E-01(7.14E-08)	9.70E-01(4.76E-08)
WFG2	5	8.98E-01(1.59E-04)†	7.79E-01(3.59E-04)†	9.07E-01(4.62E-05)†	2.67E-01(1.44E-05)†	9.14E-01(7.40E-05)†	9.33E-01(4.39E-05)
	25	9.56E-01(1.26E-06)†	9.17E-01(3.06E-05)†	9.56E-01(1.26E-06)†	2.74E-01(8.77E-08)†	9.61E-01(3.34E-07)†	9.62E-01(1.61E-07)
	50	9.60E-01(5.00E-07)†	9.35E-01(9.89E-06)†	9.59E-01(4.88E-07)†	2.75E-01(1.20E-08)†	9.64E-01(7.82E-08)†	9.64E-01(4.40E-08)
	200	9.62E-01(3.61E-07)†	9.52E-01(7.35E-07)†	9.62E-01(2.69E-07)†	2.75E-01(2.22E-09)†	9.65E-01(7.22E-09)	9.65E-01(7.73E-09)
WFG3	5	6.21E-01(2.82E-04)	5.73E-01(4.40E-04)†	6.18E-01(1.32E-04)	2.74E-01(2.76E-05)†	5.99E-01(6.91E-05)†	6.23E-01(3.00E-04)
	25	7.15E-01(1.01E-05)‡	6.93E-01(1.89E-05)†	7.14E-01(5.98E-06)‡	2.88E-01(5.86E-07)†	6.85E-01(4.51E-05)†	7.05E-01(1.75E-05)
	50	7.22E-01(9.60E-07)‡	7.07E-01(3.72E-06)†	7.22E-01(9.64E-07)‡	2.89E-01(3.14E-08)†	7.07E-01(1.45E-05)†	7.16E-01(1.47E-06)
	200	7.26E-01(5.95E-07)‡	7.18E-01(9.43E-07)†	7.26E-01(4.02E-07)‡	2.90E-01(6.15E-09)†	7.19E-01(4.02E-07)†	7.21E-01(3.28E-07)
WFG4	5	6.79E-01(5.82E-05)†	5.65E-01(4.43E-04)†	6.52E-01(3.47E-05)†	3.38E-01(1.21E-04)†	7.09E-01(1.13E-05)†	7.16E-01(9.19E-06)
	25	7.12E-01(8.72E-06)†	6.69E-01(1.37E-05)†	7.06E-01(5.87E-06)†	3.97E-01(4.75E-05)†	7.42E-01(1.21E-07)†	7.42E-01(8.63E-08)
	50	7.19E-01(4.44E-06)†	6.84E-01(6.62E-06)†	7.15E-01(5.15E-06)†	4.09E-01(1.39E-05)†	7.44E-01(2.72E-08)†	7.44E-01(1.45E-08)
	200	7.26E-01(2.11E-06)†	7.05E-01(2.89E-06)†	7.25E-01(2.67E-06)†	4.22E-01(1.80E-06)†	7.45E-01(1.16E-09)	7.45E-01(1.06E-09)
WFG5	5	6.58E-01(5.49E-05)†	6.05E-01(1.25E-04)†	6.20E-01(9.64E-05)†	5.97E-01(2.00E-05)†	6.84E-01(4.88E-05)†	6.89E-01(5.30E-05)
	25	6.91E-01(1.32E-05)†	6.74E-01(1.70E-05)†	6.80E-01(3.15E-05)†	6.22E-01(3.34E-06)†	7.25E-01(8.58E-07)†	7.26E-01(2.38E-06)
	50	6.96E-01(1.49E-05)†	6.82E-01(4.02E-06)†	6.90E-01(1.96E-05)†	6.22E-01(4.55E-06)†	7.27E-01(9.89E-08)†	7.27E-01(7.80E-08)
	200	7.00E-01(2.78E-06)†	6.93E-01(5.19E-06)†	6.99E-01(4.83E-06)†	6.24E-01(2.50E-06)†	7.28E-01(5.18E-09)†	7.28E-01(4.88E-09)
WFG6	5	6.31E-01(1.37E-04)†	4.73E-01(6.71E-04)†	5.85E-01(3.99E-04)†	1.81E-01(4.79E-06)†	5.92E-01(1.17E-03)†	6.45E-01(8.45E-04)
	25	7.07E-01(2.00E-05)†	6.59E-01(3.34E-05)†	7.02E-01(1.70E-05)†	1.94E-01(9.14E-07)†	7.29E-01(1.17E-05)†	7.35E-01(2.71E-06)
	50	7.18E-01(4.96E-06)†	6.84E-01(1.31E-05)†	7.14E-01(6.68E-06)†	1.96E-01(1.18E-07)†	7.41E-01(3.31E-07)†	7.42E-01(3.18E-07)
	200	7.29E-01(3.12E-06)†	7.15E-01(3.21E-06)†	7.28E-01(3.34E-06)†	1.97E-01(4.95E-08)†	7.45E-01(5.83E-08)	7.45E-01(1.16E-07)
WFG7	5	6.54E-01(5.97E-05)†	4.20E-01(8.45E-04)†	6.17E-01(1.58E-04)†	5.14E-01(2.24E-04)†	6.68E-01(4.49E-05)†	6.92E-01(2.63E-05)
	25	7.20E-01(4.90E-06)†	5.82E-01(1.66E-04)†	7.16E-01(6.28E-06)†	6.93E-01(1.18E-05)†	7.38E-01(1.01E-06)†	7.40E-01(3.06E-07)
	50	7.29E-01(2.07E-06)†	6.35E-01(1.21E-04)†	7.27E-01(3.23E-06)†	7.12E-01(4.81E-06)†	7.43E-01(5.44E-08)†	7.43E-01(5.65E-08)
	200	7.35E-01(8.90E-07)†	7.03E-01(7.15E-06)†	7.35E-01(5.21E-07)†	7.25E-01(2.83E-06)†	7.45E-01(4.35E-10)	7.45E-01(1.44E-09)
WFG8	5	6.51E-01(8.76E-05)†	4.31E-01(3.24E-04)†	6.19E-01(1.13E-04)†	5.10E-01(2.31E-04)†	6.73E-01(4.72E-05)†	6.92E-01(1.76E-05)
	25	7.20E-01(4.90E-06)†	5.82E-01(1.66E-04)†	7.16E-01(6.28E-06)†	6.93E-01(2.65E-05)†	7.38E-01(8.36E-07)†	7.40E-01(2.77E-07)
	50	7.28E-01(3.55E-06)†	6.36E-01(8.34E-05)†	7.27E-01(3.68E-06)†	7.11E-01(6.07E-06)†	7.43E-01(3.67E-08)†	7.43E-01(4.99E-08)
	200	7.35E-01(8.10E-07)†	7.03E-01(9.27E-06)†	7.35E-01(7.85E-07)†	7.25E-01(2.45E-06)†	7.45E-01(8.64E-10)†	7.45E-01(8.40E-10)
WFG9	5	6.61E-01(1.81E-04)‡	3.71E-01(1.46E-03)†	5.70E-01(1.38E-03)‡	5.80E-01(3.96E-04)‡	5.19E-01(5.44E-03)†	5.49E-01(4.64E-03)
	25	7.20E-01(4.90E-06)	5.82E-01(1.66E-04)	7.16E-01(6.28E-06)	6.98E-01(6.37E-06)	6.52E-01(8.21E-03)	6.40E-01(8.23E-03)
	50	7.25E-01(3.04E-06)	6.63E-01(4.15E-03)	7.24E-01(3.34E-06)	7.06E-01(3.77E-06)	6.16E-01(7.08E-03)	6.34E-01(8.05E-03)
	200	7.30E-01(3.97E-06)‡	7.06E-01(3.24E-03)‡	7.29E-01(2.30E-06)‡	7.13E-01(8.33E-06)‡	6.24E-01(7.72E-03)	6.09E-01(7.14E-03)

TABLE 112
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 3 TO 2 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	1.91E-02(8.71E-03)	0.00E+00(0.00E+00)†	7.31E-02(5.08E-02)
	25	0.00E+00(0.00E+00)†	8.97E-01(2.28E-03)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	4.96E-02(7.72E-03)†	3.15E-01(7.77E-02)
	50	2.78E-03(2.26E-04)†	9.66E-01(2.90E-06)	3.42E-03(8.81E-05)†	0.00E+00(0.00E+00)†	8.98E-01(8.22E-03)†	9.60E-01(4.13E-04)
	200	9.69E-01(2.32E-09)†	9.69E-01(1.29E-11)	9.69E-01(2.29E-09)†	5.36E-01(1.17E-01)†	9.69E-01(2.22E-10)	9.68E-01(4.74E-06)
F2	5	7.29E-01(1.88E-03)†	6.71E-01(1.84E-03)†	7.59E-01(1.99E-05)†	6.02E-01(2.03E-02)†	7.91E-01(2.26E-05)†	7.96E-01(9.33E-06)
	25	8.03E-01(3.26E-09)†	7.92E-01(5.14E-05)†	8.03E-01(5.94E-09)‡	8.02E-01(1.28E-08)†	8.03E-01(3.41E-08)	8.03E-01(1.29E-07)
	50	8.03E-01(1.54E-10)	7.97E-01(6.93E-06)†	8.03E-01(5.29E-10)	8.03E-01(5.41E-10)†	8.03E-01(3.92E-09)	8.03E-01(7.19E-08)
	200	8.03E-01(9.38E-11)†	8.01E-01(1.14E-06)†	8.03E-01(1.11E-10)†	8.03E-01(6.50E-11)	8.03E-01(2.71E-10)	8.03E-01(4.57E-10)
F3	5	0.00E+00(0.00E+00)	0.00E+00(0.00E+00)	0.00E+00(0.00E+00)	0.00E+00(0.00E+00)	0.00E+00(0.00E+00)	9.99E-03(3.09E-03)
	25	0.00E+00(0.00E+00)†	5.20E-01(1.05E-02)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	6.74E-02(5.02E-02)
	50	0.00E+00(0.00E+00)†	7.75E-01(3.83E-04)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	2.72E-01(1.02E-01)†	7.53E-01(2.80E-02)
	200	8.03E-01(5.31E-08)†	8.01E-01(2.17E-06)†	8.03E-01(3.23E-08)†	3.11E-01(1.09E-01)†	8.03E-01(8.71E-10)‡	8.03E-01(2.08E-09)
F4	5	9.70E-02(8.55E-04)†	6.39E-01(1.24E-03)†	6.64E-01(3.23E-04)†	7.25E-01(3.35E-04)†	7.43E-01(2.66E-04)†	7.87E-01(3.61E-05)
	25	8.01E-01(4.02E-07)†	7.88E-01(4.71E-05)†	8.03E-01(2.51E-08)†	8.01E-01(2.46E-07)†	8.02E-01(2.77E-07)†	8.03E-01(4.28E-08)
	50	8.03E-01(7.63E-10)†	7.97E-01(2.38E-05)†	8.03E-01(6.17E-10)	8.03E-01(1.78E-09)†	8.03E-01(5.12E-09)†	8.03E-01(3.14E-09)
	200	8.03E-01(7.53E-11)	8.01E-01(1.96E-06)†	8.03E-01(7.47E-11)	8.03E-01(1.45E-10)	8.03E-01(1.53E-09)	8.03E-01(1.20E-09)
WFG1	5	6.57E-01(6.26E-05)†	5.00E-01(7.62E-05)†	6.33E-01(1.04E-04)†	3.38E-01(1.05E-03)†	6.49E-01(4.75E-05)†	6.78E-01(5.51E-05)
	25	7.67E-01(1.18E-05)†	6.61E-01(9.02E-05)†	7.61E-01(1.08E-05)†	3.43E-01(1.05E-03)†	7.61E-01(1.16E-05)†	7.73E-01(1.03E-05)
	50	7.91E-01(1.90E-06)†	7.14E-01(4.79E-05)†	7.89E-01(2.70E-06)†	3.43E-01(1.06E-03)†	7.90E-01(3.54E-06)†	7.94E-01(1.64E-06)
	200	8.03E-01(1.06E-07)†	7.74E-01(5.09E-06)†	8.03E-01(7.79E-08)†	3.43E-01(1.06E-03)†	8.04E-01(7.26E-08)	8.04E-01(3.12E-08)
WFG2	5	6.68E-01(5.72E-04)†	4.94E-01(3.11E-03)†	7.10E-01(2.97E-05)†	3.36E-01(1.42E-05)†	7.15E-01(7.82E-05)†	7.31E-01(1.52E-04)
	25	7.62E-01(2.18E-07)†	6.98E-01(6.06E-05)†	7.61E-01(2.72E-07)†	3.44E-01(1.90E-08)†	7.61E-01(1.29E-07)†	7.62E-01(3.84E-07)
	50	7.64E-01(2.00E-08)†	7.10E-01(3.31E-05)†	7.64E-01(4.31E-08)†	3.45E-01(1.33E-09)†	7.64E-01(3.98E-08)†	7.64E-01(2.78E-08)
	200	7.64E-01(1.81E-10)‡	7.22E-01(7.48E-07)†	7.64E-01(2.67E-10)‡	3.45E-01(3.79E-12)†	7.64E-01(4.33E-09)	7.64E-01(4.68E-09)
WFG3	5	5.40E-01(2.54E-04)†	5.26E-01(5.95E-04)†	5.65E-01(1.07E-04)†	3.50E-01(5.21E-05)†	5.91E-01(1.24E-04)†	6.38E-01(2.34E-04)
	25	7.24E-01(3.25E-06)‡	7.11E-01(1.16E-06)†	7.25E-01(1.20E-06)‡	3.64E-01(5.38E-08)†	7.09E-01(1.66E-05)†	7.19E-01(3.62E-06)
	50	7.30E-01(1.16E-07)‡	7.22E-01(3.55E-07)†	7.30E-01(2.05E-07)‡	3.65E-01(7.97E-09)†	7.23E-01(1.97E-06)†	7.28E-01(3.48E-07)
	200	7.32E-01(4.12E-09)†	7.30E-01(3.47E-08)†	7.32E-01(2.87E-09)†	3.65E-01(6.28E-11)†	7.32E-01(2.92E-08)†	7.32E-01(1.06E-08)
WFG4	5	5.41E-01(1.72E-05)†	4.25E-01(1.44E-04)†	5.24E-01(1.54E-05)†	2.93E-01(1.81E-04)†	5.45E-01(2.10E-05)†	5.53E-01(1.06E-05)
	25	5.75E-01(8.04E-07)†	5.33E-01(1.76E-05)†	5.73E-01(5.56E-07)†	3.38E-01(1.21E-05)†	5.77E-01(2.93E-06)	5.78E-01(2.53E-06)
	50	5.78E-01(1.14E-07)†	5.46E-01(8.86E-06)†	5.78E-01(2.07E-07)†	3.50E-01(8.76E-06)†	5.80E-01(2.10E-07)	5.80E-01(2.48E-07)
	200	5.80E-01(1.01E-08)†	5.58E-01(8.23E-06)†	5.80E-01(6.45E-09)†	3.57E-01(2.02E-08)†	5.80E-01(8.22E-08)	5.80E-01(3.13E-08)
WFG5	5	5.24E-01(3.60E-05)‡	4.50E-01(1.54E-04)†	5.00E-01(3.05E-05)†	5.47E-01(1.51E-05)‡	5.20E-01(4.63E-05)	5.17E-01(6.91E-05)
	25	5.54E-01(1.72E-06)†	5.37E-01(3.77E-06)†	5.47E-01(1.69E-05)†	5.68E-01(6.71E-06)‡	5.63E-01(1.18E-05)	5.64E-01(1.16E-05)
	50	5.56E-01(1.46E-06)†	5.41E-01(1.17E-06)†	5.51E-01(1.40E-05)†	5.67E-01(5.08E-06)	5.67E-01(2.25E-06)	5.67E-01(1.19E-06)
	200	5.57E-01(1.78E-06)†	5.45E-01(8.25E-06)†	5.56E-01(2.16E-06)†	5.71E-01(1.99E-05)	5.68E-01(1.02E-07)	5.68E-01(1.82E-07)
WFG6	5	5.11E-01(5.28E-05)†	3.45E-01(3.36E-04)†	4.83E-01(1.66E-04)†	2.32E-01(1.26E-05)†	4.74E-01(5.48E-04)†	5.25E-01(1.70E-04)
	25	5.70E-01(4.65E-06)†	5.41E-01(2.12E-05)†	5.68E-01(2.95E-06)†	2.50E-01(3.03E-06)†	5.69E-01(1.28E-05)†	5.72E-01(1.01E-05)
	50	5.75E-01(9.67E-07)†	5.60E-01(9.04E-06)†	5.74E-01(1.70E-06)†	2.52E-01(1.21E-08)†	5.77E-01(1.47E-06)	5.77E-01(3.26E-06)
	200	5.79E-01(7.38E-07)†	5.73E-01(2.82E-06)†	5.78E-01(3.81E-07)†	2.53E-01(5.68E-10)†	5.80E-01(7.31E-08)	5.80E-01(5.58E-08)
WFG7	5	5.21E-01(1.80E-05)†	2.48E-01(1.90E-03)†	4.99E-01(5.29E-05)†	4.46E-01(1.08E-04)†	5.16E-01(3.81E-05)†	5.42E-01(2.96E-05)
	25	5.76E-01(3.91E-07)	4.66E-01(4.86E-04)†	5.75E-01(6.05E-07)†	5.66E-01(3.08E-06)†	5.74E-01(3.52E-06)†	5.76E-01(2.84E-06)
	50	5.79E-01(4.97E-08)	5.49E-01(2.12E-05)†	5.79E-01(1.08E-07)	5.75E-01(2.02E-07)†	5.79E-01(9.06E-07)	5.79E-01(1.71E-06)
	200	5.80E-01(7.52E-10)‡	5.72E-01(3.98E-06)†	5.80E-01(3.59E-10)‡	5.80E-01(5.16E-09)†	5.80E-01(4.56E-09)	5.80E-01(1.35E-08)
WFG8	5	5.20E-01(3.02E-05)†	2.55E-01(1.58E-04)†	4.98E-01(3.69E-05)†	4.41E-01(9.21E-05)†	5.16E-01(2.64E-05)†	5.41E-01(1.43E-05)
	25	5.76E-01(3.91E-07)	4.66E-01(4.86E-04)†	5.75E-01(6.05E-07)	5.66E-01(2.64E-06)†	5.74E-01(3.25E-06)	5.75E-01(5.89E-06)
	50	5.79E-01(3.50E-08)	5.47E-01(3.30E-05)†	5.79E-01(6.53E-08)†	5.75E-01(1.78E-07)†	5.79E-01(4.64E-07)	5.79E-01(7.52E-07)
	200	5.80E-01(2.63E-10)†	5.73E-01(2.72E-06)†	5.80E-01(4.47E-10)†	5.80E-01(5.01E-09)†	5.80E-01(1.13E-08)	5.80E-01(8.25E-09)
WFG9	5	5.29E-01(6.94E-05)‡	2.71E-01(5.50E-04)†	4.53E-01(1.29E-03)‡	4.92E-01(1.65E-04)‡	4.09E-01(3.30E-03)	4.18E-01(3.97E-03)
	25	5.76E-01(3.91E-07)‡	4.66E-01(4.86E-04)	5.75E-01(6.05E-07)‡	5.60E-01(2.86E-06)	5.13E-01(4.21E-03)	5.04E-01(4.19E-03)
	50	5.76E-01(6.11E-07)	5.39E-01(3.15E-03)	5.75E-01(4.09E-07)	5.63E-01(8.67E-06)	4.88E-01(3.71E-03)	4.98E-01(4.41E-03)
	200	5.79E-01(3.38E-07)‡	5.59E-01(1.50E-03)‡	5.79E-01(2.99E-07)‡	5.70E-01(1.86E-05)‡	4.92E-01(4.13E-03)	4.81E-01(3.83E-03)

TABLE 113
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 2 TO 3 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	0.00E+00(0.00E+00)†	2.60E-02(3.31E-03)	0.00E+00(0.00E+00)†	3.37E-03(3.52E-04)	0.00E+00(0.00E+00)†	1.53E-01(1.13E-01)
	25	1.56E-02(6.65E-03)†	9.96E-01(2.26E-07)‡	2.04E-03(1.29E-04)†	0.00E+00(0.00E+00)†	8.15E-01(2.35E-02)†	9.51E-01(3.05E-03)
	50	6.02E-01(1.03E-01)†	9.97E-01(2.06E-09)‡	7.21E-01(5.95E-02)†	0.00E+00(0.00E+00)†	9.95E-01(2.48E-05)†	9.97E-01(1.25E-06)
	200	9.97E-01(1.79E-09)†	9.97E-01(2.17E-11)‡	9.97E-01(4.38E-09)†	1.02E-01(4.88E-02)†	9.97E-01(2.76E-07)†	9.97E-01(1.33E-08)
F2	5	8.50E-01(4.58E-04)†	8.98E-01(1.33E-04)†	9.08E-01(4.06E-05)†	8.49E-01(7.52E-04)†	9.09E-01(3.72E-05)†	9.27E-01(3.79E-06)
	25	9.12E-01(9.71E-05)†	9.24E-01(3.03E-07)†	9.26E-01(9.03E-07)†	9.21E-01(1.81E-06)†	9.29E-01(3.15E-08)†	9.30E-01(7.67E-07)
	50	9.25E-01(2.18E-06)†	9.27E-01(8.24E-08)†	9.26E-01(5.75E-07)†	9.26E-01(1.35E-07)†	9.30E-01(2.22E-08)†	9.30E-01(4.75E-09)
	200	9.26E-01(7.87E-07)†	9.29E-01(5.08E-09)†	9.26E-01(2.09E-06)†	9.27E-01(1.79E-08)†	9.30E-01(6.14E-09)†	9.30E-01(3.09E-09)
F3	5	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	4.21E-02(3.02E-02)
	25	0.00E+00(0.00E+00)†	9.09E-01(2.01E-05)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	1.52E-01(6.38E-02)†	5.52E-01(1.17E-01)
	50	1.80E-01(8.49E-02)†	9.24E-01(5.51E-07)†	2.52E-01(1.12E-01)†	0.00E+00(0.00E+00)†	8.79E-01(9.59E-03)†	9.27E-01(1.96E-05)
	200	9.28E-01(2.35E-07)†	9.29E-01(1.92E-08)†	9.27E-01(3.90E-07)†	2.99E-02(2.76E-02)†	9.29E-01(2.19E-05)†	9.30E-01(7.63E-09)
F4	5	6.95E-01(1.72E-03)†	9.01E-01(3.81E-04)	8.97E-01(1.25E-04)	8.20E-01(1.86E-03)	8.94E-01(4.16E-04)	8.54E-01(3.79E-03)
	25	8.14E-01(1.02E-03)†	9.08E-01(1.39E-03)‡	8.78E-01(3.65E-03)‡	8.80E-01(3.04E-03)‡	9.29E-01(3.55E-08)‡	8.21E-01(2.35E-03)
	50	9.26E-01(8.78E-06)‡	9.17E-01(9.43E-04)‡	9.27E-01(4.77E-07)‡	9.09E-01(1.74E-03)‡	9.30E-01(1.55E-08)‡	8.00E-01(1.72E-07)
	200	9.27E-01(6.37E-07)‡	9.29E-01(3.94E-08)‡	9.27E-01(5.38E-07)‡	9.27E-01(1.74E-05)‡	9.30E-01(3.06E-09)‡	8.00E-01(2.23E-07)
WFG1	5	8.30E-01(1.36E-04)†	6.86E-01(2.11E-04)†	8.03E-01(1.65E-04)†	4.02E-01(9.85E-04)†	8.15E-01(1.35E-04)†	8.63E-01(5.40E-05)
	25	9.34E-01(2.55E-05)†	8.15E-01(1.01E-04)†	9.31E-01(4.97E-05)†	3.96E-01(7.90E-04)†	9.35E-01(2.51E-05)†	9.54E-01(1.32E-05)
	50	9.56E-01(4.83E-06)†	8.59E-01(7.64E-05)†	9.55E-01(2.82E-06)†	3.91E-01(7.30E-04)†	9.60E-01(2.77E-06)†	9.67E-01(3.89E-07)
	200	9.66E-01(3.49E-07)†	9.23E-01(2.78E-05)†	9.66E-01(2.45E-07)†	3.98E-01(7.68E-04)†	9.70E-01(3.71E-08)	9.70E-01(4.43E-08)
WFG2	5	8.79E-01(2.79E-04)†	8.23E-01(2.27E-04)†	9.13E-01(4.42E-05)†	2.69E-01(2.68E-06)†	9.13E-01(4.77E-05)†	9.52E-01(4.93E-06)
	25	9.55E-01(1.79E-05)†	9.22E-01(1.49E-05)†	9.59E-01(6.51E-07)†	2.74E-01(3.44E-08)†	9.63E-01(1.15E-07)†	9.64E-01(6.58E-08)
	50	9.61E-01(3.53E-07)†	9.37E-01(3.83E-06)†	9.61E-01(2.80E-07)†	2.75E-01(2.63E-09)†	9.64E-01(4.00E-08)†	9.65E-01(2.26E-08)
	200	9.62E-01(3.88E-07)†	9.52E-01(1.06E-06)†	9.62E-01(2.59E-07)†	2.75E-01(7.63E-11)†	9.65E-01(4.75E-09)	9.65E-01(7.65E-09)
WFG3	5	6.83E-01(1.49E-04)	6.26E-01(1.92E-04)†	6.54E-01(6.34E-05)†	2.77E-01(2.38E-05)†	6.41E-01(9.38E-05)†	6.86E-01(1.09E-04)
	25	7.19E-01(3.86E-07)‡	7.08E-01(4.52E-06)†	7.23E-01(1.90E-06)‡	2.89E-01(1.12E-07)†	7.11E-01(3.29E-06)†	7.16E-01(2.18E-06)
	50	7.22E-01(6.37E-08)‡	7.14E-01(1.25E-06)†	7.26E-01(1.68E-06)‡	2.90E-01(7.31E-09)†	7.18E-01(6.83E-07)†	7.21E-01(4.46E-07)
	200	7.24E-01(3.75E-06)‡	7.19E-01(3.59E-07)†	7.27E-01(2.02E-06)‡	2.90E-01(3.37E-10)†	7.22E-01(2.85E-07)	7.22E-01(2.17E-07)
WFG4	5	5.68E-01(1.07E-03)†	6.04E-01(1.14E-04)†	6.50E-01(2.17E-04)†	3.44E-01(4.08E-04)†	6.57E-01(3.72E-04)†	7.24E-01(6.48E-06)
	25	7.21E-01(2.31E-05)†	6.77E-01(6.22E-06)†	7.20E-01(4.59E-06)†	3.97E-01(1.31E-05)†	7.39E-01(6.00E-07)†	7.43E-01(5.72E-08)
	50	7.26E-01(4.23E-06)†	6.89E-01(4.59E-06)†	7.24E-01(3.81E-06)†	4.08E-01(7.91E-06)†	7.43E-01(5.44E-08)†	7.44E-01(1.58E-08)
	200	7.29E-01(3.13E-06)†	7.07E-01(2.71E-06)†	7.29E-01(1.99E-06)†	4.23E-01(1.35E-06)†	7.45E-01(1.45E-09)†	7.45E-01(7.52E-10)
WFG5	5	6.59E-01(1.81E-03)†	6.17E-01(8.19E-05)†	6.45E-01(1.17E-04)†	6.00E-01(2.29E-05)†	6.89E-01(1.11E-04)†	6.97E-01(5.40E-05)
	25	6.99E-01(1.20E-05)†	6.76E-01(8.84E-06)†	6.89E-01(2.75E-05)†	6.21E-01(2.75E-06)†	7.26E-01(2.45E-07)†	7.27E-01(2.33E-06)
	50	7.00E-01(1.39E-05)†	6.84E-01(2.89E-06)†	6.96E-01(2.72E-05)†	6.22E-01(2.32E-06)†	7.27E-01(7.95E-09)†	7.28E-01(7.24E-09)
	200	7.02E-01(5.06E-06)†	6.95E-01(1.59E-05)†	6.99E-01(1.10E-05)†	6.23E-01(4.77E-06)†	7.28E-01(4.66E-09)	7.28E-01(4.09E-09)
WFG6	5	5.27E-01(5.13E-04)†	5.49E-01(2.54E-04)†	6.20E-01(2.36E-04)†	1.82E-01(3.73E-06)†	5.95E-01(2.59E-04)†	7.06E-01(2.55E-04)
	25	6.58E-01(1.00E-03)†	6.81E-01(1.35E-05)†	7.16E-01(1.19E-05)†	1.95E-01(1.63E-06)†	7.35E-01(3.36E-06)†	7.41E-01(3.36E-07)
	50	7.24E-01(6.78E-06)†	6.99E-01(3.74E-06)†	7.24E-01(5.63E-06)†	1.96E-01(8.68E-08)†	7.42E-01(1.64E-07)†	7.44E-01(7.60E-08)
	200	7.30E-01(6.69E-06)†	7.19E-01(1.49E-06)†	7.29E-01(4.79E-06)†	1.97E-01(4.08E-08)†	7.45E-01(4.67E-08)	7.45E-01(1.24E-07)
WFG7	5	6.79E-01(1.01E-04)†	4.38E-01(7.22E-04)†	6.72E-01(7.44E-05)†	5.46E-01(2.12E-04)†	6.69E-01(1.62E-04)†	7.25E-01(1.86E-05)
	25	7.31E-01(3.31E-06)†	6.34E-01(2.18E-04)†	7.30E-01(1.97E-06)†	6.91E-01(7.14E-06)†	7.41E-01(1.74E-07)†	7.43E-01(6.56E-08)
	50	7.35E-01(1.35E-06)†	6.77E-01(3.19E-05)†	7.35E-01(1.11E-06)†	7.10E-01(2.68E-06)†	7.44E-01(1.62E-08)†	7.45E-01(7.56E-09)
	200	7.36E-01(1.17E-06)†	7.12E-01(3.16E-06)†	7.36E-01(1.30E-06)†	7.24E-01(2.57E-06)†	7.45E-01(3.87E-10)†	7.45E-01(1.98E-10)
WFG8	5	6.78E-01(1.11E-04)†	4.49E-01(5.97E-04)†	6.71E-01(4.75E-05)†	5.37E-01(1.69E-04)†	6.74E-01(1.25E-04)†	7.23E-01(6.75E-05)
	25	7.31E-01(3.31E-06)†	6.34E-01(2.18E-04)†	7.30E-01(1.97E-06)†	6.92E-01(1.24E-05)†	7.41E-01(2.09E-07)†	7.43E-01(4.08E-08)
	50	7.35E-01(1.01E-06)†	6.77E-01(1.99E-05)†	7.35E-01(8.33E-07)†	7.10E-01(5.85E-06)†	7.44E-01(2.68E-08)†	7.45E-01(7.97E-09)
	200	7.35E-01(6.90E-07)†	7.13E-01(3.96E-06)†	7.35E-01(1.45E-06)†	7.25E-01(1.37E-06)†	7.45E-01(3.50E-10)†	7.45E-01(4.01E-10)
WFG9	5	6.89E-01(1.02E-04)‡	4.29E-01(5.71E-04)†	6.54E-01(7.08E-04)‡	6.08E-01(1.78E-04)‡	5.51E-01(8.06E-03)†	5.78E-01(7.18E-03)
	25	7.31E-01(3.31E-06)‡	6.34E-01(2.18E-04)†	7.30E-01(1.97E-06)‡	7.00E-01(4.26E-06)‡	6.55E-01(8.14E-03)‡	6.45E-01(8.21E-03)
	50	7.28E-01(5.82E-06)‡	6.84E-01(4.77E-03)‡	7.27E-01(4.76E-06)‡	7.07E-01(7.83E-06)‡	6.18E-01(7.00E-03)†	6.34E-01(8.10E-03)
	200	7.32E-01(4.40E-06)‡	7.09E-01(3.30E-03)‡	7.31E-01(4.54E-06)‡	7.12E-01(8.72E-06)‡	6.24E-01(7.81E-03)‡	6.09E-01(7.34E-03)

TABLE 114
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 3 TO 4 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	0.00E+00(0.00E+00)†	3.88E-01(4.58E-02)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	2.91E-02(9.15E-03)†	2.51E-01(1.07E-01)
	25	1.34E-01(6.56E-02)†	1.00E+00(1.01E-09)‡	4.90E-02(1.93E-02)†	0.00E+00(0.00E+00)†	9.84E-01(5.28E-04)†	9.96E-01(3.74E-05)
	50	9.39E-01(5.95E-03)†	1.00E+00(7.27E-11)‡	9.78E-01(1.76E-03)†	0.00E+00(0.00E+00)†	9.99E-01(6.97E-07)†	1.00E+00(5.16E-09)
	200	9.99E-01(4.44E-08)†	1.00E+00(3.58E-12)	9.99E-01(1.46E-08)†	0.00E+00(0.00E+00)†	1.00E+00(1.91E-08)†	1.00E+00(4.10E-10)
F2	5	8.84E-01(5.01E-04)†	9.52E-01(1.42E-05)†	9.49E-01(3.03E-05)†	5.42E-01(5.70E-02)†	9.58E-01(2.03E-05)†	9.71E-01(5.60E-05)
	25	9.49E-01(6.35E-05)†	9.69E-01(1.94E-07)†	9.67E-01(4.35E-06)†	2.84E-01(6.16E-02)†	9.74E-01(3.18E-08)†	9.74E-01(6.91E-09)
	50	9.65E-01(9.15E-06)†	9.71E-01(9.46E-08)†	9.68E-01(1.28E-06)†	0.00E+00(0.00E+00)†	9.74E-01(9.36E-09)†	9.75E-01(3.88E-09)
	200	9.68E-01(2.09E-06)†	9.74E-01(1.01E-08)†	9.68E-01(2.35E-06)†	0.00E+00(0.00E+00)†	9.75E-01(5.61E-10)†	9.75E-01(5.88E-10)
F3	5	0.00E+00(0.00E+00)†	4.71E-02(7.14E-03)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	7.14E-02(4.86E-02)
	25	0.00E+00(0.00E+00)†	9.65E-01(8.50E-07)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	7.16E-01(8.44E-02)†	8.53E-01(5.08E-02)
	50	8.15E-01(5.64E-02)†	9.70E-01(3.65E-07)†	7.84E-01(7.31E-02)†	0.00E+00(0.00E+00)†	9.70E-01(1.61E-05)†	9.73E-01(6.90E-06)
	200	9.69E-01(1.65E-06)†	9.74E-01(4.61E-08)†	9.69E-01(2.64E-06)†	0.00E+00(0.00E+00)†	9.73E-01(7.65E-06)†	9.74E-01(4.92E-06)
F4	5	8.77E-01(9.65E-04)	9.32E-01(3.68E-04)	9.33E-01(3.07E-04)‡	9.15E-01(1.02E-03)	9.39E-01(1.30E-04)‡	8.82E-01(4.12E-03)
	25	9.41E-01(3.07E-04)‡	9.57E-01(3.86E-04)‡	9.67E-01(1.21E-04)‡	9.60E-01(1.26E-04)‡	9.74E-01(2.45E-08)‡	8.62E-01(4.46E-03)
	50	9.70E-01(5.41E-07)‡	9.71E-01(6.09E-05)‡	9.70E-01(3.85E-07)‡	9.67E-01(4.68E-07)‡	9.75E-01(9.64E-09)‡	8.49E-01(4.35E-03)
	200	9.70E-01(3.27E-07)‡	9.74E-01(2.22E-08)‡	9.70E-01(2.52E-07)‡	9.69E-01(6.94E-08)‡	9.75E-01(2.80E-10)‡	8.41E-01(4.07E-03)
WFG1	5	8.77E-01(2.58E-04)†	7.27E-01(4.58E-04)†	8.47E-01(2.08E-04)†	4.70E-01(5.83E-03)†	8.62E-01(2.23E-04)†	9.04E-01(1.20E-04)
	25	9.65E-01(1.29E-05)†	8.46E-01(4.99E-05)†	9.60E-01(1.72E-05)†	4.80E-01(9.07E-04)†	9.68E-01(1.16E-05)†	9.86E-01(2.48E-06)
	50	9.81E-01(3.23E-06)†	8.92E-01(6.38E-05)†	9.81E-01(1.80E-06)†	4.84E-01(7.37E-04)†	9.88E-01(7.74E-07)†	9.93E-01(1.66E-07)
	200	9.89E-01(4.03E-07)†	9.47E-01(2.31E-05)†	9.89E-01(2.41E-07)†	4.86E-01(8.84E-04)†	9.93E-01(6.09E-08)‡	9.93E-01(8.02E-08)
WFG2	5	9.24E-01(2.32E-04)†	8.67E-01(1.53E-04)†	9.55E-01(3.85E-05)†	2.54E-01(3.82E-07)†	9.55E-01(2.27E-05)†	9.84E-01(4.06E-06)
	25	9.85E-01(5.74E-06)†	9.51E-01(9.78E-06)†	9.89E-01(8.88E-07)†	2.56E-01(1.97E-08)†	9.93E-01(1.43E-07)†	9.94E-01(4.28E-08)
	50	9.90E-01(2.96E-07)†	9.64E-01(4.53E-06)†	9.90E-01(3.08E-07)†	2.56E-01(3.48E-10)†	9.95E-01(2.22E-08)†	9.95E-01(1.16E-08)
	200	9.91E-01(5.14E-07)†	9.79E-01(1.06E-06)†	9.91E-01(6.46E-07)†	2.56E-01(7.25E-11)†	9.95E-01(1.22E-09)	9.95E-01(1.00E-09)
WFG3	5	6.78E-01(8.03E-05)	6.33E-01(9.04E-05)†	6.68E-01(3.33E-05)†	2.59E-01(1.18E-05)†	6.48E-01(7.30E-05)†	6.78E-01(3.48E-05)
	25	6.97E-01(1.92E-06)†	7.05E-01(5.84E-06)	7.16E-01(3.32E-06)‡	2.67E-01(2.53E-08)†	7.03E-01(3.73E-06)‡	7.02E-01(4.89E-05)
	50	6.99E-01(1.17E-05)†	7.11E-01(1.34E-06)‡	7.19E-01(3.10E-06)‡	2.67E-01(9.43E-09)†	7.07E-01(1.40E-06)‡	7.06E-01(6.68E-06)
	200	7.21E-01(1.56E-06)‡	7.17E-01(5.79E-07)‡	7.20E-01(2.47E-06)‡	2.67E-01(2.81E-09)†	7.11E-01(9.09E-07)‡	7.09E-01(2.49E-06)
WFG4	5	5.97E-01(7.36E-04)†	6.67E-01(2.22E-04)†	6.79E-01(2.28E-04)†	3.16E-01(3.87E-04)†	7.00E-01(4.59E-04)†	8.16E-01(6.83E-06)
	25	7.74E-01(7.13E-05)†	7.48E-01(1.42E-05)†	7.71E-01(2.16E-05)†	3.62E-01(7.77E-05)†	8.32E-01(4.82E-07)†	8.35E-01(1.16E-07)
	50	7.86E-01(1.84E-05)†	7.65E-01(9.34E-06)†	7.78E-01(2.70E-05)†	3.73E-01(4.00E-05)†	8.36E-01(9.73E-08)†	8.36E-01(8.49E-08)
	200	7.93E-01(2.42E-05)†	7.92E-01(2.64E-06)†	7.89E-01(1.83E-05)†	3.77E-01(1.36E-05)†	8.38E-01(1.22E-08)	8.38E-01(1.02E-08)
WFG5	5	6.66E-01(3.12E-03)†	6.74E-01(1.63E-04)†	6.88E-01(1.35E-04)†	5.46E-01(4.59E-05)†	7.85E-01(5.92E-05)†	7.91E-01(3.38E-05)
	25	7.51E-01(1.15E-04)†	7.46E-01(2.67E-05)†	7.45E-01(2.37E-05)†	5.61E-01(9.80E-06)†	8.12E-01(2.86E-07)†	8.13E-01(1.22E-06)
	50	7.57E-01(1.99E-05)†	7.59E-01(6.60E-06)†	7.49E-01(4.59E-05)†	5.63E-01(7.60E-06)†	8.13E-01(1.95E-07)	8.13E-01(9.74E-08)
	200	7.61E-01(3.24E-05)†	7.76E-01(2.47E-06)†	7.58E-01(2.64E-05)†	5.62E-01(1.15E-05)†	8.14E-01(1.00E-07)	8.14E-01(1.05E-07)
WFG6	5	5.07E-01(1.01E-03)†	6.00E-01(2.40E-04)†	6.54E-01(2.96E-04)†	1.51E-01(5.58E-06)†	6.75E-01(3.10E-04)†	8.04E-01(6.48E-05)
	25	7.15E-01(1.06E-03)†	7.49E-01(2.32E-05)†	7.73E-01(7.83E-05)†	1.58E-01(7.27E-07)†	8.25E-01(3.20E-06)†	8.33E-01(4.96E-07)
	50	7.73E-01(7.73E-05)†	7.71E-01(6.73E-06)†	7.81E-01(3.35E-05)†	1.59E-01(2.83E-07)†	8.34E-01(2.59E-07)†	8.35E-01(4.03E-07)
	200	7.90E-01(1.97E-05)†	8.05E-01(1.75E-06)†	7.91E-01(2.01E-05)†	1.60E-01(4.51E-08)†	8.37E-01(4.84E-07)	8.38E-01(8.07E-07)
WFG7	5	7.32E-01(4.42E-04)†	5.03E-01(7.71E-04)†	7.28E-01(1.04E-04)†	5.74E-01(3.04E-04)†	7.62E-01(1.14E-04)†	8.22E-01(7.13E-06)
	25	8.00E-01(7.04E-06)†	6.96E-01(2.55E-04)†	7.97E-01(1.45E-05)†	7.26E-01(8.80E-05)†	8.34E-01(1.92E-07)†	8.36E-01(1.40E-07)
	50	8.01E-01(8.80E-06)†	7.48E-01(2.13E-05)†	8.00E-01(6.58E-06)†	7.48E-01(6.58E-05)†	8.36E-01(8.23E-08)†	8.37E-01(5.84E-08)
	200	8.01E-01(6.65E-06)†	7.97E-01(4.88E-06)†	8.02E-01(5.64E-06)†	7.71E-01(2.22E-05)†	8.39E-01(3.84E-09)†	8.39E-01(1.79E-09)
WFG8	5	7.25E-01(3.98E-04)†	5.15E-01(6.40E-04)†	7.30E-01(1.10E-04)†	5.62E-01(2.69E-04)†	7.70E-01(7.41E-05)†	8.20E-01(6.25E-05)
	25	8.00E-01(7.04E-06)†	6.96E-01(2.55E-04)†	7.97E-01(1.45E-05)†	7.27E-01(8.43E-05)†	8.34E-01(1.86E-07)†	8.36E-01(1.51E-07)
	50	8.02E-01(9.08E-06)†	7.46E-01(1.98E-05)†	8.01E-01(8.07E-06)†	7.46E-01(7.15E-05)†	8.36E-01(7.10E-08)†	8.37E-01(3.76E-08)
	200	8.01E-01(7.54E-06)†	7.97E-01(3.27E-06)†	8.02E-01(5.13E-06)†	7.69E-01(2.74E-05)†	8.39E-01(3.76E-09)†	8.39E-01(3.61E-09)
WFG9	5	7.58E-01(7.95E-05)‡	4.76E-01(1.53E-03)†	7.29E-01(3.47E-04)‡	6.69E-01(3.54E-04)‡	6.19E-01(1.33E-02)	6.41E-01(1.02E-02)
	25	8.00E-01(7.04E-06)	6.96E-01(2.55E-04)	7.97E-01(1.45E-05)	7.60E-01(4.27E-05)	7.28E-01(1.26E-02)	7.13E-01(1.29E-02)
	50	7.93E-01(1.60E-05)g	7.60E-01(7.03E-03)	7.92E-01(2.10E-05)	7.65E-01(6.80E-05)	6.78E-01(1.09E-02)	6.97E-01(1.31E-02)
	200	7.97E-01(2.21E-05)‡	7.91E-01(5.12E-03)‡	7.99E-01(1.59E-05)‡	7.57E-01(6.18E-05)‡	6.84E-01(1.25E-02)	6.64E-01(1.17E-02)

TABLE 115
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 4 TO 5 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	0.00E+00(0.00E+00)†	8.82E-01(5.21E-03)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	6.05E-01(8.47E-02)	5.69E-01(1.46E-01)
	25	3.49E-01(1.33E-01)†	1.00E+00(1.53E-09)	1.76E-01(8.31E-02)†	0.00E+00(0.00E+00)†	9.99E-01(2.91E-06)†	1.00E+00(3.27E-07)
	50	9.79E-01(1.29E-03)†	1.00E+00(6.68E-12)‡	9.89E-01(1.02E-03)†	0.00E+00(0.00E+00)†	1.00E+00(1.09E-09)†	1.00E+00(1.45E-10)
	200	9.06E-01(5.91E-02)†	1.00E+00(2.45E-13)	3.81E-01(1.54E-01)†	0.00E+00(0.00E+00)†	1.00E+00(2.90E-10)†	1.00E+00(1.32E-10)
F2	5	9.10E-01(3.15E-04)†	9.71E-01(2.33E-05)†	9.64E-01(2.31E-05)†	2.59E-01(4.02E-02)†	9.78E-01(8.23E-06)†	9.88E-01(1.03E-05)
	25	9.68E-01(2.22E-05)†	9.87E-01(1.42E-07)†	9.82E-01(2.48E-06)†	0.00E+00(0.00E+00)†	9.90E-01(9.04E-09)†	9.90E-01(7.94E-08)
	50	9.80E-01(3.00E-06)†	9.88E-01(5.91E-08)†	9.81E-01(3.25E-06)†	0.00E+00(0.00E+00)†	9.90E-01(5.10E-09)†	9.91E-01(2.81E-09)
	200	9.76E-01(6.25E-06)†	9.90E-01(6.31E-09)†	9.73E-01(1.76E-05)†	0.00E+00(0.00E+00)†	9.91E-01(5.69E-10)	9.91E-01(4.93E-10)
F3	5	0.00E+00(0.00E+00)†	4.15E-01(3.53E-02)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	1.83E-02(5.10E-03)†	2.13E-01(1.21E-01)
	25	1.69E-03(8.87E-05)†	9.85E-01(4.67E-07)‡	5.16E-04(3.17E-06)†	0.00E+00(0.00E+00)†	9.57E-01(5.13E-03)	9.21E-01(3.51E-02)
	50	9.63E-01(9.34E-05)†	9.87E-01(1.49E-07)†	9.61E-01(2.02E-04)†	0.00E+00(0.00E+00)†	9.88E-01(3.08E-06)†	9.90E-01(2.43E-06)
	200	5.75E-01(1.18E-01)†	9.89E-01(1.58E-08)†	2.82E-01(1.29E-01)†	0.00E+00(0.00E+00)†	9.89E-01(3.69E-06)†	9.90E-01(6.70E-07)
F4	5	9.37E-01(3.88E-04)‡	9.54E-01(4.42E-04)‡	9.53E-01(3.11E-04)‡	9.57E-01(1.24E-04)‡	9.70E-01(7.11E-05)‡	9.02E-01(4.51E-03)
	25	9.82E-01(2.38E-05)‡	9.86E-01(3.83E-05)‡	9.81E-01(4.67E-06)‡	9.80E-01(6.07E-05)‡	9.90E-01(2.42E-08)‡	8.92E-01(4.08E-03)
	50	9.83E-01(1.96E-06)‡	9.89E-01(7.70E-06)‡	9.72E-01(2.15E-05)‡	9.84E-01(1.19E-05)‡	9.91E-01(2.52E-09)‡	8.88E-01(3.66E-03)
	200	9.56E-01(9.33E-05)‡	9.90E-01(6.04E-09)‡	9.43E-01(1.36E-04)‡	9.86E-01(3.20E-08)‡	9.91E-01(1.94E-10)‡	8.81E-01(6.15E-03)
WFG1	5	9.24E-01(3.53E-04)†	7.43E-01(4.53E-04)†	8.90E-01(3.41E-04)†	2.94E-01(7.68E-03)†	9.04E-01(2.62E-04)†	9.40E-01(4.89E-05)
	25	9.77E-01(5.12E-06)†	8.57E-01(1.24E-04)†	9.73E-01(8.04E-06)†	3.85E-01(3.38E-03)†	9.81E-01(3.81E-06)†	9.93E-01(1.62E-06)
	50	9.88E-01(2.93E-06)†	8.97E-01(6.15E-05)†	9.87E-01(1.49E-06)†	3.44E-01(4.15E-03)†	9.93E-01(3.96E-07)†	9.96E-01(1.53E-07)
	200	9.94E-01(2.36E-07)†	9.44E-01(4.00E-05)†	9.94E-01(1.76E-07)†	2.94E-01(1.58E-03)†	9.97E-01(7.43E-08)‡	9.96E-01(1.02E-07)
WFG2	5	9.51E-01(8.83E-05)†	8.73E-01(1.82E-04)†	9.69E-01(2.12E-05)†	2.11E-01(3.56E-07)†	9.71E-01(1.26E-05)†	9.90E-01(5.13E-06)
	25	9.93E-01(7.88E-07)†	9.56E-01(1.73E-05)†	9.94E-01(8.58E-07)†	2.12E-01(6.23E-08)†	9.98E-01(6.22E-08)†	9.99E-01(1.62E-08)
	50	9.95E-01(2.70E-07)†	9.70E-01(7.30E-06)†	9.95E-01(3.53E-07)†	2.12E-01(2.67E-08)†	9.99E-01(2.90E-09)†	9.99E-01(2.23E-09)
	200	9.96E-01(4.25E-07)†	9.83E-01(1.09E-06)†	9.95E-01(7.40E-07)†	2.11E-01(6.04E-08)†	9.99E-01(1.12E-10)	9.99E-01(7.63E-11)
WFG3	5	6.72E-01(5.35E-05)‡	5.97E-01(2.52E-04)†	6.58E-01(7.61E-05)†	2.15E-01(1.29E-05)†	6.40E-01(1.14E-04)†	6.68E-01(6.24E-05)
	25	6.82E-01(5.58E-05)†	6.81E-01(2.25E-05)†	7.10E-01(5.39E-06)‡	2.19E-01(1.13E-07)†	6.88E-01(7.53E-06)	6.89E-01(2.49E-05)
	50	6.98E-01(1.62E-04)‡	6.91E-01(7.21E-06)	7.10E-01(9.63E-06)‡	2.20E-01(1.60E-07)†	6.91E-01(7.39E-06)	6.91E-01(2.13E-05)
	200	7.12E-01(6.80E-06)‡	7.01E-01(4.36E-06)‡	7.12E-01(4.89E-06)‡	2.21E-01(2.64E-08)†	6.92E-01(1.44E-05)	6.90E-01(1.79E-05)
WFG4	5	6.23E-01(7.59E-04)†	6.65E-01(3.57E-04)†	6.85E-01(2.58E-04)†	2.93E-01(3.48E-04)†	7.40E-01(2.59E-04)†	8.65E-01(1.24E-05)
	25	7.92E-01(1.50E-04)†	7.55E-01(9.99E-05)†	7.70E-01(7.44E-05)†	3.46E-01(9.68E-05)†	8.86E-01(1.44E-06)†	8.89E-01(3.35E-07)
	50	8.00E-01(9.51E-05)†	7.81E-01(5.51E-05)†	7.82E-01(1.09E-04)†	3.55E-01(1.09E-04)†	8.90E-01(2.91E-07)	8.90E-01(3.31E-07)
	200	8.15E-01(4.61E-05)†	8.25E-01(1.03E-05)†	8.05E-01(9.95E-05)†	3.39E-01(9.15E-06)†	8.91E-01(6.49E-08)‡	8.91E-01(1.18E-07)
WFG5	5	6.66E-01(2.29E-03)†	6.79E-01(3.87E-04)†	6.91E-01(2.32E-04)†	5.06E-01(3.09E-05)†	8.37E-01(5.21E-05)	8.39E-01(1.86E-05)
	25	7.60E-01(1.94E-04)†	7.57E-01(4.36E-05)†	7.50E-01(7.22E-05)†	5.08E-01(2.42E-05)†	8.60E-01(5.01E-07)	8.61E-01(1.99E-06)
	50	7.73E-01(5.83E-05)†	7.78E-01(2.26E-05)†	7.59E-01(6.64E-05)†	5.06E-01(1.50E-05)†	8.61E-01(3.30E-07)	8.61E-01(5.01E-07)
	200	7.77E-01(1.08E-04)†	8.05E-01(7.52E-06)†	7.72E-01(1.03E-04)†	5.04E-01(1.60E-05)†	8.62E-01(2.40E-07)	8.62E-01(1.02E-07)
WFG6	5	5.07E-01(1.06E-03)†	5.69E-01(4.97E-04)†	6.63E-01(3.36E-04)†	1.28E-01(8.25E-06)†	7.19E-01(2.59E-04)†	8.52E-01(2.98E-04)
	25	7.32E-01(4.04E-04)†	7.40E-01(1.14E-04)†	7.84E-01(7.02E-05)†	1.32E-01(1.04E-06)†	8.77E-01(2.75E-05)†	8.88E-01(7.52E-07)
	50	7.81E-01(1.01E-04)†	7.79E-01(8.50E-05)†	7.92E-01(7.06E-05)†	1.32E-01(1.99E-07)†	8.88E-01(4.57E-07)†	8.90E-01(3.55E-07)
	200	8.07E-01(7.49E-05)†	8.34E-01(1.07E-05)†	8.06E-01(9.23E-05)†	1.33E-01(4.00E-08)†	8.90E-01(3.17E-07)	8.90E-01(3.46E-07)
WFG7	5	7.69E-01(2.71E-04)†	4.97E-01(2.24E-03)†	7.53E-01(1.75E-04)†	5.78E-01(4.69E-04)†	8.20E-01(1.05E-04)†	8.79E-01(1.87E-05)
	25	8.15E-01(9.33E-05)†	7.03E-01(2.63E-04)†	8.14E-01(6.10E-05)†	7.62E-01(1.37E-04)†	8.89E-01(3.96E-07)†	8.91E-01(2.16E-07)
	50	8.21E-01(4.20E-05)†	7.61E-01(9.07E-05)†	8.20E-01(2.55E-05)†	7.76E-01(1.32E-04)†	8.91E-01(1.42E-07)†	8.91E-01(7.51E-08)
	200	8.26E-01(1.17E-05)†	8.28E-01(2.73E-05)†	8.29E-01(1.44E-05)†	8.14E-01(2.78E-05)†	8.92E-01(2.66E-08)†	8.92E-01(2.17E-08)
WFG8	5	7.72E-01(2.63E-04)†	4.97E-01(1.31E-03)†	7.51E-01(1.64E-04)†	5.70E-01(6.02E-04)†	8.24E-01(8.62E-05)†	8.77E-01(5.19E-05)
	25	8.15E-01(9.33E-05)†	7.03E-01(2.63E-04)†	8.14E-01(6.10E-05)†	7.56E-01(1.32E-04)†	8.89E-01(4.97E-07)†	8.90E-01(2.01E-07)
	50	8.21E-01(5.50E-05)†	7.62E-01(7.52E-05)†	8.20E-01(4.36E-05)†	7.75E-01(9.07E-05)†	8.91E-01(1.94E-07)†	8.91E-01(1.40E-07)
	200	8.27E-01(1.26E-05)†	8.27E-01(2.36E-05)†	8.28E-01(1.11E-05)†	8.13E-01(3.31E-05)†	8.92E-01(1.85E-08)	8.92E-01(3.22E-08)
WFG9	5	7.85E-01(1.43E-04)‡	4.26E-01(6.93E-03)†	7.53E-01(4.09E-04)‡	6.72E-01(8.71E-04)‡	6.49E-01(2.14E-02)	6.64E-01(1.36E-02)
	25	8.15E-01(9.33E-05)	7.03E-01(2.63E-04)	8.14E-01(6.10E-05)	7.95E-01(1.22E-04)	7.61E-01(1.85E-02)	7.41E-01(1.90E-02)
	50	8.09E-01(5.27E-05)	7.72E-01(1.05E-02)	8.08E-01(7.90E-05)	8.07E-01(7.28E-05)	7.00E-01(1.60E-02)	7.22E-01(1.92E-02)
	200	8.17E-01(5.25E-05)‡	8.21E-01(7.50E-03)‡	8.23E-01(3.96E-05)‡	8.06E-01(1.90E-04)‡	7.06E-01(1.81E-02)	6.82E-01(1.68E-02)

TABLE 116
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 5 TO 6 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	0.00E+00(0.00E+00)†	9.79E-01(1.45E-04)	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	9.46E-01(2.34E-02)‡	8.45E-01(1.00E-01)
	25	3.97E-01(1.53E-01)†	1.00E+00(2.83E-10)	1.76E-01(9.15E-02)†	0.00E+00(0.00E+00)†	1.00E+00(9.36E-08)†	1.00E+00(9.11E-09)
	50	8.74E-01(6.93E-02)†	1.00E+00(1.01E-12)	8.95E-01(6.45E-02)†	0.00E+00(0.00E+00)†	1.00E+00(2.04E-10)†	1.00E+00(2.32E-11)
	200	6.79E-01(5.11E-02)†	1.00E+00(1.15E-31)‡	1.08E-01(4.73E-02)†	0.00E+00(0.00E+00)†	1.00E+00(6.59E-11)†	1.00E+00(5.23E-12)
F2	5	9.29E-01(2.55E-04)†	9.87E-01(3.25E-06)†	9.73E-01(9.51E-06)†	2.02E-01(3.10E-02)†	9.88E-01(3.08E-06)†	9.95E-01(2.17E-06)
	25	9.79E-01(1.29E-05)†	9.95E-01(3.80E-08)†	9.76E-01(1.87E-05)†	1.79E-02(3.59E-03)†	9.96E-01(4.22E-09)†	9.96E-01(5.89E-08)
	50	9.72E-01(2.68E-05)†	9.95E-01(1.67E-08)†	9.52E-01(9.11E-05)†	1.78E-02(4.87E-03)†	9.96E-01(2.04E-09)†	9.96E-01(2.03E-09)
	200	9.07E-01(6.58E-04)†	9.96E-01(1.22E-09)†	9.07E-01(7.58E-04)†	0.00E+00(0.00E+00)†	9.96E-01(3.06E-10)†	9.96E-01(3.58E-10)
F3	5	0.00E+00(0.00E+00)†	8.47E-01(4.54E-03)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	4.14E-01(1.49E-01)	4.28E-01(1.47E-01)
	25	4.35E-02(2.32E-02)†	9.94E-01(8.66E-08)‡	7.63E-02(5.17E-02)†	0.00E+00(0.00E+00)†	9.82E-01(2.04E-03)	9.88E-01(1.36E-01)
	50	9.44E-01(2.78E-03)†	9.95E-01(1.47E-08)†	9.14E-01(3.37E-02)†	0.00E+00(0.00E+00)†	9.95E-01(1.81E-06)†	9.96E-01(1.90E-06)
	200	5.99E-02(1.80E-02)†	9.96E-01(3.23E-09)†	7.10E-02(2.12E-02)†	0.00E+00(0.00E+00)†	9.95E-01(8.40E-07)†	9.96E-01(4.26E-07)
F4	5	9.67E-01(1.18E-04)‡	9.78E-01(7.47E-05)‡	9.78E-01(3.45E-05)‡	9.71E-01(1.00E-04)‡	9.87E-01(1.05E-05)‡	9.36E-01(2.11E-03)
	25	9.88E-01(8.74E-06)‡	9.95E-01(4.27E-06)‡	9.57E-01(8.87E-05)‡	9.89E-01(1.12E-05)‡	9.96E-01(2.73E-06)‡	9.18E-01(2.34E-03)
	50	9.51E-01(2.44E-04)‡	9.96E-01(9.54E-07)‡	8.64E-01(4.93E-04)†	9.92E-01(2.56E-06)‡	9.96E-01(6.94E-10)‡	9.19E-01(1.72E-03)
	200	6.96E-01(1.13E-03)†	9.96E-01(4.40E-10)‡	6.77E-01(7.38E-04)†	9.94E-01(2.46E-06)‡	9.97E-01(5.99E-11)‡	9.18E-01(5.11E-03)
WFG1	5	9.64E-01(9.29E-05)	7.80E-01(4.14E-04)†	9.41E-01(1.96E-04)†	3.23E-01(1.74E-02)†	9.51E-01(1.38E-04)†	9.67E-01(3.86E-05)
	25	9.84E-01(3.90E-06)†	8.84E-01(9.91E-05)†	9.81E-01(4.00E-06)†	3.97E-01(2.18E-02)†	9.88E-01(2.36E-06)†	9.95E-01(4.20E-07)
	50	9.90E-01(2.29E-06)†	9.10E-01(6.65E-05)†	9.89E-01(1.65E-06)†	3.05E-01(2.61E-02)†	9.95E-01(2.72E-07)†	9.97E-01(1.94E-07)
	200	9.95E-01(2.14E-07)†	9.46E-01(3.76E-05)†	9.95E-01(2.03E-07)†	2.58E-01(2.42E-02)†	9.97E-01(6.25E-08)‡	9.97E-01(1.58E-07)
WFG2	5	9.66E-01(2.71E-05)†	9.08E-01(1.01E-04)†	9.79E-01(1.57E-05)†	2.09E-01(1.56E-07)†	9.82E-01(1.35E-05)†	9.93E-01(6.56E-06)
	25	9.95E-01(6.88E-07)†	9.69E-01(1.20E-05)†	9.96E-01(5.33E-07)†	2.09E-01(3.31E-09)†	9.99E-01(3.13E-08)†	1.00E+00(1.82E-08)
	50	9.97E-01(2.53E-07)†	9.79E-01(3.79E-06)†	9.97E-01(2.57E-07)†	2.09E-01(6.80E-10)†	1.00E+00(4.85E-10)†	1.00E+00(3.18E-10)
	200	9.98E-01(1.86E-07)†	9.89E-01(6.52E-07)†	9.98E-01(2.22E-07)†	2.09E-01(6.35E-10)†	1.00E+00(7.93E-12)†	1.00E+00(4.60E-12)
WFG3	5	6.74E-01(4.97E-05)‡	5.90E-01(1.77E-04)†	6.58E-01(7.45E-05)†	2.15E-01(1.36E-06)†	6.45E-01(1.88E-04)†	6.68E-01(7.59E-05)
	25	6.84E-01(1.86E-04)	6.68E-01(2.69E-05)†	7.02E-01(1.29E-05)‡	2.18E-01(4.01E-08)†	6.81E-01(1.51E-05)†	6.85E-01(2.68E-05)
	50	7.03E-01(6.88E-05)‡	6.81E-01(1.75E-05)†	7.04E-01(1.59E-05)‡	2.19E-01(3.45E-08)†	6.80E-01(2.16E-05)†	6.85E-01(1.77E-05)
	200	7.07E-01(1.47E-05)‡	6.92E-01(4.45E-06)‡	7.06E-01(2.24E-05)‡	2.19E-01(6.85E-09)†	6.84E-01(1.92E-05)	6.85E-01(1.95E-05)
WFG4	5	6.44E-01(4.91E-04)†	6.47E-01(4.37E-04)†	6.78E-01(2.71E-04)†	2.78E-01(3.44E-04)†	7.64E-01(1.81E-04)†	8.91E-01(1.58E-04)
	25	7.81E-01(1.18E-04)†	7.42E-01(1.77E-04)†	7.42E-01(2.08E-04)†	3.30E-01(9.22E-05)†	9.19E-01(2.80E-06)†	9.23E-01(4.56E-07)
	50	7.84E-01(1.32E-04)†	7.75E-01(1.68E-04)†	7.43E-01(3.67E-04)†	3.23E-01(2.64E-04)†	9.25E-01(4.35E-07)†	9.25E-01(3.30E-07)
	200	8.05E-01(3.43E-04)†	8.23E-01(7.76E-05)†	7.86E-01(5.14E-04)†	3.03E-01(1.04E-05)†	9.23E-01(1.35E-07)	9.23E-01(2.20E-07)
WFG5	5	6.72E-01(1.56E-03)†	6.64E-01(3.12E-04)†	6.73E-01(2.30E-04)†	4.70E-01(4.89E-05)†	8.65E-01(2.41E-05)‡	8.63E-01(1.77E-05)
	25	7.51E-01(2.37E-04)†	7.34E-01(1.06E-04)†	7.23E-01(1.71E-04)†	4.74E-01(2.01E-05)†	8.86E-01(4.75E-07)	8.86E-01(3.01E-06)
	50	7.53E-01(1.97E-04)†	7.55E-01(6.44E-05)†	7.34E-01(2.46E-04)†	4.66E-01(1.73E-05)†	8.87E-01(4.29E-07)†	8.87E-01(3.07E-07)
	200	7.57E-01(2.21E-04)†	7.94E-01(2.70E-05)†	7.51E-01(2.12E-04)†	4.65E-01(9.42E-06)†	8.87E-01(2.44E-07)†	8.87E-01(3.37E-07)
WFG6	5	5.14E-01(8.26E-04)†	5.60E-01(7.86E-04)†	6.56E-01(3.43E-04)†	1.07E-01(1.31E-05)†	7.42E-01(2.87E-04)†	8.86E-01(8.40E-05)
	25	7.33E-01(1.73E-04)†	7.14E-01(2.39E-04)†	7.63E-01(1.43E-04)†	1.11E-01(1.98E-07)†	9.11E-01(1.61E-05)†	9.23E-01(1.08E-06)
	50	7.67E-01(2.21E-04)†	7.49E-01(1.79E-04)†	7.77E-01(2.77E-04)†	1.11E-01(9.20E-08)†	9.23E-01(8.43E-07)†	9.25E-01(3.63E-07)
	200	7.96E-01(2.17E-04)†	8.16E-01(1.84E-04)†	7.98E-01(1.31E-04)†	1.11E-01(1.55E-08)†	9.23E-01(8.24E-07)†	9.24E-01(1.24E-06)
WFG7	5	7.94E-01(1.42E-04)†	5.39E-01(2.78E-03)†	7.52E-01(3.77E-04)†	5.96E-01(7.78E-04)†	8.63E-01(9.02E-05)†	9.15E-01(7.87E-06)
	25	8.14E-01(2.49E-04)†	7.34E-01(1.71E-04)†	8.06E-01(1.57E-04)†	7.60E-01(3.56E-04)†	9.25E-01(3.47E-07)	9.26E-01(1.55E-07)
	50	8.26E-01(7.50E-05)†	7.84E-01(1.10E-04)†	8.17E-01(1.78E-04)†	8.04E-01(3.53E-04)†	9.24E-01(3.42E-07)	9.24E-01(2.16E-07)
	200	8.38E-01(3.78E-05)†	8.41E-01(5.30E-05)†	8.41E-01(3.07E-05)†	8.43E-01(7.05E-05)†	9.24E-01(3.09E-08)†	9.24E-01(4.16E-08)
WFG8	5	7.86E-01(3.27E-04)†	5.32E-01(1.96E-03)†	7.52E-01(2.90E-04)†	5.87E-01(8.21E-04)†	8.64E-01(9.06E-05)†	9.15E-01(1.12E-05)
	25	8.14E-01(2.49E-04)†	7.34E-01(1.71E-04)†	8.06E-01(1.57E-04)†	7.58E-01(3.19E-04)†	9.25E-01(5.74E-07)	9.26E-01(2.98E-07)
	50	8.29E-01(5.66E-05)†	7.82E-01(1.01E-04)†	8.21E-01(1.18E-04)†	8.05E-01(1.49E-04)†	9.24E-01(2.39E-07)	9.24E-01(2.66E-07)
	200	8.40E-01(2.91E-05)†	8.45E-01(5.08E-05)†	8.40E-01(3.08E-05)†	8.46E-01(2.43E-05)†	9.24E-01(2.07E-08)†	9.24E-01(3.55E-08)
WFG9	5	7.88E-01(1.53E-04)‡	3.69E-01(1.73E-02)†	7.49E-01(3.66E-04)‡	6.43E-01(1.27E-03)	6.56E-01(2.99E-02)	6.63E-01(1.89E-02)
	25	8.14E-01(2.49E-04)	7.34E-01(1.71E-04)	8.06E-01(1.57E-04)	8.02E-01(1.24E-04)	7.72E-01(2.66E-02)	7.47E-01(2.75E-02)
	50	7.94E-01(1.60E-04)	7.50E-01(1.53E-02)	8.09E-01(2.21E-04)	8.16E-01(1.99E-04)	6.96E-01(2.30E-02)	7.23E-01(2.75E-02)
	200	8.23E-01(1.33E-04)‡	8.16E-01(9.53E-03)‡	8.38E-01(2.86E-05)‡	8.19E-01(2.01E-04)‡	7.03E-01(2.58E-02)	6.75E-01(2.39E-02)

TABLE 117
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 6 TO 7 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	0.00E+00(0.00E+00)†	9.90E-01(4.07E-05)‡	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	1.00E+00(2.12E-09)‡	9.24E-01(2.28E-01)
	25	3.87E-01(1.65E-01)†	1.00E+00(1.02E-10)†	9.51E-02(6.98E-02)†	0.00E+00(0.00E+00)†	1.00E+00(1.67E-09)†	1.00E+00(2.45E-01)
	50	6.53E-01(1.54E-01)†	1.00E+00(3.33E-13)	3.14E-01(8.73E-02)†	0.00E+00(0.00E+00)†	1.00E+00(1.44E-10)†	1.00E+00(1.52E-11)
	200	6.78E-01(5.09E-02)†	1.00E+00(0.00E+00)‡	2.08E-03(1.34E-04)†	0.00E+00(0.00E+00)†	1.00E+00(1.24E-10)†	1.00E+00(3.23E-12)
F2	5	9.40E-01(1.75E-04)†	9.93E-01(1.79E-06)†	9.76E-01(1.17E-05)†	1.33E-01(2.46E-02)†	9.93E-01(8.80E-07)†	9.98E-01(8.78E-07)
	25	9.72E-01(5.28E-05)†	9.98E-01(6.92E-09)†	9.44E-01(2.09E-04)†	4.87E-03(3.88E-04)†	9.98E-01(2.87E-09)†	9.99E-01(7.82E-08)
	50	9.24E-01(2.16E-04)†	9.98E-01(2.51E-09)†	8.99E-01(3.14E-04)†	4.94E-02(2.07E-02)†	9.99E-01(3.00E-10)†	9.99E-01(2.33E-10)
	200	8.89E-01(8.95E-04)†	9.98E-01(2.82E-10)†	8.74E-01(9.27E-04)†	1.38E-02(5.88E-03)†	9.99E-01(2.24E-10)	9.99E-01(3.32E-10)
F3	5	0.00E+00(0.00E+00)†	9.52E-01(4.26E-04)	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	9.91E-01(1.31E-05)‡	8.33E-01(1.98E-01)
	25	8.32E-02(6.36E-02)†	9.98E-01(4.31E-08)	1.08E-01(8.23E-02)†	0.00E+00(0.00E+00)†	9.95E-01(3.59E-06)†	9.97E-01(1.80E-01)
	50	6.03E-01(7.41E-02)†	9.98E-01(3.16E-09)†	4.21E-01(9.43E-02)†	0.00E+00(0.00E+00)†	9.97E-01(9.39E-07)†	9.98E-01(2.50E-07)
	200	6.34E-02(1.80E-02)†	9.98E-01(5.70E-10)†	0.00E+00(0.00E+00)†	0.00E+00(0.00E+00)†	9.98E-01(3.38E-07)†	9.98E-01(1.12E-07)
F4	5	9.81E-01(4.81E-05)‡	9.91E-01(2.21E-05)‡	9.89E-01(8.97E-06)‡	9.85E-01(6.24E-05)‡	9.94E-01(2.44E-06)‡	9.51E-01(3.08E-02)
	25	9.73E-01(1.09E-04)‡	9.98E-01(5.13E-07)‡	9.11E-01(1.63E-04)†	9.88E-01(2.04E-06)‡	9.99E-01(5.86E-09)‡	9.42E-01(1.62E-01)
	50	8.72E-01(4.44E-04)†	9.99E-01(1.45E-07)‡	8.39E-01(1.39E-04)†	9.87E-01(3.00E-06)‡	9.99E-01(2.05E-07)‡	9.45E-01(9.43E-04)
	200	8.19E-01(2.12E-04)†	9.99E-01(1.05E-10)‡	8.08E-01(1.26E-04)†	9.85E-01(1.85E-06)‡	9.99E-01(2.19E-11)‡	9.42E-01(2.97E-03)
WFG1	5	9.90E-01(4.33E-06)†	8.47E-01(5.69E-04)†	9.81E-01(9.83E-06)†	1.65E-01(1.49E-03)†	9.93E-01(1.48E-06)†	9.95E-01(1.57E-06)
	25	9.88E-01(2.95E-06)†	9.04E-01(5.67E-05)†	9.86E-01(2.40E-06)†	1.47E-01(1.58E-03)†	9.93E-01(6.94E-07)†	9.96E-01(2.41E-07)
	50	9.93E-01(1.04E-06)†	9.24E-01(4.79E-05)†	9.91E-01(1.38E-06)†	1.33E-01(9.72E-04)†	9.96E-01(2.56E-07)†	9.97E-01(2.33E-07)
	200	9.96E-01(2.02E-07)	9.49E-01(2.32E-05)†	9.97E-01(7.32E-08)	1.33E-01(9.63E-04)†	9.97E-01(1.15E-07)†	9.97E-01(1.95E-07)
WFG2	5	9.76E-01(1.59E-05)†	9.24E-01(5.83E-05)†	9.84E-01(9.84E-06)†	1.72E-01(5.29E-08)†	9.90E-01(7.47E-06)†	9.97E-01(1.63E-06)
	25	9.96E-01(8.37E-07)†	9.68E-01(2.00E-05)†	9.97E-01(8.01E-07)†	1.72E-01(4.90E-10)†	9.99E-01(2.32E-08)†	1.00E+00(6.30E-09)
	50	9.98E-01(3.54E-07)†	9.74E-01(1.13E-05)†	9.98E-01(1.57E-07)†	1.72E-01(3.25E-10)†	1.00E+00(5.09E-10)†	1.00E+00(3.16E-10)
	200	9.99E-01(6.79E-08)†	9.83E-01(7.04E-06)†	9.99E-01(6.06E-08)†	1.72E-01(2.14E-10)†	1.00E+00(1.94E-12)†	1.00E+00(1.27E-12)
WFG3	5	6.77E-01(4.46E-05)‡	5.40E-01(7.61E-04)†	6.58E-01(7.18E-05)	1.78E-01(4.19E-07)†	6.44E-01(1.58E-04)†	6.58E-01(1.88E-04)
	25	6.90E-01(1.19E-04)‡	6.39E-01(1.62E-04)†	6.95E-01(2.30E-05)‡	1.80E-01(1.95E-08)†	6.66E-01(2.34E-05)	6.64E-01(7.14E-05)
	50	7.00E-01(1.66E-05)‡	6.54E-01(7.54E-05)	6.99E-01(1.90E-05)‡	1.80E-01(9.33E-09)†	6.65E-01(5.10E-05)‡	6.56E-01(9.44E-05)
	200	7.00E-01(2.50E-05)‡	6.70E-01(1.47E-05)‡	6.99E-01(2.49E-05)‡	1.80E-01(1.66E-09)†	6.61E-01(7.51E-05)‡	6.46E-01(2.05E-04)
WFG4	5	6.59E-01(6.51E-04)†	6.27E-01(5.63E-04)†	6.61E-01(2.37E-04)†	2.63E-01(5.42E-04)†	7.78E-01(1.06E-04)†	9.09E-01(2.06E-04)
	25	7.50E-01(5.28E-04)†	6.92E-01(3.44E-04)†	6.93E-01(2.19E-04)†	3.01E-01(2.09E-04)†	9.29E-01(2.82E-04)†	9.44E-01(1.04E-06)
	50	7.34E-01(3.50E-04)†	7.37E-01(2.46E-04)†	6.89E-01(4.97E-04)†	2.78E-01(2.85E-04)†	9.47E-01(4.32E-06)	9.47E-01(4.03E-07)
	200	7.75E-01(9.90E-04)†	7.88E-01(2.26E-04)†	7.45E-01(1.05E-03)†	2.71E-01(9.94E-06)†	9.45E-01(6.10E-07)†	9.46E-01(4.18E-07)
WFG5	5	6.76E-01(1.10E-03)†	6.42E-01(4.72E-04)†	6.47E-01(2.60E-04)†	4.58E-01(2.58E-05)†	8.79E-01(1.00E-05)‡	8.73E-01(1.50E-05)
	25	7.21E-01(3.71E-04)†	6.80E-01(3.00E-04)†	6.80E-01(3.55E-04)†	4.52E-01(3.76E-05)†	8.96E-01(6.50E-07)‡	8.96E-01(4.46E-06)
	50	7.05E-01(2.83E-04)†	7.07E-01(1.59E-04)†	6.97E-01(3.77E-04)†	4.44E-01(1.69E-05)†	8.96E-01(5.03E-07)	8.96E-01(1.93E-06)
	200	7.31E-01(4.35E-04)†	7.59E-01(4.93E-05)†	7.12E-01(8.86E-04)†	4.37E-01(6.62E-06)†	8.95E-01(2.68E-07)	8.95E-01(9.80E-07)
WFG6	5	5.24E-01(6.67E-04)†	5.59E-01(1.25E-03)†	6.36E-01(4.40E-04)†	8.84E-02(1.33E-05)†	7.73E-01(2.63E-04)†	9.01E-01(9.71E-05)
	25	7.14E-01(2.06E-04)†	6.76E-01(2.73E-04)†	7.26E-01(2.97E-04)†	9.08E-02(1.54E-07)†	9.30E-01(2.07E-05)†	9.41E-01(3.62E-05)
	50	7.32E-01(4.59E-04)†	7.07E-01(3.69E-04)†	7.41E-01(6.24E-04)†	9.04E-02(3.18E-08)†	9.46E-01(1.39E-06)†	9.48E-01(3.03E-07)
	200	7.84E-01(4.45E-04)†	7.51E-01(2.08E-04)†	7.78E-01(3.22E-04)†	9.04E-02(1.71E-08)†	9.48E-01(7.60E-07)	9.48E-01(6.90E-07)
WFG7	5	7.98E-01(3.67E-04)†	5.79E-01(1.33E-03)†	7.41E-01(2.85E-04)†	5.99E-01(9.11E-04)†	9.01E-01(6.65E-05)†	9.28E-01(1.27E-04)
	25	8.02E-01(2.99E-04)†	7.20E-01(2.20E-04)†	7.96E-01(3.21E-04)†	7.70E-01(3.01E-04)†	9.48E-01(2.91E-07)	9.48E-01(2.56E-07)
	50	8.25E-01(2.11E-04)†	7.53E-01(2.16E-04)†	8.23E-01(1.17E-04)†	8.06E-01(3.91E-04)†	9.48E-01(1.93E-07)	9.49E-01(2.83E-07)
	200	8.49E-01(5.13E-05)†	8.14E-01(1.57E-04)†	8.46E-01(3.80E-05)†	8.45E-01(2.90E-04)†	9.48E-01(6.18E-08)	9.48E-01(8.22E-08)
WFG8	5	7.86E-01(4.81E-04)†	5.70E-01(2.72E-03)†	7.38E-01(5.87E-04)†	6.05E-01(1.43E-03)†	9.00E-01(4.53E-05)†	9.33E-01(9.15E-05)
	25	8.02E-01(2.99E-04)†	7.20E-01(2.20E-04)†	7.96E-01(3.21E-04)†	7.60E-01(3.80E-04)†	9.48E-01(3.69E-07)	9.48E-01(3.19E-07)
	50	8.24E-01(1.82E-04)†	7.59E-01(2.11E-04)†	8.21E-01(1.40E-04)†	8.03E-01(5.29E-04)†	9.48E-01(3.28E-07)†	9.49E-01(2.06E-07)
	200	8.50E-01(2.87E-05)†	8.12E-01(9.78E-05)†	8.50E-01(2.74E-05)†	8.45E-01(2.70E-04)†	9.48E-01(6.38E-08)†	9.48E-01(9.05E-08)
WFG9	5	7.68E-01(3.01E-04)‡	3.27E-01(2.74E-02)†	7.23E-01(5.81E-04)‡	6.28E-01(1.47E-03)†	6.48E-01(4.18E-02)	6.41E-01(2.65E-02)
	25	8.02E-01(2.99E-04)	7.20E-01(2.20E-04)	7.96E-01(3.21E-04)	8.02E-01(2.09E-04)	7.64E-01(3.79E-02)	7.35E-01(3.91E-02)
	50	7.78E-01(3.98E-04)	7.26E-01(1.55E-02)	8.05E-01(2.49E-04)	8.10E-01(1.75E-04)	6.79E-01(3.31E-02)	7.07E-01(3.93E-02)
	200	8.25E-01(3.52E-04)‡	7.87E-01(1.34E-02)‡	8.45E-01(8.00E-05)‡	8.01E-01(3.03E-04)‡	7.08E-01(3.74E-02)	6.61E-01(3.60E-02)

TABLE 118
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 7 TO 6 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	3.10E+02(5.91E+01)†	5.72E+00(7.19E+00)‡	2.96E+02(8.05E+01)†	9.20E+02(2.12E+03)†	1.65E+01(1.33E+01)†	1.51E+01(4.23E+00)
	25	3.08E+02(8.39E+01)†	4.77E+00(6.56E+00)†	3.14E+02(1.04E+02)†	1.02E+03(2.62E+03)†	4.29E+00(4.72E+00)†	2.65E+00(2.04E+00)
	50	3.08E+02(1.60E+02)†	4.57E+00(6.22E+00)†	3.13E+02(1.41E+02)†	1.08E+03(1.82E+03)†	9.11E-01(5.98E-01)†	4.06E-01(8.78E-02)
	200	3.06E+02(1.96E+02)†	4.56E+00(9.21E+00)†	3.10E+02(1.06E+02)†	1.17E+03(2.46E+03)†	1.16E-01(1.10E-01)	8.82E-02(2.01E-02)
F2	5	9.23E-01(1.88E-03)†	1.28E-01(2.05E-04)‡	8.42E-01(1.00E-03)†	4.80E+00(4.30E-02)†	1.57E-01(5.80E-05)	1.53E-01(6.03E-05)
	25	9.20E-01(2.85E-03)†	1.05E-01(1.42E-04)†	8.81E-01(2.56E-03)†	5.56E+00(1.04E-01)†	9.96E-02(6.89E-05)†	9.50E-02(3.80E-05)
	50	8.90E-01(6.09E-03)†	1.00E-01(1.14E-04)†	8.85E-01(2.71E-03)†	5.86E+00(1.03E-01)†	7.09E-02(1.12E-05)	6.95E-02(1.64E-05)
	200	8.54E-01(6.78E-03)†	8.13E-02(7.89E-05)†	8.98E-01(6.37E-03)†	5.80E+00(1.23E-01)†	5.54E-02(4.77E-06)	5.47E-02(3.57E-06)
F3	5	7.27E+02(4.61E+02)†	1.31E+01(6.35E+01)‡	7.11E+02(7.87E+02)†	7.53E+02(9.31E+02)†	4.25E+01(6.83E+01)	4.08E+01(5.70E+01)
	25	6.93E+02(5.87E+02)†	9.51E+00(6.27E+01)	7.06E+02(8.58E+02)†	8.37E+02(1.09E+03)†	1.42E+01(7.82E+01)†	8.43E+00(1.63E+01)
	50	6.90E+02(7.23E+02)†	1.07E+01(3.87E+01)†	6.94E+02(6.96E+02)†	8.67E+02(8.65E+02)†	4.95E+00(2.88E+01)†	1.49E+00(2.63E+00)
	200	6.88E+02(8.30E+02)†	9.34E+00(6.16E+01)†	6.85E+02(8.81E+02)†	9.00E+02(1.03E+03)†	4.81E-01(9.64E-01)†	1.24E-01(9.07E-03)
F4	5	1.15E+00(9.09E-05)†	7.49E-02(2.29E-04)‡	1.03E+00(8.06E-04)†	3.74E-02(4.63E-04)‡	1.85E-01(1.24E-04)	1.80E-01(1.16E-04)
	25	1.12E+00(5.03E-05)†	7.59E-02(1.17E-04)‡	1.07E+00(9.01E-04)†	1.47E-02(2.87E-04)‡	8.34E-02(9.18E-05)	8.52E-02(1.32E-04)
	50	1.12E+00(1.31E-04)†	7.78E-02(8.93E-05)†	1.08E+00(3.46E-04)†	1.43E-02(3.13E-04)‡	5.85E-02(1.06E-05)	5.84E-02(1.13E-05)
	200	1.10E+00(1.86E-04)†	7.52E-02(6.67E-05)†	1.10E+00(1.75E-04)†	9.99E-03(7.86E-05)‡	6.00E-02(2.79E-06)	6.06E-02(3.11E-06)
WFG1	5	6.48E-01(5.57E-04)†	3.88E-01(1.13E-03)‡	6.47E-01(1.16E-03)†	1.39E+00(6.60E-04)†	4.11E-01(1.64E-04)	4.09E-01(1.53E-04)
	25	5.71E-01(1.11E-03)†	3.25E-01(8.50E-04)‡	5.70E-01(1.56E-03)†	1.40E+00(5.83E-04)†	3.61E-01(9.50E-04)	3.59E-01(5.13E-04)
	50	5.11E-01(5.35E-04)†	3.15E-01(6.70E-04)‡	5.19E-01(8.63E-04)†	1.40E+00(5.64E-04)†	3.20E-01(3.91E-04)	3.20E-01(2.36E-04)
	200	5.03E-01(4.08E-04)†	3.12E-01(5.77E-04)†	5.07E-01(4.48E-04)†	1.40E+00(1.16E-04)†	3.07E-01(2.71E-04)†	2.97E-01(3.80E-04)
WFG2	5	1.34E+00(2.14E-02)†	3.67E-01(8.71E-04)‡	1.16E+00(6.23E-03)†	2.87E-01(9.15E-05)‡	6.73E-01(5.73E-04)†	6.46E-01(1.29E-03)
	25	1.18E+00(1.13E-02)†	3.74E-01(5.60E-04)‡	1.15E+00(7.85E-03)†	2.80E-01(2.96E-07)‡	6.62E-01(1.43E-03)	6.66E-01(8.66E-04)
	50	1.23E+00(1.02E-02)†	3.86E-01(7.21E-04)‡	1.27E+00(7.66E-03)†	2.80E-01(5.75E-07)‡	6.85E-01(9.20E-04)	6.88E-01(1.14E-03)
	200	1.27E+00(1.01E-02)†	4.03E-01(5.84E-04)‡	1.28E+00(6.49E-03)†	2.80E-01(8.31E-08)‡	6.07E-01(1.34E-04)	6.06E-01(1.10E-04)
WFG3	5	3.31E+00(1.32E-02)†	3.39E+00(1.85E-02)†	3.25E+00(7.19E-03)†	8.30E-01(2.68E-04)‡	2.89E+00(7.90E-03)‡	3.18E+00(1.08E-02)
	25	3.38E+00(3.63E-03)†	3.60E+00(1.12E-02)†	3.38E+00(3.44E-03)†	8.03E-01(1.32E-04)‡	2.95E+00(7.06E-03)‡	3.20E+00(8.25E-03)
	50	3.38E+00(5.93E-03)†	3.64E+00(1.21E-02)†	3.37E+00(4.38E-03)†	7.96E-01(3.85E-05)‡	3.00E+00(5.01E-03)‡	3.09E+00(4.40E-03)
	200	3.42E+00(5.89E-03)†	3.70E+00(1.11E-02)†	3.39E+00(3.80E-03)†	7.89E-01(2.34E-05)‡	2.95E+00(2.90E-03)	2.97E+00(2.47E-03)
WFG4	5	1.05E+00(1.29E-03)†	3.81E-01(1.53E-03)‡	1.09E+00(1.43E-03)†	3.05E-01(8.57E-04)†	4.49E-01(9.98E-05)	4.51E-01(1.62E-04)
	25	9.68E-01(8.48E-04)†	3.25E-01(2.37E-04)‡	9.99E-01(1.28E-03)†	2.97E-01(1.55E-03)†	3.94E-01(1.14E-04)	3.95E-01(1.10E-04)
	50	9.21E-01(4.77E-04)†	3.19E-01(1.42E-04)†	9.64E-01(7.87E-04)†	3.77E-01(2.02E-03)	3.75E-01(7.94E-05)	3.76E-01(8.42E-05)
	200	8.83E-01(6.32E-04)†	3.26E-01(1.53E-04)†	9.06E-01(6.49E-04)†	3.90E-01(4.58E-04)	4.03E-01(7.07E-05)	4.00E-01(6.59E-05)
WFG5	5	1.07E+00(1.67E-03)†	5.70E-01(6.41E-04)†	1.12E+00(1.16E-03)†	4.06E-02(8.71E-05)‡	5.10E-01(9.92E-05)†	5.03E-01(1.22E-04)
	25	9.77E-01(1.04E-03)†	4.62E-01(4.51E-04)†	9.98E-01(1.68E-03)†	3.02E-02(9.63E-05)‡	4.53E-01(8.18E-05)	4.51E-01(1.02E-04)
	50	9.26E-01(8.39E-04)†	4.23E-01(2.67E-04)‡	9.54E-01(8.57E-04)†	3.24E-02(9.89E-05)‡	4.42E-01(9.44E-05)	4.38E-01(9.94E-05)
	200	8.94E-01(5.02E-04)†	3.97E-01(3.67E-04)‡	9.02E-01(4.27E-04)†	3.44E-02(7.38E-05)‡	4.24E-01(8.80E-05)	4.26E-01(5.77E-05)
WFG6	5	1.17E+00(2.36E-03)†	5.15E-01(2.60E-03)‡	1.24E+00(1.71E-03)†	2.89E-02(2.41E-06)‡	7.59E-01(3.73E-03)†	7.27E-01(3.65E-03)
	25	9.84E-01(5.68E-04)†	3.54E-01(4.60E-04)‡	1.02E+00(1.19E-03)†	3.46E-02(1.30E-06)‡	4.73E-01(3.32E-04)†	4.62E-01(4.76E-04)
	50	9.25E-01(7.89E-04)†	3.36E-01(2.34E-04)‡	9.34E-01(6.05E-04)†	3.78E-02(1.09E-06)‡	4.26E-01(1.22E-04)	4.26E-01(1.06E-04)
	200	8.93E-01(6.09E-04)†	3.38E-01(2.93E-04)‡	8.92E-01(8.19E-04)†	3.95E-02(7.97E-07)‡	3.96E-01(1.60E-04)	3.91E-01(3.77E-04)
WFG7	5	1.15E+00(1.33E-03)†	4.44E-01(2.38E-03)‡	1.20E+00(1.61E-03)†	1.52E-01(1.15E-04)‡	4.84E-01(2.02E-04)†	4.67E-01(1.99E-04)
	25	1.04E+00(7.09E-04)†	2.50E-01(9.79E-04)‡	1.06E+00(1.12E-03)†	6.59E-02(4.35E-05)‡	4.08E-01(9.23E-05)	4.07E-01(9.39E-05)
	50	1.01E+00(7.32E-04)†	2.81E-01(1.07E-03)‡	1.01E+00(6.34E-04)†	4.10E-02(1.22E-04)‡	4.02E-01(9.44E-05)†	3.94E-01(1.16E-04)
	200	9.79E-01(5.03E-04)†	3.38E-01(4.60E-04)‡	9.82E-01(4.27E-04)†	2.83E-02(8.96E-06)‡	4.20E-01(9.05E-05)	4.23E-01(7.06E-05)
WFG8	5	1.15E+00(1.08E-03)†	4.40E-01(2.62E-03)‡	1.20E+00(1.54E-03)†	1.55E-01(1.31E-04)‡	4.83E-01(1.61E-04)†	4.68E-01(1.06E-04)
	25	1.04E+00(7.09E-04)†	2.50E-01(9.79E-04)‡	1.06E+00(1.12E-03)†	6.78E-02(9.44E-05)‡	4.05E-01(1.08E-04)	4.04E-01(8.51E-05)
	50	1.00E+00(5.14E-04)†	2.82E-01(6.77E-04)‡	1.02E+00(6.23E-04)†	3.76E-02(1.86E-05)‡	3.97E-01(1.21E-04)	3.94E-01(1.06E-04)
	200	9.82E-01(4.19E-04)†	3.36E-01(6.16E-04)‡	9.81E-01(4.68E-04)†	2.76E-02(1.41E-05)‡	4.23E-01(5.29E-05)	4.24E-01(5.96E-05)
WFG9	5	1.30E+00(1.87E-03)†	6.08E-01(1.11E-02)‡	1.38E+00(2.25E-03)†	1.05E-01(1.26E-04)‡	9.20E-01(4.79E-02)	9.94E-01(3.46E-02)
	25	1.04E+00(7.09E-04)†	2.50E-01(9.79E-04)‡	1.06E+00(1.12E-03)†	6.72E-02(4.16E-05)‡	7.04E-01(8.71E-02)	7.47E-01(8.64E-02)
	50	1.05E+00(8.03E-04)†	3.40E-01(3.09E-02)‡	1.08E+00(1.22E-03)†	5.53E-02(3.88E-05)‡	8.29E-01(7.75E-02)	7.79E-01(9.30E-02)
	200	1.03E+00(1.02E-03)	3.74E-01(2.95E-02)‡	1.03E+00(8.08E-04)	3.94E-02(2.71E-05)‡	8.10E-01(8.96E-02)	8.67E-01(8.26E-02)

TABLE 119
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 6 TO 5 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	3.24E+02(1.21E+02)†	9.72E+00(4.91E+00)‡	3.00E+02(1.13E+02)†	1.07E+03(3.51E+03)†	3.35E+01(2.90E+01)	3.20E+01(2.00E+01)
	25	2.86E+02(4.15E+02)†	6.85E+00(4.28E+00)	2.97E+02(2.37E+02)†	1.25E+03(4.53E+03)†	1.14E+01(1.89E+01)†	6.78E+00(1.15E+01)
	50	2.72E+02(3.06E+02)†	6.51E+00(4.76E+00)†	2.80E+02(2.63E+02)†	1.30E+03(5.90E+03)†	1.94E+00(1.66E+00)†	5.72E-01(6.09E-01)
	200	2.33E+02(8.57E+02)†	6.59E+00(5.09E+00)†	2.57E+02(6.69E+02)†	1.36E+03(4.59E+03)†	1.22E-01(4.84E-02)‡	1.47E-01(3.39E-01)
F2	5	9.09E-01(5.30E-03)†	1.85E-01(4.70E-04)†	7.25E-01(1.69E-03)†	7.27E+00(3.40E-01)†	1.88E-01(2.72E-04)†	1.66E-01(2.76E-04)
	25	7.29E-01(8.92E-03)†	1.32E-01(1.46E-04)†	6.22E-01(2.46E-03)†	9.82E+00(3.51E-01)†	7.06E-02(3.98E-05)	6.85E-02(2.65E-05)
	50	5.85E-01(5.50E-03)†	1.13E-01(6.04E-05)†	5.49E-01(2.35E-03)†	1.00E+01(6.52E-01)†	5.22E-02(9.37E-06)	5.27E-02(9.34E-06)
	200	4.73E-01(2.34E-03)†	7.50E-02(7.16E-05)†	4.74E-01(3.50E-03)†	8.96E+00(2.40E-01)†	4.15E-02(2.20E-06)	4.11E-02(1.94E-06)
F3	5	7.13E+02(9.58E+02)†	2.19E+01(4.75E+01)‡	6.86E+02(9.43E+02)†	1.02E+03(4.42E+03)†	8.56E+01(1.27E+02)	9.08E+01(2.29E+02)
	25	5.70E+02(1.09E+03)†	1.40E+01(3.59E+01)‡	5.80E+02(1.34E+03)†	1.31E+03(5.38E+03)†	3.49E+01(1.54E+02)†	2.50E+01(9.81E+01)
	50	5.39E+02(1.76E+03)†	1.43E+01(2.31E+01)†	5.45E+02(1.24E+03)†	1.46E+03(7.11E+03)†	9.34E+00(3.28E+01)†	2.89E+00(6.73E+00)
	200	4.91E+02(1.28E+03)†	1.31E+01(3.97E+01)†	4.90E+02(1.39E+03)†	1.52E+03(4.42E+03)†	1.37E-01(4.68E-02)	2.52E-01(3.26E-01)
F4	5	1.35E+00(2.29E-04)†	1.14E-01(3.60E-04)‡	1.07E+00(1.88E-03)†	1.20E-01(8.51E-03)†	2.64E-01(4.79E-04)†	2.41E-01(8.49E-04)
	25	1.21E+00(5.07E-04)†	9.30E-02(1.08E-04)†	9.52E-01(2.41E-03)†	1.26E-02(8.45E-06)‡	6.24E-02(3.98E-05)	6.44E-02(3.52E-05)
	50	1.09E+00(1.13E-03)†	8.83E-02(6.56E-05)†	8.62E-01(2.10E-03)†	1.10E-02(5.56E-06)‡	4.51E-02(7.88E-06)	4.56E-02(8.31E-06)
	200	7.80E-01(1.38E-03)†	7.15E-02(5.49E-05)†	7.52E-01(2.82E-03)†	8.38E-03(1.28E-06)‡	3.88E-02(1.59E-06)	3.87E-02(2.24E-06)
WFG1	5	6.32E-01(4.81E-04)†	5.46E-01(1.28E-03)†	6.43E-01(5.08E-04)†	1.38E+00(5.21E-04)†	4.97E-01(3.74E-05)†	4.85E-01(1.16E-04)
	25	4.75E-01(7.44E-04)†	3.96E-01(5.22E-04)†	4.77E-01(8.85E-04)†	1.38E+00(1.02E-03)†	3.18E-01(7.42E-04)†	2.92E-01(6.18E-04)
	50	3.85E-01(3.75E-04)†	3.61E-01(3.94E-04)†	3.91E-01(4.58E-04)†	1.38E+00(1.00E-03)†	2.47E-01(3.15E-04)	2.42E-01(8.38E-03)
	200	3.63E-01(1.94E-04)†	3.26E-01(2.60E-04)†	3.63E-01(2.66E-04)†	1.38E+00(3.62E-04)†	2.23E-01(1.52E-04)	2.21E-01(3.15E-03)
WFG2	5	9.11E-01(8.54E-03)†	4.50E-01(1.69E-03)‡	7.95E-01(3.57E-03)†	3.17E-01(1.61E-05)‡	6.18E-01(1.41E-03)†	5.40E-01(9.61E-04)
	25	7.92E-01(5.15E-03)†	4.30E-01(3.99E-04)‡	7.90E-01(4.50E-03)†	3.08E-01(8.22E-07)‡	5.67E-01(5.62E-04)	5.64E-01(6.88E-04)
	50	8.33E-01(2.48E-03)†	4.34E-01(4.62E-04)‡	8.41E-01(5.21E-03)†	3.06E-01(1.29E-07)‡	5.61E-01(4.62E-04)	5.54E-01(6.36E-04)
	200	8.92E-01(2.97E-03)†	4.45E-01(3.95E-04)‡	8.73E-01(4.41E-03)†	3.06E-01(1.33E-07)‡	5.31E-01(5.47E-05)‡	5.35E-01(5.85E-05)
WFG3	5	2.58E+00(9.92E-03)†	2.63E+00(1.05E-02)†	2.52E+00(6.79E-03)†	9.26E-01(6.20E-04)‡	1.99E+00(2.73E-03)	2.00E+00(5.19E-03)
	25	2.41E+00(5.53E-03)†	2.77E+00(4.00E-03)†	2.40E+00(3.30E-03)†	8.64E-01(1.19E-04)‡	1.83E+00(1.02E-02)	1.76E+00(3.04E-02)
	50	2.40E+00(3.11E-03)†	2.80E+00(4.64E-03)†	2.41E+00(2.84E-03)†	8.49E-01(3.36E-05)‡	1.89E+00(9.52E-03)	1.88E+00(2.45E-02)
	200	2.43E+00(3.35E-03)†	2.81E+00(4.57E-03)†	2.44E+00(2.79E-03)†	8.40E-01(4.76E-06)‡	1.94E+00(2.63E-03)	1.91E+00(8.86E-03)
WFG4	5	6.63E-01(7.68E-04)†	4.31E-01(1.09E-03)†	7.12E-01(6.80E-04)†	3.89E-01(9.44E-04)†	3.30E-01(1.07E-04)†	3.14E-01(5.29E-05)
	25	4.99E-01(1.81E-04)†	3.60E-01(1.86E-04)†	5.24E-01(4.30E-04)†	3.61E-01(7.67E-04)†	2.52E-01(3.59E-05)	2.51E-01(4.10E-05)
	50	4.59E-01(1.60E-04)†	3.46E-01(1.32E-04)†	4.77E-01(2.72E-04)†	3.77E-01(9.72E-04)†	2.47E-01(4.29E-05)	2.46E-01(1.62E-05)
	200	4.30E-01(1.45E-04)†	3.16E-01(5.70E-05)†	4.34E-01(2.42E-04)†	3.78E-01(7.75E-04)†	2.37E-01(1.83E-05)	2.35E-01(1.73E-05)
WFG5	5	6.78E-01(1.23E-03)†	4.54E-01(3.85E-04)†	7.55E-01(9.27E-04)†	8.17E-02(6.20E-05)‡	3.61E-01(9.58E-05)†	3.51E-01(6.24E-05)
	25	5.10E-01(3.65E-04)†	3.86E-01(9.21E-05)†	5.32E-01(1.00E-03)†	6.42E-02(7.86E-05)‡	2.77E-01(2.43E-05)	2.76E-01(3.70E-05)
	50	4.75E-01(1.82E-04)†	3.61E-01(1.29E-04)†	4.82E-01(3.26E-04)†	6.91E-02(5.56E-05)‡	2.66E-01(3.17E-05)	2.67E-01(3.60E-05)
	200	4.46E-01(2.08E-04)†	3.30E-01(6.80E-05)†	4.51E-01(2.25E-04)†	6.79E-02(5.51E-05)‡	2.70E-01(3.21E-05)	2.68E-01(2.23E-05)
WFG6	5	8.28E-01(3.74E-03)†	4.99E-01(1.70E-03)‡	9.59E-01(1.65E-03)†	7.63E-02(7.77E-05)‡	6.98E-01(7.12E-03)†	5.76E-01(1.01E-02)
	25	5.24E-01(5.72E-04)†	3.88E-01(5.82E-04)†	5.40E-01(3.85E-04)†	1.06E-01(4.10E-05)‡	2.97E-01(1.07E-04)†	2.86E-01(5.19E-05)
	50	4.72E-01(2.47E-04)†	3.76E-01(4.95E-04)†	4.78E-01(1.78E-04)†	1.12E-01(4.58E-05)‡	2.57E-01(3.57E-05)	2.57E-01(4.51E-05)
	200	4.51E-01(2.09E-04)†	3.46E-01(4.08E-04)†	4.51E-01(1.05E-04)†	1.23E-01(2.34E-05)‡	2.47E-01(4.80E-05)	2.46E-01(4.57E-05)
WFG7	5	7.78E-01(7.78E-04)†	4.79E-01(9.67E-04)†	8.39E-01(1.23E-03)†	2.05E-01(5.43E-04)‡	4.42E-01(1.94E-04)†	4.06E-01(1.51E-04)
	25	5.76E-01(3.58E-04)†	3.43E-01(6.56E-04)†	5.99E-01(2.50E-04)†	8.76E-02(6.25E-05)‡	2.73E-01(5.49E-05)†	2.68E-01(3.94E-05)
	50	5.41E-01(2.80E-04)†	3.85E-01(9.60E-04)†	5.49E-01(2.25E-04)†	6.59E-02(3.38E-05)‡	2.47E-01(4.20E-05)	2.43E-01(3.52E-05)
	200	5.22E-01(1.27E-04)†	4.16E-01(2.89E-04)†	5.25E-01(1.99E-04)†	4.71E-02(1.33E-05)‡	2.33E-01(1.83E-05)	2.33E-01(1.99E-05)
WFG8	5	7.83E-01(4.23E-04)†	4.81E-01(1.31E-03)†	8.40E-01(1.41E-03)†	2.05E-01(4.16E-04)‡	4.36E-01(1.45E-04)†	4.04E-01(9.93E-05)
	25	5.76E-01(3.58E-04)†	3.43E-01(6.56E-04)†	5.99E-01(2.50E-04)†	9.02E-02(8.11E-05)‡	2.69E-01(3.82E-05)	2.67E-01(3.14E-05)
	50	5.52E-01(1.57E-04)†	3.83E-01(3.10E-04)†	5.51E-01(1.80E-04)†	6.49E-02(5.20E-05)‡	2.46E-01(2.91E-05)	2.43E-01(3.25E-05)
	200	5.18E-01(1.83E-04)†	4.21E-01(3.91E-04)†	5.23E-01(2.15E-04)†	4.75E-02(1.25E-05)‡	2.33E-01(1.57E-05)	2.33E-01(1.99E-05)
WFG9	5	9.04E-01(3.31E-03)†	5.77E-01(3.06E-03)‡	1.11E+00(4.81E-03)†	1.39E-01(2.14E-04)‡	8.29E-01(2.05E-02)	7.99E-01(1.57E-02)
	25	5.76E-01(3.58E-04)	3.43E-01(6.56E-04)	5.99E-01(2.50E-04)	9.39E-02(1.94E-05)‡	4.93E-01(5.14E-02)	5.23E-01(5.25E-02)
	50	5.25E-01(3.72E-04)	4.18E-01(1.38E-02)	5.35E-01(3.33E-04)	7.98E-02(1.74E-05)‡	5.68E-01(4.46E-02)	5.30E-01(5.35E-02)
	200	5.04E-01(2.89E-04)‡	4.13E-01(1.51E-02)‡	5.00E-01(3.15E-04)‡	6.60E-02(1.57E-05)‡	5.43E-01(5.01E-02)	5.82E-01(4.66E-02)

TABLE 120
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 5 TO 4 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	3.18E+02(2.06E+02)†	1.52E+01(7.25E+00)‡	2.89E+02(2.07E+02)†	1.12E+03(2.48E+03)†	4.59E+01(4.87E+01)‡	5.41E+01(5.77E+01)
	25	1.52E+02(2.81E+02)†	6.78E+00(2.43E+00)‡	1.68E+02(2.64E+02)†	1.31E+03(1.79E+03)†	1.55E+01(2.00E+01)†	1.06E+01(1.84E+01)
	50	9.88E+01(2.58E+02)†	6.57E+00(2.79E+00)†	1.15E+02(2.65E+02)†	1.33E+03(3.99E+03)†	1.55E+00(1.85E+00)†	4.01E-01(2.39E-01)
	200	2.02E+01(1.04E+02)†	6.78E+00(2.47E+00)†	3.35E+01(1.92E+02)†	1.34E+03(2.62E+03)†	8.27E-02(4.21E-02)†	3.92E-02(2.87E-02)
F2	5	7.79E-01(1.02E-02)†	2.43E-01(7.29E-04)†	5.16E-01(2.14E-03)†	1.42E+01(5.81E-01)†	1.50E-01(6.30E-04)†	1.18E-01(2.15E-04)
	25	2.62E-01(5.29E-03)†	1.13E-01(8.05E-05)†	1.90E-01(1.28E-03)†	1.65E+01(1.99E-01)†	3.57E-02(8.88E-06)	3.55E-02(7.50E-06)
	50	1.11E-01(8.26E-04)†	8.29E-02(5.71E-05)†	9.73E-02(3.51E-04)†	1.67E+01(6.08E-06)†	2.53E-02(3.72E-06)	2.48E-02(2.30E-06)
	200	4.49E-02(6.52E-05)†	4.51E-02(3.06E-05)†	4.40E-02(4.79E-05)†	1.68E+01(0.00E+00)†	1.97E-02(4.86E-07)	1.98E-02(5.85E-07)
F3	5	6.59E+02(1.35E+03)†	3.70E+01(5.52E+01)‡	6.30E+02(1.26E+03)†	1.95E+03(6.73E+03)†	1.19E+02(2.70E+02)‡	1.39E+02(5.44E+02)
	25	3.20E+02(5.87E+02)†	1.43E+01(2.23E+01)‡	3.33E+02(4.82E+02)†	2.51E+03(1.13E+04)†	4.59E+01(1.90E+02)†	3.78E+01(1.18E+02)
	50	2.24E+02(4.40E+02)†	1.47E+01(1.44E+01)†	2.26E+02(6.08E+02)†	2.76E+03(3.59E+03)†	9.89E+00(4.33E+01)†	2.07E+00(4.48E+00)
	200	4.48E+01(1.74E+02)†	1.34E+01(2.35E+01)†	4.15E+01(2.56E+02)†	2.87E+03(0.00E+00)†	1.35E-01(1.56E-01)	8.03E-02(2.90E-02)
F4	5	1.49E+00(6.98E-04)†	1.66E-01(6.58E-04)‡	9.49E-01(3.50E-03)†	1.43E-01(1.00E-02)‡	2.93E-01(1.10E-03)†	2.26E-01(2.19E-03)
	25	7.89E-01(3.28E-03)†	1.04E-01(1.94E-04)†	3.02E-01(3.49E-03)†	1.55E-02(5.34E-06)‡	3.48E-02(1.63E-05)	3.39E-02(1.68E-05)
	50	3.22E-01(2.75E-03)†	8.29E-02(1.03E-04)†	1.11E-01(2.43E-04)†	1.29E-02(6.25E-06)‡	2.27E-02(1.48E-06)	2.21E-02(2.91E-06)
	200	3.93E-02(2.61E-05)†	4.68E-02(3.68E-05)†	3.96E-02(3.07E-05)†	7.33E-03(9.34E-07)‡	2.00E-02(6.60E-07)	1.99E-02(7.75E-07)
WFG1	5	5.43E-01(3.63E-04)†	6.37E-01(1.29E-03)†	5.69E-01(2.24E-04)†	1.34E+00(1.41E-03)†	5.10E-01(7.19E-05)†	4.73E-01(2.88E-04)
	25	3.26E-01(6.87E-04)†	3.82E-01(4.94E-04)†	3.33E-01(7.43E-04)†	1.36E+00(1.25E-03)†	2.38E-01(5.67E-04)†	2.07E-01(1.58E-03)
	50	2.40E-01(3.56E-04)†	3.07E-01(3.07E-04)†	2.48E-01(3.34E-04)†	1.36E+00(1.80E-03)†	1.61E-01(1.76E-04)†	1.43E-01(4.10E-03)
	200	1.95E-01(7.35E-05)†	2.28E-01(1.21E-04)†	1.98E-01(7.68E-05)†	1.37E+00(9.00E-04)†	1.18E-01(2.95E-05)	1.19E-01(8.86E-04)
WFG2	5	5.84E-01(6.55E-03)†	4.09E-01(4.45E-04)†	4.54E-01(1.47E-03)†	2.51E-01(7.75E-05)‡	4.15E-01(1.54E-03)†	3.38E-01(1.07E-03)
	25	3.90E-01(2.72E-03)†	2.96E-01(9.82E-05)	3.64E-01(1.28E-03)†	2.39E-01(2.29E-06)‡	2.95E-01(1.77E-04)	2.99E-01(7.00E-05)
	50	3.80E-01(1.63E-03)†	2.89E-01(4.34E-05)‡	3.70E-01(1.82E-03)†	2.38E-01(2.91E-06)‡	2.94E-01(1.51E-04)	2.99E-01(1.61E-04)
	200	4.05E-01(1.49E-03)†	2.85E-01(6.44E-05)†	4.17E-01(3.31E-03)†	2.39E-01(2.08E-06)‡	2.59E-01(1.95E-05)	2.57E-01(2.32E-05)
WFG3	5	1.80E+00(3.07E-03)†	1.82E+00(2.84E-03)†	1.71E+00(1.03E-03)†	9.94E-01(1.14E-03)‡	1.50E+00(1.64E-03)‡	1.53E+00(3.55E-03)
	25	1.51E+00(2.44E-03)†	1.85E+00(8.21E-04)†	1.48E+00(1.27E-03)†	9.09E-01(3.11E-04)‡	1.36E+00(1.09E-03)	1.36E+00(9.12E-04)
	50	1.47E+00(1.30E-03)†	1.85E+00(8.78E-04)†	1.47E+00(1.28E-03)†	8.92E-01(2.03E-04)‡	1.35E+00(2.12E-04)	1.35E+00(2.81E-04)
	200	1.48E+00(1.24E-03)†	1.85E+00(9.13E-04)†	1.48E+00(1.76E-03)†	8.84E-01(2.89E-05)‡	1.34E+00(1.34E-04)	1.35E+00(1.68E-04)
WFG4	5	3.65E-01(3.94E-04)†	3.54E-01(9.63E-04)†	4.28E-01(4.39E-04)†	4.49E-01(1.51E-03)†	1.82E-01(8.14E-05)†	1.61E-01(3.03E-05)
	25	2.13E-01(9.02E-05)†	2.74E-01(1.44E-04)†	2.31E-01(7.41E-05)†	4.09E-01(4.00E-04)†	9.94E-02(2.57E-06)	9.86E-02(6.22E-06)
	50	1.95E-01(3.00E-05)†	2.47E-01(1.07E-04)†	2.04E-01(6.12E-05)†	4.10E-01(4.39E-04)†	9.75E-02(5.28E-06)	9.73E-02(4.42E-06)
	200	1.85E-01(3.42E-05)†	1.92E-01(2.61E-05)†	1.87E-01(3.03E-05)†	4.05E-01(4.88E-04)†	9.74E-02(2.30E-06)‡	9.84E-02(3.71E-06)
WFG5	5	3.80E-01(6.15E-04)†	3.24E-01(4.48E-04)†	4.71E-01(6.67E-04)†	8.50E-02(2.79E-05)‡	2.15E-01(1.36E-04)†	2.00E-01(1.19E-04)
	25	2.31E-01(6.19E-05)†	2.33E-01(1.08E-04)†	2.46E-01(1.16E-04)†	7.73E-02(1.12E-04)‡	1.20E-01(7.84E-06)†	1.18E-01(4.91E-06)
	50	2.08E-01(5.83E-05)†	2.11E-01(5.44E-05)†	2.17E-01(7.70E-05)†	7.90E-02(6.57E-05)‡	1.13E-01(1.75E-06)	1.13E-01(3.27E-06)
	200	1.93E-01(5.85E-05)†	1.77E-01(2.04E-05)†	1.96E-01(3.52E-05)†	7.80E-02(1.26E-05)‡	1.16E-01(2.45E-06)	1.16E-01(3.08E-06)
WFG6	5	4.91E-01(2.33E-03)†	4.16E-01(1.59E-03)†	6.24E-01(2.42E-03)†	1.00E-01(6.13E-05)‡	5.42E-01(9.37E-03)†	3.59E-01(4.52E-03)
	25	2.29E-01(1.91E-04)†	3.22E-01(9.10E-05)†	2.41E-01(1.23E-04)†	9.96E-02(3.14E-05)‡	1.25E-01(5.35E-05)†	1.15E-01(3.13E-05)
	50	1.96E-01(4.04E-05)†	2.83E-01(9.49E-05)†	2.03E-01(6.33E-05)†	9.50E-02(3.90E-05)‡	9.98E-02(4.62E-06)	9.95E-02(3.93E-06)
	200	1.83E-01(3.28E-05)†	2.06E-01(3.25E-05)†	1.83E-01(3.12E-05)†	1.15E-01(3.95E-05)†	9.86E-02(4.69E-06)	9.88E-02(4.03E-06)
WFG7	5	4.71E-01(6.78E-04)†	4.76E-01(3.56E-03)†	5.51E-01(9.90E-04)†	2.13E-01(5.62E-04)‡	3.12E-01(1.46E-04)†	2.53E-01(1.85E-04)
	25	2.50E-01(1.80E-04)†	4.91E-01(8.03E-04)†	2.59E-01(1.28E-04)†	9.69E-02(6.94E-05)‡	1.08E-01(1.04E-05)†	1.04E-01(7.20E-06)
	50	2.19E-01(5.60E-05)†	4.62E-01(7.13E-04)†	2.22E-01(7.49E-05)†	7.02E-02(1.50E-05)‡	9.60E-02(5.40E-06)	9.61E-02(4.84E-06)
	200	2.01E-01(6.39E-05)†	3.06E-01(3.53E-04)†	2.05E-01(3.92E-05)†	5.07E-02(4.09E-05)‡	9.87E-02(2.86E-06)	9.86E-02(2.53E-06)
WFG8	5	4.81E-01(4.89E-04)†	4.82E-01(4.70E-03)†	5.47E-01(9.68E-04)†	2.10E-01(3.81E-04)‡	3.14E-01(2.05E-04)†	2.51E-01(1.36E-04)
	25	2.50E-01(1.80E-04)†	4.91E-01(8.03E-04)†	2.59E-01(1.28E-04)†	9.53E-02(5.49E-05)‡	1.08E-01(6.74E-06)†	1.04E-01(4.30E-06)
	50	2.16E-01(6.39E-05)†	4.60E-01(7.22E-04)†	2.24E-01(5.78E-05)†	6.99E-02(2.19E-05)‡	9.58E-02(4.30E-06)	9.50E-02(4.79E-06)
	200	2.02E-01(7.14E-05)†	3.04E-01(5.52E-04)†	2.04E-01(1.46E-04)†	5.02E-02(3.18E-05)‡	9.84E-02(5.38E-06)	9.88E-02(2.30E-06)
WFG9	5	5.14E-01(3.20E-03)‡	6.68E-01(1.10E-02)	7.90E-01(5.21E-03)†	1.37E-01(2.25E-04)‡	7.39E-01(2.88E-02)†	6.45E-01(1.87E-02)
	25	2.50E-01(1.80E-04)	4.91E-01(8.03E-04)†	2.59E-01(1.28E-04)	9.56E-02(3.51E-05)‡	3.05E-01(4.33E-02)	3.28E-01(4.21E-02)
	50	1.91E-01(6.36E-05)	3.99E-01(1.20E-02)	1.92E-01(4.28E-05)	8.29E-02(3.28E-05)‡	3.74E-01(3.47E-02)	3.43E-01(4.14E-02)
	200	1.77E-01(5.58E-05)‡	2.62E-01(1.36E-02)‡	1.78E-01(4.43E-05)‡	5.95E-02(3.51E-05)‡	3.56E-01(3.69E-02)	3.94E-01(3.53E-02)

TABLE 121
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 4 TO 3 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	2.64E+02(3.34E+02)†	1.96E+01(1.71E+01)‡	2.51E+02(2.56E+02)†	2.75E+02(3.36E+03)†	5.63E+01(3.32E+01)‡	8.01E+01(1.76E+02)
	25	6.78E+01(8.88E+01)†	1.08E-01(1.53E-03)‡	9.75E+01(5.93E+02)†	8.98E+01(9.73E+02)†	1.42E+01(2.37E+01)†	8.52E+00(2.81E+01)
	50	3.05E+01(4.78E+01)†	2.32E-02(8.53E-06)‡	4.27E+01(1.25E+02)†	5.21E+01(2.11E+02)†	1.44E+00(1.06E+00)†	3.80E-01(5.46E-01)
	200	5.44E-02(1.04E-02)†	3.93E-03(1.06E-07)‡	1.53E-01(9.40E-02)†	1.20E+01(2.85E+01)†	5.83E-03(3.10E-04)‡	1.28E-02(3.78E-03)
F2	5	5.31E-01(1.52E-02)†	2.14E-01(4.96E-04)†	3.17E-01(1.24E-03)†	3.42E+00(1.30E+00)†	8.61E-02(1.19E-04)†	4.79E-02(3.57E-05)
	25	2.46E-02(5.79E-05)†	4.94E-02(8.76E-06)†	1.89E-02(7.06E-06)†	8.58E-02(2.69E-03)†	1.15E-02(3.23E-06)	1.08E-02(3.45E-06)
	50	1.03E-02(8.94E-07)†	2.78E-02(2.82E-06)†	1.03E-02(7.35E-07)†	2.91E-02(3.17E-05)†	6.74E-03(3.04E-07)	6.72E-03(6.75E-07)
	200	8.21E-03(2.77E-07)†	7.18E-03(4.89E-08)†	8.16E-03(1.99E-07)†	2.08E-02(3.49E-07)†	4.55E-03(4.65E-08)	4.68E-03(8.65E-08)
F3	5	5.11E+02(1.49E+03)†	5.16E+01(8.86E+01)‡	5.26E+02(1.22E+03)†	9.35E+02(3.78E+04)†	1.35E+02(2.52E+02)‡	1.99E+02(2.62E+03)
	25	1.40E+02(4.00E+02)†	3.80E-01(1.04E-02)‡	1.73E+02(5.56E+02)†	4.42E+02(6.10E+03)†	3.94E+01(8.05E+01)†	2.91E+01(1.58E+02)
	50	5.85E+01(2.64E+02)†	7.63E-02(1.10E-04)‡	6.63E+01(4.88E+02)†	2.46E+02(5.83E+03)†	6.20E+00(1.57E+01)†	1.41E+00(3.03E+00)
	200	4.29E-02(1.02E-02)†	1.59E-02(1.51E-06)‡	2.37E-02(1.36E-04)‡	3.76E+01(3.58E+02)†	3.69E-02(3.18E-02)	3.46E-02(1.60E-02)
F4	5	1.49E+00(2.03E-03)†	1.98E-01(1.53E-03)†	7.09E-01(3.91E-03)†	2.95E-01(7.05E-02)†	2.57E-01(1.38E-03)†	1.40E-01(1.52E-03)
	25	1.43E-01(9.96E-04)†	5.82E-02(2.80E-05)†	2.40E-02(2.35E-05)†	1.71E-02(4.32E-06)†	1.43E-02(6.77E-06)†	1.09E-02(2.80E-06)
	50	1.43E-02(1.66E-06)†	3.24E-02(7.41E-06)†	1.07E-02(3.79E-07)†	1.91E-02(1.31E-06)†	6.75E-03(6.83E-07)†	6.20E-03(2.78E-07)
	200	8.00E-03(1.30E-07)†	8.09E-03(1.55E-07)†	8.04E-03(1.68E-07)†	1.75E-02(3.23E-07)†	4.48E-03(3.54E-08)	4.44E-03(2.59E-08)
WFG1	5	4.48E-01(4.97E-04)†	7.31E-01(9.61E-04)†	4.87E-01(2.30E-04)†	8.93E-01(8.20E-04)†	4.77E-01(1.40E-04)†	4.15E-01(4.00E-04)
	25	1.94E-01(3.72E-04)†	3.99E-01(3.59E-04)†	2.05E-01(4.71E-04)†	8.95E-01(3.91E-05)†	1.76E-01(2.37E-04)†	1.34E-01(1.33E-03)
	50	1.09E-01(1.31E-04)†	2.88E-01(2.05E-04)†	1.17E-01(1.69E-04)†	8.91E-01(6.09E-05)†	7.82E-02(5.08E-05)†	6.36E-02(8.15E-04)
	200	5.28E-02(3.32E-06)†	1.56E-01(2.89E-05)†	5.27E-02(6.62E-06)†	8.75E-01(1.24E-04)†	2.98E-02(7.86E-07)†	2.93E-02(5.38E-05)
WFG2	5	2.73E-01(2.07E-03)†	3.89E-01(1.20E-03)†	2.28E-01(4.97E-04)†	1.70E-01(2.73E-04)†	2.26E-01(1.05E-03)†	1.54E-01(5.21E-04)
	25	8.53E-02(3.76E-05)†	1.27E-01(2.20E-05)†	8.34E-02(3.99E-05)†	1.64E-01(1.08E-05)†	7.28E-02(2.72E-05)†	6.93E-02(2.08E-05)
	50	8.43E-02(5.84E-05)†	1.05E-01(1.12E-05)†	8.30E-02(4.05E-05)†	1.64E-01(6.65E-06)†	6.67E-02(2.13E-05)	6.75E-02(9.71E-06)
	200	8.55E-02(1.15E-04)†	7.98E-02(3.22E-06)†	8.38E-02(7.27E-05)†	1.62E-01(6.51E-07)†	6.64E-02(6.45E-06)	6.68E-02(4.49E-06)
WFG3	5	1.13E+00(3.78E-03)†	1.10E+00(1.19E-02)†	1.11E+00(1.65E-03)†	1.59E+00(5.55E-03)†	1.11E+00(1.87E-03)†	9.57E-01(4.74E-03)
	25	5.57E-01(1.40E-03)	8.84E-01(8.72E-05)†	5.52E-01(8.50E-04)	1.54E+00(4.04E-04)†	6.87E-01(1.19E-03)†	5.51E-01(7.37E-04)
	50	5.08E-01(5.70E-04)‡	8.52E-01(1.17E-05)†	5.13E-01(6.52E-04)‡	1.53E+00(3.28E-04)†	5.47E-01(1.68E-04)†	5.40E-01(1.09E-04)
	200	5.11E-01(4.61E-04)‡	8.38E-01(6.30E-07)†	5.17E-01(4.13E-04)‡	1.53E+00(1.20E-04)†	5.32E-01(7.16E-05)‡	5.41E-01(9.59E-05)
WFG4	5	1.83E-01(2.09E-04)†	4.08E-01(1.17E-03)†	2.40E-01(1.81E-04)†	5.57E-01(8.96E-04)†	1.02E-01(5.20E-05)†	8.14E-02(3.00E-05)
	25	8.46E-02(2.76E-05)†	2.18E-01(7.41E-05)†	9.49E-02(1.96E-05)†	4.67E-01(1.50E-04)†	2.18E-02(4.91E-07)†	2.14E-02(4.69E-07)
	50	7.00E-02(1.07E-05)†	1.78E-01(4.85E-05)†	7.58E-02(1.79E-05)†	4.59E-01(6.07E-05)†	1.86E-02(1.49E-07)	1.85E-02(1.49E-07)
	200	5.71E-02(9.21E-06)†	1.22E-01(2.16E-05)†	5.94E-02(9.40E-06)†	4.56E-01(1.81E-05)†	1.80E-02(1.89E-07)‡	1.82E-02(1.74E-07)
WFG5	5	2.14E-01(5.33E-04)†	3.08E-01(5.57E-04)†	2.84E-01(6.16E-04)†	9.59E-02(1.31E-05)†	1.72E-01(2.65E-04)†	1.55E-01(1.45E-04)
	25	1.12E-01(1.90E-05)†	1.54E-01(7.99E-05)†	1.21E-01(2.53E-05)†	9.03E-02(5.44E-06)†	4.59E-02(3.61E-06)†	4.43E-02(8.02E-06)
	50	9.78E-02(8.57E-06)†	1.28E-01(3.38E-05)†	1.04E-01(1.45E-05)†	8.82E-02(9.52E-06)†	4.18E-02(7.64E-07)†	4.13E-02(4.50E-07)
	200	9.06E-02(7.27E-06)†	9.25E-02(1.49E-05)†	9.05E-02(3.37E-06)†	8.30E-02(8.71E-06)†	4.05E-02(4.23E-08)	4.05E-02(3.77E-08)
WFG6	5	3.12E-01(1.08E-03)†	5.85E-01(3.37E-03)†	4.23E-01(3.18E-03)†	8.67E-02(1.44E-05)‡	4.38E-01(1.14E-02)†	2.55E-01(7.60E-03)
	25	8.58E-02(7.84E-05)†	2.49E-01(1.87E-04)†	9.54E-02(5.96E-05)†	8.07E-02(5.51E-06)†	4.51E-02(3.94E-05)†	3.34E-02(1.29E-05)
	50	5.96E-02(1.68E-05)†	1.89E-01(7.59E-05)†	6.71E-02(2.45E-05)†	8.16E-02(3.73E-06)†	2.18E-02(9.03E-07)†	2.03E-02(9.86E-07)
	200	4.15E-02(1.05E-05)†	9.77E-02(2.41E-05)†	4.30E-02(3.15E-06)†	8.64E-02(2.51E-06)†	1.85E-02(1.47E-07)	1.84E-02(1.28E-07)
WFG7	5	2.78E-01(3.28E-04)†	7.54E-01(1.17E-02)†	3.61E-01(5.28E-04)†	2.81E-01(1.35E-03)†	2.42E-01(1.67E-04)†	1.69E-01(1.42E-04)
	25	6.72E-02(2.25E-05)†	5.31E-01(1.11E-03)†	7.51E-02(3.81E-05)†	9.93E-02(1.65E-05)†	2.87E-02(6.29E-06)†	2.46E-02(1.93E-06)
	50	4.51E-02(8.77E-06)†	4.05E-01(9.28E-04)†	4.73E-02(1.28E-05)†	8.43E-02(1.12E-05)†	1.90E-02(2.59E-07)†	1.86E-02(1.12E-07)
	200	3.24E-02(2.03E-06)†	1.71E-01(2.48E-04)†	3.25E-02(2.36E-06)†	8.04E-02(4.05E-06)†	1.86E-02(1.82E-07)	1.85E-02(8.89E-08)
WFG8	5	2.83E-01(4.35E-04)†	7.92E-01(3.52E-03)†	3.57E-01(3.73E-04)†	2.81E-01(9.59E-04)†	2.39E-01(1.89E-04)†	1.68E-01(7.77E-05)
	25	6.72E-02(2.25E-05)†	5.31E-01(1.11E-03)†	7.51E-02(3.81E-05)†	9.96E-02(1.87E-05)†	2.85E-02(3.62E-06)†	2.48E-02(1.82E-06)
	50	4.55E-02(1.20E-05)†	3.99E-01(1.05E-03)†	4.77E-02(1.24E-05)†	8.59E-02(7.81E-06)†	1.88E-02(3.35E-07)	1.86E-02(2.99E-07)
	200	3.27E-02(2.80E-06)†	1.70E-01(2.21E-04)†	3.24E-02(2.67E-06)†	8.07E-02(6.40E-06)†	1.85E-02(1.03E-07)	1.85E-02(9.78E-08)
WFG9	5	2.82E-01(1.89E-03)‡	8.82E-01(1.21E-02)†	5.65E-01(1.01E-02)	1.59E-01(1.02E-03)‡	6.32E-01(2.49E-02)†	5.43E-01(2.34E-02)
	25	6.72E-02(2.25E-05)	5.31E-01(1.11E-03)†	7.51E-02(3.81E-05)	9.13E-02(8.22E-06)	2.23E-01(4.27E-02)	2.40E-01(3.89E-02)
	50	4.71E-02(6.57E-06)	2.84E-01(1.44E-02)	4.77E-02(6.77E-06)	8.81E-02(1.16E-05)	2.86E-01(3.19E-02)	2.51E-01(3.66E-02)
	200	3.76E-02(7.49E-06)‡	1.20E-01(1.39E-02)‡	3.91E-02(2.45E-06)†	8.14E-02(7.27E-06)‡	2.66E-01(3.33E-02)	2.99E-01(3.11E-02)

TABLE 122
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 3 TO 2 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.59E+02(1.96E+02)†	4.50E+01(6.92E+01)‡	1.93E+02(3.91E+02)†	2.81E+02(1.70E+03)†	5.79E+01(6.53E+01)‡	8.72E+01(1.28E+03)
	25	2.65E+01(3.85E+01)†	1.85E-01(7.21E-03)‡	4.20E+01(1.77E+02)†	9.10E+01(4.31E+02)†	9.42E+00(1.36E+01)†	2.87E+00(2.91E+00)
	50	6.31E+00(5.48E+00)†	8.00E-03(8.00E-06)	6.32E+00(4.77E+00)†	5.69E+01(5.88E+01)†	9.07E-01(1.15E+00)†	1.95E-01(8.70E-02)
	200	2.81E-04(8.10E-08)†	1.22E-04(3.91E-10)†	3.43E-04(7.25E-08)†	1.66E+00(2.01E+00)†	4.99E-05(3.94E-09)	4.25E-05(1.72E-09)
F2	5	1.79E-01(1.03E-02)†	1.38E-01(4.03E-04)†	1.38E-01(6.24E-04)†	9.72E-01(5.39E-01)†	2.74E-02(5.15E-05)†	1.27E-02(1.85E-05)
	25	1.28E-03(2.71E-08)†	7.03E-03(3.28E-07)†	1.28E-03(4.17E-08)†	2.20E-02(1.30E-07)†	1.22E-03(1.27E-07)	1.13E-03(1.77E-07)
	50	3.78E-04(1.35E-09)	2.65E-03(2.84E-08)†	3.94E-04(1.89E-09)	2.15E-02(2.14E-08)†	3.88E-04(4.91E-08)	5.41E-04(1.15E-07)
	200	1.71E-04(4.04E-10)†	2.06E-04(1.75E-10)†	1.81E-04(8.43E-10)†	2.17E-02(9.32E-10)†	7.55E-05(3.33E-09)	8.46E-05(4.19E-09)
F3	5	2.88E+02(6.49E+02)†	9.32E+01(2.03E+02)‡	3.65E+02(9.88E+02)†	7.49E+02(1.65E+04)†	1.26E+02(2.99E+02)‡	1.83E+02(3.86E+03)
	25	6.45E+01(1.83E+02)†	4.85E-01(3.35E-02)‡	7.01E+01(1.73E+02)†	2.48E+02(3.85E+03)†	2.33E+01(7.31E+01)†	1.39E+01(1.36E+02)
	50	1.39E+01(2.41E+01)†	2.11E-02(5.56E-05)‡	1.29E+01(2.96E+01)†	1.33E+02(4.83E+02)†	2.91E+00(5.32E+00)†	1.86E-01(2.27E-01)
	200	5.22E-04(3.47E-07)†	6.43E-04(5.57E-09)†	6.15E-04(8.09E-07)†	2.38E+00(4.84E+00)†	1.23E-04(7.53E-09)	1.68E-04(2.20E-08)
F4	5	1.29E+00(4.49E-03)†	1.86E-01(1.60E-03)†	3.93E-01(1.65E-03)†	1.73E-01(6.21E-03)†	1.86E-01(1.92E-03)†	4.44E-02(1.95E-04)
	25	6.57E-03(2.53E-06)†	1.01E-02(1.53E-06)†	2.12E-03(1.93E-07)†	2.25E-02(6.76E-07)†	3.21E-03(1.79E-06)†	1.71E-03(5.34E-07)
	50	5.94E-04(6.64E-09)†	3.39E-03(7.79E-08)†	4.50E-04(2.35E-09)†	2.09E-02(2.40E-07)†	5.55E-04(2.89E-08)†	4.40E-04(5.31E-08)
	200	1.67E-04(3.05E-10)†	2.81E-04(2.99E-10)†	1.69E-04(4.75E-10)†	2.17E-02(4.66E-09)†	9.20E-05(1.90E-09)	7.80E-05(5.47E-10)
WFG1	5	3.71E-01(4.73E-04)†	7.45E-01(4.61E-04)†	4.18E-01(5.33E-04)†	1.56E+00(1.24E-04)†	3.88E-01(2.83E-04)†	3.09E-01(3.19E-04)
	25	9.29E-02(6.06E-05)†	3.58E-01(4.82E-04)†	1.06E-01(6.05E-05)†	1.57E+00(4.02E-06)†	1.05E-01(6.01E-05)†	7.79E-02(7.52E-04)
	50	3.67E-02(1.17E-05)†	2.23E-01(2.88E-04)†	4.02E-02(1.35E-05)†	1.57E+00(6.40E-08)†	3.57E-02(1.41E-05)†	2.83E-02(1.74E-04)
	200	8.25E-03(5.56E-07)†	7.28E-02(2.60E-05)†	8.21E-03(4.23E-07)†	1.57E+00(1.27E-07)†	5.44E-03(2.11E-07)	5.37E-03(2.74E-06)
WFG2	5	1.43E-01(8.49E-04)†	5.06E-01(7.74E-03)†	1.26E-01(1.22E-04)†	7.54E-01(6.17E-04)†	1.04E-01(2.64E-04)†	5.67E-02(6.54E-05)
	25	6.08E-03(7.40E-07)†	9.09E-02(2.12E-05)†	6.75E-03(1.17E-06)†	7.75E-01(8.23E-06)†	5.49E-03(5.08E-07)†	3.78E-03(4.37E-07)
	50	1.71E-03(7.06E-08)†	6.69E-02(1.52E-06)†	2.05E-03(1.55E-07)†	7.71E-01(1.51E-05)†	1.33E-03(3.65E-08)†	1.07E-03(1.94E-08)
	200	6.84E-04(1.24E-09)†	4.93E-02(2.29E-07)†	7.03E-04(1.42E-09)†	7.66E-01(2.21E-06)†	5.85E-04(2.17E-09)	5.99E-04(1.61E-09)
WFG3	5	5.12E-01(1.97E-03)†	5.23E-01(3.57E-03)†	4.45E-01(8.18E-04)†	3.43E+00(6.27E-03)†	3.71E-01(8.52E-04)†	2.40E-01(1.42E-03)
	25	2.18E-02(1.83E-05)‡	5.77E-02(9.93E-06)†	1.91E-02(7.11E-06)‡	3.29E+00(2.62E-05)†	5.75E-02(1.07E-04)†	3.29E-02(2.04E-05)
	50	6.14E-03(8.06E-07)‡	2.82E-02(2.99E-06)†	6.02E-03(1.02E-06)‡	3.29E+00(8.86E-07)†	2.13E-02(9.60E-06)†	1.11E-02(1.46E-06)
	200	7.80E-04(2.22E-08)	7.80E-03(1.93E-07)†	7.53E-04(1.96E-08)	3.29E+00(3.19E-09)†	1.51E-03(1.68E-07)†	7.92E-04(6.57E-08)
WFG4	5	9.74E-02(6.08E-05)†	3.34E-01(5.65E-04)†	1.34E-01(8.79E-05)†	7.67E-01(1.85E-03)†	6.67E-02(2.77E-05)†	5.52E-02(1.86E-05)
	25	1.36E-02(4.84E-06)†	9.68E-02(2.18E-05)†	1.79E-02(2.80E-06)†	6.41E-01(1.62E-04)†	2.97E-03(4.37E-07)†	2.46E-03(4.57E-07)
	50	4.82E-03(5.99E-07)†	7.04E-02(9.01E-06)†	6.03E-03(7.96E-07)†	5.91E-01(1.43E-04)†	3.33E-04(5.13E-09)†	2.36E-04(3.15E-09)
	200	9.88E-04(6.76E-08)†	4.17E-02(3.36E-06)†	1.05E-03(2.90E-08)†	5.66E-01(4.01E-07)†	1.23E-04(1.87E-11)	1.23E-04(2.34E-11)
WFG5	5	1.33E-01(2.59E-04)†	2.43E-01(3.76E-04)†	1.75E-01(1.68E-04)†	1.04E-01(1.03E-04)‡	1.20E-01(2.63E-04)	1.24E-01(2.66E-04)
	25	6.26E-02(9.73E-06)†	7.57E-02(1.47E-05)†	6.82E-02(4.07E-06)†	7.97E-02(5.23E-07)†	3.01E-02(6.39E-06)†	2.93E-02(6.87E-06)
	50	5.75E-02(1.09E-05)†	6.61E-02(1.94E-06)†	6.05E-02(8.64E-06)†	8.00E-02(7.17E-07)†	2.75E-02(8.34E-09)†	2.74E-02(1.19E-08)
	200	5.43E-02(1.11E-05)†	6.06E-02(1.10E-06)†	5.76E-02(1.09E-05)†	8.00E-02(1.84E-07)†	2.73E-02(5.10E-10)	2.73E-02(4.36E-10)
WFG6	5	1.71E-01(2.69E-04)†	5.19E-01(2.34E-03)†	2.44E-01(1.26E-03)†	5.58E-01(2.87E-04)†	2.34E-01(3.83E-03)†	9.84E-02(7.29E-04)
	25	2.52E-02(2.74E-05)†	7.63E-02(2.53E-05)†	2.98E-02(1.65E-05)†	4.74E-01(5.60E-05)†	1.57E-02(1.40E-05)†	8.79E-03(1.76E-06)
	50	1.18E-02(5.65E-06)†	3.98E-02(8.58E-06)†	1.53E-02(9.65E-06)†	4.62E-01(1.18E-06)†	3.26E-03(4.49E-07)†	2.17E-03(2.36E-07)
	200	4.21E-03(4.19E-06)†	1.22E-02(4.86E-07)†	5.42E-03(2.25E-06)†	4.57E-01(4.47E-08)†	3.99E-04(3.34E-08)	4.87E-04(8.85E-08)
WFG7	5	1.54E-01(9.42E-05)†	7.27E-01(4.34E-03)†	2.07E-01(2.10E-04)†	3.72E-01(1.18E-03)†	1.39E-01(1.29E-04)†	7.13E-02(5.81E-05)
	25	1.10E-02(2.43E-06)†	2.36E-01(2.13E-03)†	1.35E-02(3.13E-06)†	8.91E-02(8.11E-06)†	6.85E-03(9.99E-07)†	4.32E-03(3.70E-07)
	50	2.81E-03(3.08E-07)†	6.52E-02(6.38E-05)†	3.55E-03(5.22E-07)†	7.66E-02(2.75E-06)†	1.04E-03(7.19E-08)†	7.92E-04(3.11E-08)
	200	2.07E-04(8.85E-10)†	1.32E-02(9.42E-07)†	2.12E-04(9.80E-10)†	7.67E-02(2.89E-07)†	1.21E-04(1.82E-11)	1.21E-04(1.17E-11)
WFG8	5	1.57E-01(1.79E-04)†	7.38E-01(8.12E-04)†	2.08E-01(1.84E-04)†	3.82E-01(1.42E-03)†	1.40E-01(1.30E-04)†	7.09E-02(4.00E-05)
	25	1.10E-02(2.43E-06)†	2.36E-01(2.13E-03)†	1.35E-02(3.13E-06)†	8.94E-02(8.42E-06)†	6.58E-03(1.12E-06)†	4.70E-03(4.59E-07)
	50	3.06E-03(1.96E-07)†	6.58E-02(6.59E-05)†	3.66E-03(4.17E-07)†	7.68E-02(2.24E-06)†	1.09E-03(5.03E-08)†	7.12E-04(1.48E-08)
	200	2.06E-04(6.94E-10)†	1.32E-02(9.07E-07)†	2.34E-04(1.41E-09)†	7.67E-02(1.58E-07)†	1.23E-04(1.44E-11)	1.21E-04(2.05E-11)
WFG9	5	1.35E-01(3.75E-04)‡	7.04E-01(3.96E-03)†	3.41E-01(1.19E-02)‡	2.07E-01(1.79E-03)‡	4.32E-01(2.59E-02)†	3.94E-01(3.03E-02)
	25	1.10E-02(2.43E-06)	2.36E-01(2.13E-03)	1.35E-02(3.13E-06)	8.16E-02(2.71E-06)	1.63E-01(2.70E-02)	1.84E-01(2.70E-02)
	50	1.11E-02(3.83E-06)	8.26E-02(1.75E-02)	1.23E-02(1.64E-06)	7.90E-02(2.03E-06)	2.24E-01(2.21E-02)	1.98E-01(2.62E-02)
	200	2.63E-03(2.03E-06)‡	4.16E-02(7.85E-03)‡	4.17E-03(1.82E-06)‡	8.02E-02(3.08E-06)‡	2.09E-01(2.33E-02)	2.36E-01(2.17E-02)

TABLE 123
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 2 TO 3 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.10E+02(8.49E+01)†	1.51E+01(1.66E+01)‡	1.52E+02(2.51E+02)†	2.19E+02(3.14E+03)†	4.70E+01(7.86E+01)	4.23E+01(3.54E+02)
	25	1.48E+01(3.84E+01)†	3.53E-02(3.80E-05)‡	3.02E+01(1.38E+02)†	6.62E+01(3.40E+02)†	3.22E+00(2.75E+00)†	7.05E-01(2.48E-01)
	50	2.21E+00(1.04E+00)†	1.02E-02(2.24E-06)‡	2.03E+00(9.12E-01)†	4.55E+01(7.02E+01)†	1.94E-01(1.18E-01)†	2.46E-02(7.26E-03)
	200	3.79E-03(4.06E-05)†	1.98E-03(7.09E-09)†	6.13E-03(6.12E-05)†	9.88E+00(3.16E+01)†	1.28E-02(2.26E-03)†	1.60E-03(2.96E-09)
F2	5	7.34E-02(3.73E-03)†	1.47E-01(4.42E-04)†	6.41E-02(1.09E-04)†	3.67E-01(2.41E-02)†	3.11E-02(1.18E-04)†	9.78E-03(1.91E-06)
	25	7.57E-03(1.49E-07)†	3.52E-02(1.05E-05)†	7.79E-03(2.47E-07)†	3.72E-02(3.96E-05)†	6.72E-03(5.59E-07)†	5.25E-03(2.73E-07)
	50	8.12E-03(1.91E-07)†	2.05E-02(1.97E-06)†	8.05E-03(3.77E-07)†	2.48E-02(1.42E-06)†	5.31E-03(1.15E-07)†	4.74E-03(6.86E-08)
	200	8.09E-03(1.67E-07)†	6.81E-03(7.00E-08)†	8.33E-03(2.72E-07)†	2.07E-02(3.13E-07)†	4.45E-03(1.38E-08)†	4.39E-03(9.96E-09)
F3	5	2.29E+02(4.24E+02)†	3.74E+01(6.18E+01)‡	3.00E+02(9.00E+02)†	5.55E+02(6.61E+03)†	1.17E+02(3.35E+02)	1.01E+02(1.91E+03)
	25	4.34E+01(2.27E+02)†	1.23E-01(4.23E-04)‡	5.46E+01(2.42E+02)†	1.99E+02(3.93E+03)†	8.73E+00(1.58E+01)†	3.95E+00(2.81E+01)
	50	4.84E+00(5.83E+00)†	3.54E-02(2.05E-05)†	5.13E+00(1.17E+01)†	1.15E+02(1.46E+03)†	1.10E+00(1.70E+00)†	1.89E-02(2.43E-03)
	200	9.51E-02(2.12E-01)†	6.76E-03(2.82E-07)†	7.74E-03(4.84E-05)†	3.29E+01(3.08E+02)†	2.43E-02(1.18E-02)	4.36E-03(6.49E-09)
F4	5	7.78E-01(4.75E-03)†	9.00E-02(1.45E-03)†	1.61E-01(7.72E-04)†	9.81E-02(2.39E-02)†	8.09E-02(4.42E-04)†	2.29E-02(4.73E-03)
	25	4.04E-03(5.84E-07)†	2.77E-02(2.33E-04)†	6.36E-03(6.12E-06)†	1.39E-02(7.04E-05)†	6.58E-03(3.76E-07)†	3.23E-03(1.01E-06)
	50	7.45E-03(6.98E-07)†	2.61E-02(6.97E-05)†	7.76E-03(3.21E-07)†	1.57E-02(2.56E-05)†	4.91E-03(3.99E-08)†	2.65E-03(2.82E-08)
	200	8.12E-03(2.07E-07)†	8.56E-03(8.39E-07)†	8.11E-03(1.28E-07)†	1.76E-02(1.90E-06)†	4.41E-03(8.56E-09)†	2.51E-03(2.20E-08)
WFG1	5	3.42E-01(5.81E-04)†	8.21E-01(1.36E-03)†	4.06E-01(7.62E-04)†	8.96E-01(1.42E-04)†	3.92E-01(3.31E-04)†	2.85E-01(2.47E-04)
	25	8.26E-02(4.09E-05)†	4.35E-01(4.72E-04)†	9.28E-02(3.93E-05)†	8.93E-01(1.12E-04)†	9.51E-02(1.22E-04)†	6.08E-02(4.51E-04)
	50	5.17E-02(9.40E-06)†	2.97E-01(4.09E-04)†	5.50E-02(1.10E-05)†	8.83E-01(1.65E-04)†	4.50E-02(7.88E-06)†	3.38E-02(2.45E-04)
	200	5.08E-02(8.31E-06)†	1.26E-01(7.82E-05)†	5.16E-02(7.48E-06)†	8.71E-01(9.73E-05)†	2.88E-02(5.89E-07)	2.88E-02(7.52E-05)
WFG2	5	1.15E-01(2.38E-04)†	4.07E-01(1.15E-03)†	1.33E-01(1.06E-04)†	1.67E-01(1.35E-04)†	1.58E-01(6.51E-04)†	8.58E-02(3.87E-05)
	25	7.88E-02(2.91E-05)†	1.40E-01(5.47E-05)†	7.98E-02(3.90E-05)†	1.59E-01(5.01E-06)†	6.77E-02(1.55E-05)	6.94E-02(2.38E-05)
	50	8.07E-02(4.83E-05)†	1.09E-01(2.25E-05)†	8.08E-02(2.30E-05)†	1.62E-01(4.43E-06)†	6.84E-02(2.19E-05)†	6.61E-02(8.76E-06)
	200	8.36E-02(6.49E-05)†	8.07E-02(3.14E-06)†	8.34E-02(4.22E-05)†	1.62E-01(1.24E-06)†	6.70E-02(3.35E-06)	6.75E-02(3.59E-06)
WFG3	5	2.92E-01(3.79E-03)	8.59E-01(4.98E-03)†	4.87E-01(3.03E-03)†	1.54E+00(2.32E-03)†	5.89E-01(1.74E-03)†	2.71E-01(3.94E-03)
	25	1.05E-02(2.87E-06)‡	8.37E-01(5.23E-05)†	3.06E-01(7.15E-03)‡	1.52E+00(4.31E-04)†	5.02E-01(8.55E-04)†	3.49E-01(1.07E-02)
	50	3.67E-03(6.09E-07)‡	8.39E-01(3.63E-06)†	3.74E-01(1.25E-02)‡	1.52E+00(2.06E-04)†	5.31E-01(4.59E-04)†	4.44E-01(2.55E-03)
	200	9.61E-02(2.65E-02)‡	8.37E-01(4.65E-07)†	4.46E-01(2.77E-02)‡	1.53E+00(1.54E-04)†	5.31E-01(6.89E-05)‡	5.44E-01(2.23E-04)
WFG4	5	8.43E-02(5.54E-05)†	3.77E-01(1.04E-03)†	1.37E-01(8.48E-05)†	5.33E-01(1.39E-03)†	8.20E-02(6.18E-05)†	5.23E-02(1.16E-05)
	25	5.46E-02(7.04E-06)†	2.03E-01(1.48E-04)†	6.19E-02(1.06E-05)†	4.74E-01(7.81E-05)†	2.56E-02(1.78E-06)†	1.92E-02(3.91E-07)
	50	5.35E-02(8.31E-06)†	1.72E-01(5.44E-05)†	5.55E-02(9.19E-06)†	4.61E-01(6.71E-05)†	1.94E-02(3.18E-07)†	1.81E-02(2.28E-07)
	200	5.25E-02(1.19E-05)†	1.21E-01(1.46E-05)†	5.27E-02(8.26E-06)†	4.54E-01(2.15E-05)†	1.79E-02(1.62E-07)‡	1.82E-02(1.27E-07)
WFG5	5	1.22E-01(9.03E-05)†	2.97E-01(4.56E-04)†	1.69E-01(1.33E-04)†	8.94E-02(1.82E-05)	1.21E-01(3.62E-04)†	8.71E-02(2.20E-04)
	25	8.94E-02(6.96E-06)†	1.45E-01(1.04E-04)†	9.50E-02(1.31E-05)†	8.99E-02(9.02E-06)†	4.27E-02(3.14E-06)†	4.13E-02(3.09E-06)
	50	8.85E-02(9.53E-06)†	1.23E-01(3.97E-05)†	9.10E-02(6.84E-06)†	9.00E-02(3.52E-06)†	4.09E-02(9.02E-08)†	4.05E-02(3.56E-08)
	200	8.65E-02(3.37E-05)†	9.32E-02(1.51E-05)†	8.82E-02(1.17E-05)†	8.56E-02(1.26E-05)†	4.04E-02(2.40E-08)	4.04E-02(3.43E-08)
WFG6	5	1.36E-01(3.18E-04)†	5.39E-01(1.44E-03)†	2.12E-01(1.08E-03)†	8.49E-02(5.55E-05)	2.64E-01(1.54E-03)†	8.20E-02(4.04E-04)
	25	4.59E-02(3.01E-05)†	1.97E-01(8.22E-05)†	5.22E-02(2.35E-05)†	8.13E-02(1.63E-05)†	3.01E-02(7.44E-06)†	2.08E-02(6.44E-07)
	50	4.17E-02(6.34E-06)†	1.50E-01(4.16E-05)†	4.47E-02(1.47E-05)†	7.87E-02(3.24E-06)†	1.95E-02(2.75E-07)†	1.84E-02(2.55E-07)
	200	3.89E-02(6.72E-06)†	8.72E-02(1.81E-05)†	3.92E-02(6.02E-06)†	8.65E-02(2.75E-06)†	1.85E-02(2.04E-07)	1.85E-02(1.10E-07)
WFG7	5	1.16E-01(5.43E-05)†	8.35E-01(9.21E-03)†	1.66E-01(1.67E-04)†	2.25E-01(6.79E-04)†	1.51E-01(2.07E-04)†	5.65E-02(3.93E-05)
	25	3.37E-02(3.08E-06)†	3.92E-01(1.70E-03)†	3.53E-02(3.31E-06)†	1.01E-01(1.30E-05)†	2.14E-02(8.73E-07)†	1.88E-02(4.25E-07)
	50	3.18E-02(2.79E-06)†	2.56E-01(4.07E-04)†	3.15E-02(2.83E-06)†	8.73E-02(7.22E-06)†	1.82E-02(1.63E-07)	1.81E-02(2.62E-07)
	200	3.21E-02(2.79E-06)†	1.30E-01(5.44E-05)†	3.14E-02(1.91E-06)†	7.96E-02(4.88E-06)†	1.84E-02(1.02E-07)	1.85E-02(1.25E-07)
WFG8	5	1.15E-01(7.78E-05)†	8.51E-01(1.12E-03)†	1.66E-01(1.29E-04)†	2.32E-01(4.55E-04)†	1.45E-01(2.41E-04)†	5.68E-02(2.17E-05)
	25	3.37E-02(3.08E-06)†	3.92E-01(1.70E-03)†	3.53E-02(3.31E-06)†	9.98E-02(1.74E-05)†	2.14E-02(9.17E-07)†	1.88E-02(2.96E-07)
	50	3.13E-02(3.10E-06)†	2.59E-01(2.81E-04)†	3.16E-02(4.02E-06)†	8.67E-02(1.05E-05)†	1.83E-02(1.76E-07)†	1.80E-02(2.10E-07)
	200	3.26E-02(2.03E-06)†	1.25E-01(3.90E-05)†	3.12E-02(3.07E-06)†	8.00E-02(3.40E-06)†	1.85E-02(1.20E-07)	1.85E-02(1.24E-07)
WFG9	5	9.14E-02(1.58E-04)‡	7.73E-01(1.47E-03)†	2.42E-01(9.74E-03)‡	1.43E-01(2.20E-04)‡	4.81E-01(5.76E-02)†	4.13E-01(4.37E-02)
	25	3.37E-02(3.08E-06)	3.92E-01(1.70E-03)†	3.53E-02(3.31E-06)	9.00E-02(9.89E-06)	2.05E-01(3.83E-02)	2.23E-01(3.63E-02)
	50	3.64E-02(4.55E-06)	1.65E-01(2.06E-02)	3.81E-02(3.38E-06)	8.65E-02(7.00E-06)	2.78E-01(3.02E-02)	2.45E-01(3.51E-02)
	200	3.18E-02(6.32E-06)‡	9.88E-02(1.52E-02)‡	3.40E-02(5.64E-06)‡	8.17E-02(8.99E-06)‡	2.66E-01(3.34E-02)	2.99E-01(3.12E-02)

TABLE 124
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 3 TO 4 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	9.69E+01(1.35E+02)†	5.06E+00(5.01E+00)‡	1.49E+02(2.54E+02)†	4.86E+02(3.68E+04)†	3.18E+01(5.03E+01)	2.86E+01(1.99E+02)
	25	8.33E+00(1.68E+01)†	2.82E-02(5.69E-06)‡	2.39E+01(3.04E+02)†	8.20E+02(9.29E+04)†	1.17E+00(6.73E-01)†	3.41E-01(1.92E-01)
	50	9.55E-01(4.51E-01)†	1.76E-02(1.95E-06)†	7.17E-01(4.30E-01)†	1.08E+03(8.62E+03)†	7.49E-02(1.49E-02)†	1.71E-02(6.33E-04)
	200	1.83E-01(4.66E-02)†	8.41E-03(9.88E-08)‡	3.04E-01(7.15E-02)†	1.22E+03(9.23E+03)†	4.56E-02(1.19E-02)†	1.64E-02(2.41E-03)
F2	5	5.97E-02(1.38E-03)†	1.55E-01(3.59E-04)†	6.69E-02(1.17E-04)†	3.56E+00(9.40E+00)†	5.55E-02(4.65E-05)†	2.46E-02(1.76E-06)
	25	2.92E-02(8.10E-07)†	6.92E-02(2.11E-05)†	3.71E-02(3.83E-05)†	1.25E+01(2.39E+00)†	2.36E-02(1.56E-06)†	2.00E-02(3.88E-07)
	50	3.35E-02(3.24E-06)†	4.98E-02(7.11E-06)†	4.11E-02(5.09E-05)†	1.60E+01(1.22E+00)†	2.06E-02(3.65E-07)†	1.96E-02(8.79E-08)
	200	4.09E-02(2.62E-05)†	2.56E-02(5.79E-07)†	4.12E-02(2.83E-05)†	1.61E+01(2.24E+00)†	2.09E-02(3.09E-07)	2.09E-02(4.85E-07)
F3	5	2.21E+02(4.87E+02)†	1.18E+01(1.75E+01)‡	2.97E+02(1.12E+03)†	1.00E+03(6.39E+04)†	8.92E+01(3.38E+02)†	6.92E+01(1.15E+03)
	25	3.22E+01(2.68E+02)†	1.09E-01(9.64E-05)	5.78E+01(1.03E+03)†	1.64E+03(2.25E+05)†	3.01E+00(4.32E+00)‡	3.61E+00(7.70E+01)
	50	2.48E+00(1.08E+01)†	6.31E-02(3.19E-05)†	1.84E+00(9.08E+00)†	2.21E+03(1.83E+05)†	1.78E-01(6.58E-02)†	5.42E-02(1.80E-02)
	200	2.53E-01(1.66E-01)†	2.78E-02(2.88E-06)†	4.50E-01(7.50E-01)†	2.77E+03(1.94E+04)†	6.53E-02(1.43E-02)†	2.31E-02(1.90E-04)
F4	5	5.09E-01(5.42E-03)†	5.64E-02(3.04E-04)†	1.12E-01(3.39E-04)†	9.55E-02(4.28E-03)†	7.93E-02(6.50E-04)†	2.05E-02(8.35E-04)
	25	2.33E-02(7.92E-06)†	3.47E-02(3.71E-04)†	5.44E-02(3.25E-04)†	1.64E-02(3.13E-05)†	2.20E-02(1.24E-06)†	1.22E-02(1.03E-05)
	50	3.54E-02(1.15E-05)†	4.41E-02(6.34E-05)†	5.51E-02(6.68E-05)†	9.71E-03(3.59E-06)‡	1.94E-02(1.58E-07)†	1.20E-02(8.23E-06)
	200	4.70E-02(6.52E-05)†	2.65E-02(1.87E-06)†	4.43E-02(9.10E-05)†	7.09E-03(7.81E-07)‡	2.11E-02(1.44E-07)†	1.18E-02(1.06E-05)
WFG1	5	3.53E-01(9.55E-04)†	8.32E-01(3.65E-03)†	4.15E-01(9.31E-04)†	1.21E+00(2.05E-02)†	3.86E-01(8.87E-04)†	2.69E-01(1.80E-04)
	25	1.69E-01(2.18E-04)†	4.18E-01(4.45E-04)†	1.77E-01(1.97E-04)†	1.11E+00(6.48E-03)†	1.50E-01(9.24E-05)†	1.25E-01(1.85E-03)
	50	1.78E-01(7.31E-05)†	3.06E-01(2.05E-04)†	1.81E-01(7.06E-05)†	1.15E+00(9.70E-04)†	1.28E-01(5.00E-05)†	1.16E-01(2.88E-03)
	200	1.92E-01(5.92E-05)†	1.91E-01(3.77E-05)†	1.93E-01(7.14E-05)†	1.26E+00(1.61E-03)†	1.15E-01(1.71E-05)	1.17E-01(1.24E-03)
WFG2	5	2.95E-01(1.95E-04)	4.64E-01(1.16E-03)†	3.04E-01(1.51E-04)†	2.42E-01(4.63E-06)‡	3.33E-01(5.63E-04)†	2.91E-01(2.18E-04)
	25	3.14E-01(4.45E-04)†	2.80E-01(4.44E-05)‡	3.26E-01(5.37E-04)†	2.41E-01(6.84E-07)‡	2.89E-01(1.13E-04)‡	2.97E-01(1.87E-04)
	50	3.49E-01(6.24E-04)†	2.70E-01(2.33E-05)	3.65E-01(8.64E-04)†	2.40E-01(6.67E-07)‡	2.85E-01(9.16E-05)†	2.70E-01(7.58E-05)
	200	4.29E-01(2.52E-03)†	2.65E-01(9.75E-06)†	4.21E-01(1.91E-03)†	2.41E-01(7.25E-07)‡	2.58E-01(1.53E-05)	2.58E-01(1.54E-05)
WFG3	5	4.18E-01(9.51E-03)‡	1.64E+00(5.12E-03)†	8.96E-01(1.23E-02)†	9.78E-01(3.81E-04)†	9.75E-01(3.75E-03)†	5.49E-01(3.70E-02)
	25	2.72E-02(5.29E-03)‡	1.76E+00(9.52E-05)†	1.25E+00(9.30E-03)†	9.12E-01(2.46E-04)‡	1.20E+00(9.35E-04)	1.07E+00(9.03E-02)
	50	6.34E-02(2.14E-02)‡	1.78E+00(2.94E-05)†	1.41E+00(2.36E-03)†	9.05E-01(7.72E-05)‡	1.31E+00(6.92E-04)†	1.23E+00(2.65E-03)
	200	1.46E+00(3.14E-03)†	1.78E+00(4.56E-06)†	1.48E+00(1.62E-03)†	8.94E-01(1.35E-05)‡	1.34E+00(1.68E-04)	1.32E+00(2.99E-03)
WFG4	5	1.58E-01(4.33E-05)†	4.33E-01(1.05E-03)†	2.42E-01(2.26E-04)†	5.13E-01(3.99E-03)†	1.80E-01(1.68E-04)†	1.24E-01(1.47E-05)
	25	1.75E-01(1.48E-05)†	2.76E-01(1.24E-04)†	1.91E-01(5.57E-05)†	4.31E-01(4.65E-04)†	1.03E-01(6.69E-06)†	9.76E-02(2.94E-06)
	50	1.80E-01(4.05E-05)†	2.42E-01(7.78E-05)†	1.87E-01(2.77E-05)†	4.22E-01(5.59E-04)†	9.65E-02(5.13E-06)	9.73E-02(4.87E-06)
	200	1.82E-01(3.80E-05)†	1.81E-01(2.65E-05)†	1.82E-01(2.38E-05)†	4.01E-01(6.06E-04)†	9.81E-02(4.05E-06)	9.80E-02(3.22E-06)
WFG5	5	1.84E-01(6.93E-05)†	3.45E-01(9.94E-04)†	2.80E-01(3.24E-04)†	7.15E-02(6.59E-05)‡	1.71E-01(1.62E-04)†	1.51E-01(9.60E-05)
	25	1.86E-01(2.09E-05)†	2.16E-01(8.14E-05)†	2.03E-01(5.50E-05)†	7.65E-02(1.20E-04)‡	1.17E-01(8.68E-06)†	1.13E-01(4.77E-06)
	50	1.88E-01(3.67E-05)†	1.93E-01(2.46E-05)†	1.97E-01(4.58E-05)†	8.49E-02(9.55E-05)‡	1.13E-01(3.29E-06)	1.13E-01(3.48E-06)
	200	1.93E-01(8.02E-05)†	1.57E-01(1.00E-05)†	1.93E-01(2.69E-05)†	7.80E-02(3.30E-05)‡	1.16E-01(2.55E-06)‡	1.17E-01(2.33E-06)
WFG6	5	1.97E-01(2.86E-04)†	5.87E-01(2.05E-03)†	2.95E-01(1.07E-03)†	1.05E-01(5.99E-05)‡	3.05E-01(1.30E-03)†	1.45E-01(1.33E-04)
	25	1.68E-01(2.75E-05)†	2.85E-01(1.18E-04)†	1.73E-01(3.18E-05)†	1.08E-01(2.11E-05)†	1.08E-01(8.63E-06)†	9.76E-02(5.66E-06)
	50	1.74E-01(2.47E-05)†	2.34E-01(6.49E-05)†	1.80E-01(3.56E-05)†	1.01E-01(2.80E-05)†	9.79E-02(5.74E-06)	9.69E-02(6.43E-06)
	200	1.82E-01(1.37E-05)†	1.58E-01(1.89E-05)†	1.81E-01(3.73E-05)†	1.13E-01(2.63E-05)†	9.82E-02(3.63E-06)	9.84E-02(4.69E-06)
WFG7	5	1.99E-01(6.98E-05)†	7.42E-01(2.08E-02)†	2.55E-01(2.27E-04)†	2.48E-01(8.21E-04)†	2.06E-01(2.40E-04)†	1.19E-01(3.30E-05)
	25	1.84E-01(3.27E-05)†	4.82E-01(1.39E-03)†	1.87E-01(5.88E-05)†	9.66E-02(7.43E-05)†	9.83E-02(4.22E-06)	9.39E-02(3.06E-06)
	50	1.94E-01(4.35E-05)†	3.61E-01(3.50E-04)†	1.96E-01(4.92E-05)†	7.43E-02(1.90E-05)‡	9.48E-02(4.23E-06)	9.44E-02(5.34E-06)
	200	2.01E-01(4.17E-05)†	2.21E-01(1.44E-04)†	1.97E-01(3.56E-05)†	5.10E-02(3.01E-05)‡	9.97E-02(2.61E-06)	1.00E-01(2.32E-06)
WFG8	5	2.00E-01(9.79E-05)†	7.29E-01(1.28E-02)†	2.53E-01(1.75E-04)†	2.53E-01(1.07E-03)†	2.00E-01(1.50E-04)†	1.22E-01(2.69E-05)
	25	1.84E-01(3.27E-05)†	4.82E-01(1.39E-03)†	1.87E-01(5.88E-05)†	9.71E-02(4.61E-05)†	9.84E-02(5.16E-06)†	9.39E-02(7.07E-06)
	50	1.92E-01(5.17E-05)†	3.70E-01(2.84E-04)†	1.95E-01(4.49E-05)†	7.59E-02(3.72E-05)‡	9.44E-02(6.82E-06)	9.53E-02(2.71E-06)
	200	2.02E-01(6.03E-05)†	2.22E-01(1.42E-04)†	1.98E-01(4.96E-05)†	5.05E-02(2.88E-05)‡	9.98E-02(2.43E-06)†	1.01E-01(2.34E-06)
WFG9	5	1.76E-01(9.52E-05)‡	7.85E-01(4.49E-03)†	2.60E-01(3.09E-03)‡	1.47E-01(1.95E-04)‡	5.46E-01(7.49E-02)†	4.78E-01(4.44E-02)
	25	1.84E-01(3.27E-05)	4.82E-01(1.39E-03)†	1.87E-01(5.88E-05)	9.42E-02(1.38E-05)‡	2.88E-01(4.13E-02)	3.11E-01(4.02E-02)
	50	1.71E-01(4.87E-05)	2.43E-01(2.33E-02)	1.77E-01(3.08E-05)	8.44E-02(4.35E-05)‡	3.68E-01(3.38E-02)	3.36E-01(4.00E-02)
	200	1.78E-01(6.25E-05)‡	1.73E-01(1.78E-02)‡	1.78E-01(3.51E-05)‡	6.29E-02(4.97E-05)‡	3.58E-01(3.73E-02)	3.94E-01(3.50E-02)

C. Further Analysis of Our Knowledge Transfer Methods

The mean and standard deviation values of HV, GD and MS for optimized solutions at the last generation after optimization in the changing sequence of firstly increasing from 2 to 7 and then decreasing from 7 to 2 are presented in Tables 138, 139 and 140 of the supplementary file, respectively. It is clear that DTAEAv1 gets significantly better quality of optimized solution than DTAEA on almost all problems except for WFG2 and WFG9. In addition, it can be also seen from those tables that KTDMOEA significantly outperforms KTDMOEAv1 on all test problems regarding HV values.

TABLE 125
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 4 TO 5 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	9.24E+01(1.84E+02)†	1.40E+00(6.31E-01)‡	1.36E+02(2.43E+02)†	5.40E+02(2.51E+04)†	2.06E+01(2.42E+01)	1.79E+01(1.34E+02)
	25	7.45E+00(3.56E+01)†	2.74E-02(1.84E-06)‡	2.85E+01(9.59E+02)†	9.37E+02(2.47E+04)†	4.20E-01(5.77E-01)	1.63E-01(3.42E-02)
	50	1.57E+00(1.59E+00)†	2.47E-02(1.86E-06)‡	1.33E+00(2.11E+00)†	1.10E+03(1.15E+04)†	8.07E-02(2.24E-02)†	2.78E-02(2.48E-03)
	200	6.20E+01(1.48E+03)†	1.70E-02(2.63E-07)‡	8.85E+01(1.27E+03)†	1.29E+03(8.85E+03)†	7.41E-02(2.05E-02)†	3.63E-02(4.47E-03)
F2	5	8.03E-02(6.75E-04)†	1.71E-01(2.79E-04)†	1.14E-01(2.16E-04)†	2.22E+00(1.48E+00)†	8.64E-02(3.12E-05)†	5.04E-02(2.71E-06)
	25	6.95E-02(1.51E-05)†	1.05E-01(3.26E-05)†	1.45E-01(1.07E-03)†	8.69E+00(8.35E-01)†	4.72E-02(3.05E-06)†	4.20E-02(1.02E-06)
	50	1.07E-01(5.91E-04)†	8.64E-02(1.92E-05)†	2.09E-01(1.43E-03)†	8.68E+00(6.74E-01)†	4.19E-02(8.34E-07)†	4.02E-02(7.11E-07)
	200	3.05E-01(1.57E-03)†	5.51E-02(2.39E-06)†	3.71E-01(4.56E-03)†	8.62E+00(1.01E+00)†	4.04E-02(6.49E-07)	4.07E-02(7.02E-07)
F3	5	2.07E+02(7.02E+02)†	3.17E+00(2.45E+00)‡	2.80E+02(1.24E+03)†	4.54E+02(2.38E+04)†	6.23E+01(4.10E+02)†	5.07E+01(1.41E+03)
	25	2.13E+01(8.26E+01)†	1.14E-01(3.33E-05)	3.77E+01(4.02E+02)†	1.06E+03(1.61E+04)†	1.28E+00(9.14E+00)	2.29E+00(3.43E+01)
	50	1.13E+00(1.73E+00)†	9.53E-02(4.34E-05)‡	1.74E+00(7.04E+00)†	1.28E+03(1.02E+04)†	4.12E-01(7.27E-01)†	1.07E-01(3.58E-02)
	200	5.92E+01(2.33E+03)†	6.11E-02(5.02E-06)†	1.39E+02(7.71E+03)†	1.40E+03(6.46E+03)†	1.92E-01(1.35E-01)†	4.41E-02(3.47E-04)
F4	5	4.13E-01(3.82E-03)†	4.76E-02(2.31E-04)†	1.37E-01(3.66E-04)†	8.00E-02(2.08E-02)†	8.71E-02(2.27E-04)†	2.81E-02(1.82E-04)
	25	7.31E-02(1.56E-04)†	5.32E-02(1.72E-04)†	2.92E-01(3.00E-03)†	1.95E-02(3.95E-04)‡	4.33E-02(3.68E-06)†	2.18E-02(2.65E-05)
	50	1.55E-01(1.33E-03)†	6.24E-02(6.41E-05)†	4.42E-01(4.77E-03)†	7.99E-03(6.40E-06)‡	3.87E-02(8.53E-07)†	2.18E-02(1.81E-05)
	200	6.01E-01(6.62E-03)†	5.29E-02(2.16E-06)†	6.94E-01(2.81E-03)†	7.68E-03(1.12E-06)‡	3.91E-02(6.07E-07)†	2.29E-02(4.34E-05)
WFG1	5	4.13E-01(1.64E-03)†	7.65E-01(1.09E-02)†	4.67E-01(1.14E-03)†	1.24E+00(1.86E-02)†	3.80E-01(6.89E-04)†	3.15E-01(5.28E-04)
	25	3.08E-01(2.67E-04)†	4.40E-01(3.80E-04)†	3.15E-01(4.43E-04)†	1.16E+00(7.73E-03)†	2.66E-01(2.07E-04)†	2.48E-01(7.30E-03)
	50	3.26E-01(3.07E-04)†	3.67E-01(1.23E-04)†	3.29E-01(3.31E-04)†	1.25E+00(4.08E-03)†	2.58E-01(1.19E-04)†	2.35E-01(1.18E-02)
	200	3.54E-01(2.26E-04)†	3.07E-01(4.79E-05)†	3.55E-01(3.30E-04)†	1.33E+00(7.35E-04)†	2.30E-01(1.30E-04)	2.35E-01(5.07E-03)
WFG2	5	6.73E-01(1.03E-03)†	5.91E-01(1.54E-03)	6.64E-01(8.85E-04)†	3.12E-01(2.96E-06)‡	5.85E-01(1.26E-03)	5.80E-01(9.69E-04)
	25	6.97E-01(2.21E-03)†	4.34E-01(8.36E-05)‡	7.13E-01(1.50E-03)†	3.06E-01(2.92E-08)‡	5.46E-01(4.14E-04)‡	5.61E-01(4.51E-04)
	50	8.17E-01(3.60E-03)†	4.27E-01(5.11E-05)‡	8.32E-01(4.41E-03)†	3.06E-01(2.35E-09)‡	5.33E-01(3.44E-04)	5.31E-01(1.41E-04)
	200	8.74E-01(2.88E-03)†	4.38E-01(1.88E-05)‡	8.52E-01(4.29E-03)†	3.06E-01(2.35E-10)‡	5.39E-01(6.10E-05)	5.40E-01(5.50E-05)
WFG3	5	7.04E-01(3.56E-02)‡	2.46E+00(4.22E-03)†	1.68E+00(2.68E-02)†	9.09E-01(8.44E-04)‡	1.51E+00(6.60E-03)†	1.04E+00(7.84E-02)
	25	2.94E-01(1.73E-01)‡	2.67E+00(1.17E-04)†	2.27E+00(7.79E-03)†	8.58E-01(4.38E-06)‡	1.64E+00(8.47E-03)†	1.51E+00(5.72E-02)
	50	1.22E+00(6.61E-01)	2.69E+00(3.64E-05)†	2.37E+00(3.52E-03)†	8.52E-01(6.69E-06)‡	1.81E+00(4.18E-03)†	1.58E+00(4.73E-02)
	200	2.44E+00(3.55E-03)†	2.70E+00(9.05E-06)†	2.45E+00(2.57E-03)†	8.46E-01(6.52E-06)‡	1.93E+00(3.18E-03)	1.91E+00(9.64E-03)
WFG4	5	3.56E-01(2.22E-04)†	5.76E-01(7.54E-04)†	4.91E-01(3.57E-04)†	3.68E-01(2.17E-03)†	3.80E-01(2.09E-04)†	3.00E-01(9.58E-05)
	25	4.10E-01(7.10E-05)†	4.07E-01(2.46E-04)†	4.64E-01(2.87E-04)†	3.49E-01(4.79E-04)†	2.57E-01(3.47E-05)†	2.52E-01(3.65E-05)
	50	4.21E-01(1.09E-04)†	3.71E-01(1.41E-04)†	4.63E-01(2.08E-04)†	3.49E-01(4.96E-04)†	2.44E-01(3.67E-05)	2.46E-01(1.67E-05)
	200	4.33E-01(1.31E-04)†	3.20E-01(5.51E-05)†	4.39E-01(1.37E-04)†	3.92E-01(4.19E-04)†	2.35E-01(2.06E-05)‡	2.39E-01(3.11E-05)
WFG5	5	3.81E-01(1.84E-04)†	5.10E-01(1.12E-03)†	5.59E-01(4.58E-04)†	6.56E-02(1.12E-04)‡	3.50E-01(2.95E-04)†	3.40E-01(8.68E-05)
	25	4.21E-01(8.19E-05)†	3.98E-01(1.81E-04)†	4.86E-01(3.37E-04)†	5.09E-02(7.65E-05)‡	2.75E-01(3.75E-05)	2.73E-01(2.42E-05)
	50	4.35E-01(2.74E-04)†	3.64E-01(8.47E-05)†	4.65E-01(2.00E-04)†	5.42E-02(5.87E-05)‡	2.66E-01(4.50E-05)	2.68E-01(2.36E-05)
	200	4.47E-01(2.67E-04)†	3.18E-01(3.55E-05)†	4.44E-01(1.75E-04)†	5.68E-02(2.87E-05)‡	2.66E-01(2.34E-05)‡	2.69E-01(4.33E-05)
WFG6	5	3.99E-01(2.19E-04)†	7.14E-01(3.53E-03)†	5.53E-01(1.28E-03)†	5.98E-02(3.21E-04)‡	4.75E-01(7.94E-04)†	3.28E-01(1.13E-04)
	25	4.24E-01(1.03E-04)†	4.12E-01(4.16E-04)†	4.38E-01(1.07E-04)†	1.04E-01(2.18E-05)‡	2.73E-01(4.39E-05)†	2.56E-01(4.46E-05)
	50	4.40E-01(5.72E-05)†	3.63E-01(7.59E-05)†	4.43E-01(6.41E-05)†	1.14E-01(2.10E-05)‡	2.51E-01(4.15E-05)	2.50E-01(4.07E-05)
	200	4.50E-01(1.81E-04)†	3.06E-01(3.75E-05)†	4.49E-01(7.97E-05)†	1.23E-01(1.59E-05)‡	2.44E-01(1.25E-05)	2.43E-01(3.84E-05)
WFG7	5	4.42E-01(6.81E-05)†	6.15E-01(1.25E-02)†	5.24E-01(4.00E-04)†	2.88E-01(1.45E-03)	3.60E-01(2.86E-04)†	2.86E-01(9.21E-05)
	25	5.01E-01(2.39E-04)†	4.76E-01(1.36E-03)†	5.07E-01(2.75E-04)†	9.49E-02(4.38E-05)‡	2.50E-01(4.71E-05)†	2.40E-01(4.67E-05)
	50	5.15E-01(2.57E-04)†	4.43E-01(4.24E-04)†	5.23E-01(1.59E-04)†	7.12E-02(3.17E-05)‡	2.38E-01(4.34E-05)	2.35E-01(2.69E-05)
	200	5.22E-01(2.11E-04)†	3.89E-01(1.92E-04)†	5.21E-01(1.48E-04)†	4.95E-02(1.60E-05)‡	2.31E-01(1.84E-05)	2.31E-01(1.89E-05)
WFG8	5	4.34E-01(1.07E-04)†	6.53E-01(5.46E-03)†	5.24E-01(4.86E-04)†	2.94E-01(1.41E-03)	3.54E-01(2.15E-04)†	2.89E-01(7.21E-05)
	25	5.01E-01(2.39E-04)†	4.76E-01(1.36E-03)†	5.07E-01(2.75E-04)†	9.43E-02(5.24E-05)‡	2.49E-01(4.31E-05)†	2.41E-01(2.76E-05)
	50	5.18E-01(2.05E-04)†	4.37E-01(4.12E-04)†	5.15E-01(3.06E-04)†	7.24E-02(2.75E-05)‡	2.38E-01(4.12E-05)†	2.35E-01(2.36E-05)
	200	5.22E-01(2.24E-04)†	3.92E-01(3.06E-04)†	5.20E-01(2.31E-04)†	4.82E-02(1.10E-05)‡	2.31E-01(2.29E-05)	2.30E-01(2.46E-05)
WFG9	5	4.23E-01(2.09E-04)‡	7.46E-01(1.62E-02)	5.15E-01(1.94E-03)‡	1.76E-01(7.48E-04)‡	7.07E-01(7.40E-02)†	6.57E-01(4.03E-02)
	25	5.01E-01(2.39E-04)	4.76E-01(1.36E-03)	5.07E-01(2.75E-04)	9.52E-02(2.60E-05)‡	4.72E-01(5.33E-02)	4.96E-01(5.16E-02)
	50	4.96E-01(4.02E-04)	3.99E-01(2.06E-02)	5.02E-01(2.45E-04)	8.44E-02(2.10E-05)‡	5.59E-01(4.49E-02)	5.21E-01(5.27E-02)
	200	5.10E-01(2.38E-04)‡	3.34E-01(1.78E-02)‡	5.11E-01(1.63E-04)‡	7.09E-02(1.87E-05)‡	5.42E-01(5.06E-02)	5.83E-01(4.76E-02)

D. Performance Comparison on Other Changes in the NObj

$$m(t) = \begin{cases} 2, & t\text{=}0 \\ 3, & t\text{=}1 \\ m(t-1)+2, & t \in [2,3] \\ m(t-1)-2, & t \in [4,5] \\ m(t-1)-1, & t\text{=}6, \end{cases} \tag{5}$$

where t is the identifier of the change. In this sequence of change, NObj firstly increases from 2 to 3. Then there are four changes with the first two changes increasing the NObj by two and then two changes decreasing the NObj by two. Lastly, the NObj decreases from 3 to 2.

TABLE 126
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 5 TO 6 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.12E+02(2.37E+02)†	4.78E-01(7.51E-02)‡	1.30E+02(1.65E+02)†	4.82E+02(1.18E+04)†	9.71E+00(1.67E+01)	1.34E+01(1.60E+02)
	25	1.54E+01(4.49E+02)†	3.02E-02(9.05E-07)	5.69E+01(3.27E+03)†	8.99E+02(7.00E+03)†	8.80E-02(2.04E-02)	6.81E-02(5.23E-03)
	50	1.25E+01(2.89E+02)†	2.86E-02(6.38E-07)‡	1.42E+01(3.75E+02)†	1.03E+03(5.17E+03)†	3.94E-02(7.66E-04)‡	4.53E-02(6.32E-03)
	200	2.79E+02(1.97E+02)†	2.40E-02(2.26E-07)‡	2.72E+02(2.10E+02)†	1.16E+03(4.58E+03)†	7.01E-02(1.21E-02)†	3.84E-02(3.98E-03)
F2	5	1.16E-01(5.08E-04)†	1.70E-01(1.94E-04)†	1.82E-01(6.08E-04)†	1.66E+00(6.82E-01)†	1.15E-01(8.05E-05)†	7.27E-02(7.16E-06)
	25	1.58E-01(5.97E-04)†	1.21E-01(4.40E-05)†	3.94E-01(2.79E-03)†	4.76E+00(2.68E-01)†	6.48E-02(4.78E-06)†	6.00E-02(3.22E-06)
	50	3.84E-01(4.27E-03)†	1.03E-01(2.51E-05)†	6.10E-01(2.48E-03)†	4.58E+00(1.37E+00)†	5.69E-02(2.33E-06)	5.65E-02(1.85E-06)
	200	8.04E-01(2.50E-03)†	7.36E-02(1.89E-06)†	8.08E-01(2.32E-03)†	5.12E+00(1.83E-01)†	5.45E-02(1.74E-06)‡	5.57E-02(1.22E-06)
F3	5	2.40E+02(1.10E+03)†	1.26E+00(6.17E-01)‡	2.59E+02(1.31E+03)†	2.90E+02(6.56E+03)†	3.07E+01(2.25E+02)	3.67E+01(1.54E+03)
	25	2.69E+01(3.23E+02)†	1.17E-01(7.67E-05)	7.86E+01(5.94E+03)†	6.41E+02(1.26E+03)†	3.85E-01(3.82E-01)	1.13E+00(7.04E+00)
	50	5.58E+00(3.95E+01)†	1.08E-01(1.84E-05)‡	5.85E+00(1.30E+02)†	7.34E+02(4.04E+03)†	2.13E-01(9.98E-02)†	1.09E-01(2.89E-02)
	200	5.55E+02(2.96E+03)†	7.92E-02(5.28E-06)‡	5.98E+02(1.78E+03)†	8.06E+02(2.87E+03)†	2.11E-01(8.34E-02)†	1.01E-01(1.44E-02)
F4	5	3.78E-01(3.22E-03)†	4.31E-02(8.43E-05)	1.87E-01(4.01E-04)†	2.14E-02(1.93E-04)‡	1.13E-01(1.91E-04)†	3.90E-02(6.29E-05)
	25	2.23E-01(2.32E-03)†	6.22E-02(7.11E-05)†	6.36E-01(3.26E-03)†	8.81E-03(1.16E-05)‡	5.78E-02(1.28E-05)†	4.17E-02(2.54E-05)
	50	6.14E-01(7.94E-03)†	6.96E-02(2.56E-05)†	8.84E-01(1.51E-03)†	6.27E-03(5.00E-06)‡	5.33E-02(1.37E-06)†	4.57E-02(2.89E-05)
	200	1.07E+00(5.61E-04)†	6.64E-02(1.28E-06)†	1.08E+00(4.27E-04)†	4.19E-03(1.16E-06)‡	6.24E-02(8.08E-07)†	4.66E-02(1.35E-04)
WFG1	5	4.84E-01(1.12E-03)†	5.73E-01(1.20E-02)†	5.10E-01(1.22E-03)†	1.29E+00(9.93E-03)†	3.89E-01(6.19E-04)	3.80E-01(5.30E-04)
	25	4.37E-01(6.64E-04)†	3.75E-01(2.44E-04)†	4.49E-01(6.81E-04)†	1.27E+00(2.72E-03)†	3.71E-01(2.83E-04)†	3.27E-01(1.27E-02)
	50	4.62E-01(3.99E-04)†	3.39E-01(1.10E-04)†	4.60E-01(5.42E-04)†	1.32E+00(1.28E-03)†	3.47E-01(2.28E-04)†	3.14E-01(2.10E-02)
	200	4.83E-01(3.29E-04)†	3.08E-01(3.88E-05)†	5.02E-01(6.47E-04)†	1.35E+00(3.19E-04)†	2.98E-01(1.93E-04)	2.92E-01(7.98E-03)
WFG2	5	8.35E-01(1.74E-03)†	5.10E-01(2.49E-03)‡	8.30E-01(1.10E-03)†	2.83E-01(7.18E-07)‡	6.91E-01(1.51E-03)‡	7.32E-01(3.00E-03)
	25	1.08E+00(1.33E-02)†	3.97E-01(1.21E-04)‡	1.12E+00(1.06E-02)†	2.80E-01(8.10E-09)‡	6.68E-01(1.66E-03)‡	6.87E-01(1.24E-03)
	50	1.25E+00(8.78E-03)†	4.01E-01(1.04E-04)‡	1.21E+00(8.33E-03)†	2.80E-01(9.50E-10)‡	6.49E-01(5.83E-04)†	6.33E-01(4.15E-04)
	200	1.26E+00(6.61E-03)†	4.15E-01(3.09E-05)‡	1.27E+00(8.90E-03)†	2.80E-01(2.12E-12)‡	6.14E-01(1.11E-04)	6.12E-01(5.12E-05)
WFG3	5	1.25E+00(1.01E-01)‡	3.19E+00(5.47E-03)†	2.58E+00(3.53E-02)†	8.08E-01(2.49E-04)‡	2.09E+00(1.04E-02)†	1.86E+00(1.71E-01)
	25	1.81E+00(8.40E-01)‡	3.50E+00(2.70E-04)†	3.26E+00(8.69E-03)†	7.87E-01(1.69E-05)‡	2.80E+00(9.58E-03)	2.88E+00(4.37E-02)
	50	3.17E+00(1.24E-01)†	3.55E+00(1.21E-04)†	3.37E+00(4.23E-03)†	7.84E-01(9.70E-06)‡	2.92E+00(4.53E-03)‡	3.09E+00(7.86E-03)
	200	3.42E+00(5.45E-03)†	3.60E+00(7.04E-05)†	3.40E+00(4.98E-03)†	7.81E-01(5.37E-06)‡	2.94E+00(9.34E-04)	2.93E+00(3.27E-03)
WFG4	5	6.95E-01(7.25E-04)†	7.40E-01(3.24E-03)†	8.85E-01(3.97E-04)†	2.49E-01(2.15E-03)‡	6.51E-01(4.50E-04)†	5.32E-01(3.25E-04)
	25	8.01E-01(4.93E-04)†	4.08E-01(3.10E-04)‡	8.99E-01(7.94E-04)†	2.58E-01(1.07E-03)‡	4.28E-01(1.56E-04)†	4.18E-01(1.03E-04)
	50	8.54E-01(1.03E-03)†	3.66E-01(1.33E-04)‡	9.39E-01(1.32E-03)†	3.14E-01(3.90E-03)‡	3.86E-01(7.63E-05)‡	3.97E-01(1.30E-04)
	200	9.03E-01(4.95E-04)†	3.44E-01(9.49E-05)‡	9.10E-01(1.23E-03)†	3.35E-01(2.21E-04)‡	3.98E-01(8.74E-05)†	3.91E-01(1.08E-04)
WFG5	5	7.31E-01(5.75E-04)†	8.03E-01(1.75E-03)†	9.97E-01(7.20E-04)†	4.92E-02(8.13E-05)‡	5.69E-01(5.16E-04)‡	5.90E-01(4.72E-04)
	25	8.09E-01(6.71E-04)†	5.81E-01(5.98E-04)†	9.47E-01(4.12E-04)†	1.82E-02(7.27E-05)‡	4.49E-01(9.49E-05)	4.53E-01(1.09E-04)
	50	8.47E-01(1.10E-03)†	4.96E-01(4.22E-04)†	9.33E-01(8.63E-04)†	2.38E-02(9.79E-05)‡	4.37E-01(6.95E-05)	4.40E-01(1.10E-04)
	200	9.02E-01(6.24E-04)†	4.22E-01(1.29E-04)	9.09E-01(4.74E-04)†	2.10E-02(5.96E-05)‡	4.24E-01(8.53E-05)	4.23E-01(7.29E-05)
WFG6	5	7.40E-01(4.42E-04)†	8.78E-01(4.58E-03)†	1.01E+00(1.69E-03)†	2.32E-02(3.57E-06)‡	7.44E-01(1.16E-03)†	5.49E-01(2.97E-04)
	25	8.26E-01(5.21E-04)†	4.12E-01(2.66E-04)‡	8.95E-01(6.98E-04)†	3.30E-02(2.50E-06)‡	4.46E-01(1.41E-04)†	4.25E-01(1.17E-04)
	50	8.63E-01(4.93E-04)†	3.59E-01(1.20E-04)‡	8.97E-01(1.08E-03)†	3.68E-02(1.54E-06)‡	4.17E-01(1.03E-04)	4.15E-01(8.70E-05)
	200	8.90E-01(6.27E-04)†	3.30E-01(6.90E-05)‡	8.89E-01(5.43E-04)†	3.99E-02(4.51E-07)‡	3.71E-01(8.49E-05)‡	3.84E-01(1.75E-04)
WFG7	5	8.14E-01(2.14E-04)†	6.61E-01(1.84E-02)†	9.47E-01(1.16E-03)†	2.49E-01(7.99E-04)‡	5.44E-01(4.78E-04)†	4.67E-01(2.61E-04)
	25	9.59E-01(6.38E-04)†	3.17E-01(3.61E-04)‡	9.94E-01(8.63E-04)†	8.24E-02(3.37E-04)‡	3.85E-01(8.07E-05)	3.85E-01(1.42E-04)
	50	9.80E-01(7.89E-04)†	3.19E-01(2.63E-04)‡	1.01E+00(8.82E-04)†	4.32E-02(6.83E-05)‡	3.70E-01(7.69E-05)‡	3.77E-01(1.13E-04)
	200	9.85E-01(6.17E-04)†	3.42E-01(1.03E-04)‡	9.79E-01(5.44E-04)†	3.43E-02(1.52E-05)‡	4.46E-01(2.99E-05)‡	4.52E-01(3.09E-05)
WFG8	5	8.13E-01(5.33E-04)†	6.78E-01(1.74E-02)†	9.51E-01(7.31E-04)†	2.44E-01(1.49E-03)‡	5.44E-01(4.86E-04)†	4.67E-01(2.94E-04)
	25	9.59E-01(6.38E-04)†	3.17E-01(3.61E-04)‡	9.94E-01(8.63E-04)†	8.03E-02(2.51E-04)‡	3.87E-01(1.10E-04)†	3.80E-01(8.59E-05)
	50	9.77E-01(7.59E-04)†	3.23E-01(2.53E-04)‡	9.96E-01(6.04E-04)†	4.16E-02(2.98E-05)‡	3.69E-01(1.18E-04)‡	3.77E-01(7.16E-05)
	200	9.70E-01(6.18E-04)†	3.38E-01(1.24E-04)‡	9.85E-01(7.52E-04)†	3.28E-02(8.92E-06)‡	4.45E-01(4.49E-05)	4.48E-01(4.64E-05)
WFG9	5	8.25E-01(5.68E-04)‡	1.03E+00(5.13E-02)†	9.97E-01(2.68E-03)	1.57E-01(1.50E-04)‡	1.01E+00(1.13E-01)†	9.19E-01(5.47E-02)
	25	9.59E-01(6.38E-04)	3.17E-01(3.61E-04)‡	9.94E-01(8.63E-04)†	8.23E-02(2.90E-05)‡	6.92E-01(8.70E-02)	7.38E-01(8.77E-02)
	50	1.05E+00(5.76E-04)†	5.09E-01(4.44E-02)	1.05E+00(8.58E-04)†	6.85E-02(3.24E-05)‡	8.19E-01(8.32E-02)	7.70E-01(1.01E-01)
	200	1.04E+00(1.05E-03)	4.20E-01(2.72E-02)‡	1.02E+00(3.70E-04)	4.98E-02(5.60E-05)‡	8.16E-01(8.77E-02)	8.74E-01(8.33E-02)

$$m(t) = \begin{cases} 7, & t\text{=}0 \\ m(t-1)-2, & t \in [1,2] \\ m(t-1)-1, & t\text{=}3 \\ m(t-1)+1, & t\text{=}4 \\ m(t-1)+2, & t \in [5,6], \end{cases} \tag{6}$$

where t is the identifier of the change. In this sequence of change, the initial NObj is set as 7. Then, there are two changes where the NObj decreases by two. Later on, the NObj decreases from 3 to 2 and then increases from 2 to 3. In the last two changes, the NObj increases by two at each change.

The mean and standard deviation values of HV for optimized solutions at the last generation after optimization in the those

TABLE 127
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE LAST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 6 TO 7 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.27E+02(2.81E+02)†	1.52E-01(7.02E-03)‡	1.28E+02(1.36E+02)†	3.92E+02(7.01E+03)†	1.73E+00(2.61E+00)	7.05E+00(6.09E+01)
	25	4.27E+01(1.65E+03)†	3.66E-02(4.19E-07)	1.15E+02(5.63E+03)†	7.84E+02(3.46E+03)†	8.85E-02(1.86E-02)	5.87E-02(1.55E-03)
	50	7.51E+01(3.69E+03)†	3.57E-02(2.43E-07)‡	1.35E+02(2.48E+03)†	8.54E+02(5.01E+03)†	1.45E-01(1.20E-01)†	3.93E-02(1.85E-03)
	200	2.52E+02(6.46E+01)†	3.25E-02(1.65E-07)†	2.50E+02(7.57E+01)†	9.18E+02(4.67E+03)†	7.88E-02(9.77E-03)†	3.21E-02(3.00E-04)
F2	5	1.60E-01(5.03E-04)†	1.67E-01(7.45E-05)†	2.57E-01(5.49E-04)†	1.17E+00(2.44E-01)†	1.32E-01(5.71E-05)†	9.92E-02(5.46E-06)
	25	3.84E-01(4.83E-03)†	1.37E-01(2.17E-05)†	6.54E-01(3.02E-03)†	3.07E+00(4.57E-01)†	8.34E-02(5.48E-06)†	8.00E-02(4.74E-06)
	50	7.27E-01(1.45E-03)†	1.27E-01(1.29E-05)†	8.07E-01(6.36E-04)†	3.34E+00(4.32E-01)†	7.73E-02(2.99E-06)	7.72E-02(2.83E-06)
	200	8.48E-01(1.09E-03)†	1.14E-01(2.19E-06)†	8.62E-01(7.14E-04)†	3.49E+00(5.49E-02)†	7.80E-02(3.19E-06)†	7.67E-02(4.39E-06)
F3	5	2.79E+02(1.16E+03)†	4.59E-01(8.26E-02)‡	2.63E+02(1.01E+03)†	1.98E+02(2.49E+03)†	6.17E+00(3.59E+01)‡	2.34E+01(7.53E+02)
	25	6.20E+01(2.84E+03)†	1.34E-01(2.11E-05)‡	1.76E+02(1.96E+04)†	4.38E+02(1.06E+03)†	2.93E-01(8.58E-02)	1.86E-01(7.27E-03)
	50	6.19E+01(4.19E+03)†	1.30E-01(1.31E-05)†	8.15E+01(6.06E+03)†	5.13E+02(8.36E+02)†	2.85E-01(1.04E-01)†	1.28E-01(1.79E-02)
	200	6.10E+02(1.17E+03)†	1.16E-01(3.52E-06)‡	6.15E+02(5.88E+02)†	5.53E+02(1.46E+03)†	2.71E-01(9.12E-02)†	2.13E-01(2.21E-01)
F4	5	3.80E-01(2.86E-03)†	4.50E-02(4.11E-05)	2.32E-01(5.34E-04)†	1.39E-02(1.28E-04)‡	1.22E-01(2.19E-04)†	5.16E-02(2.38E-04)
	25	5.20E-01(6.99E-03)†	7.39E-02(2.64E-05)†	7.88E-01(9.02E-04)†	1.32E-02(2.93E-05)‡	7.83E-02(2.53E-05)†	5.80E-02(6.75E-04)
	50	8.66E-01(9.85E-04)†	8.18E-02(7.78E-06)†	8.92E-01(1.75E-04)†	1.04E-02(9.08E-06)‡	7.42E-02(4.42E-06)†	6.20E-02(5.81E-05)
	200	9.30E-01(8.91E-05)†	8.59E-02(2.93E-06)†	9.33E-01(6.52E-05)†	8.72E-03(5.85E-06)‡	8.51E-02(4.52E-06)†	5.92E-02(1.12E-04)
WFG1	5	5.82E-01(1.07E-03)†	3.71E-01(5.18E-03)‡	5.77E-01(7.63E-04)†	1.33E+00(5.34E-03)†	4.66E-01(8.02E-04)	4.68E-01(7.75E-04)
	25	5.73E-01(9.25E-04)†	3.43E-01(9.50E-05)‡	5.82E-01(9.29E-04)†	1.37E+00(8.42E-04)†	4.69E-01(4.04E-04)†	3.98E-01(1.87E-02)
	50	5.90E-01(4.20E-04)†	3.23E-01(5.16E-05)‡	5.97E-01(8.78E-04)†	1.38E+00(5.15E-04)†	4.27E-01(9.32E-04)†	3.57E-01(2.73E-02)
	200	6.22E-01(6.83E-04)†	3.04E-01(1.56E-05)‡	6.26E-01(6.39E-04)†	1.38E+00(1.37E-04)†	3.34E-01(4.23E-04)	3.31E-01(1.02E-02)
WFG2	5	2.02E+00(9.84E-03)†	5.93E-01(1.64E-03)‡	2.12E+00(1.30E-02)†	3.34E-01(1.17E-07)‡	1.84E+00(1.47E-02)†	1.68E+00(6.83E-03)
	25	2.01E+00(9.34E-03)†	5.42E-01(1.74E-04)‡	2.04E+00(9.74E-03)†	3.33E-01(8.21E-10)‡	1.29E+00(2.00E-03)‡	1.39E+00(1.77E-03)
	50	2.03E+00(1.75E-02)†	5.45E-01(2.31E-04)‡	2.03E+00(8.61E-03)†	3.33E-01(6.56E-11)‡	1.36E+00(1.16E-03)‡	1.41E+00(1.08E-03)
	200	2.03E+00(7.96E-03)†	5.42E-01(2.35E-05)‡	2.00E+00(8.29E-03)†	3.33E-01(2.37E-13)‡	1.38E+00(2.45E-04)	1.38E+00(2.43E-04)
WFG3	5	2.22E+00(2.81E-01)	4.39E+00(2.82E-03)†	3.42E+00(3.78E-02)†	9.48E-01(6.76E-05)‡	2.65E+00(1.58E-02)†	2.30E+00(1.17E-01)
	25	3.37E+00(4.42E-01)†	4.71E+00(4.90E-04)†	4.27E+00(1.18E-02)†	9.31E-01(3.12E-06)‡	3.10E+00(3.20E-02)†	2.77E+00(1.59E-01)
	50	4.31E+00(1.31E-02)†	4.77E+00(2.28E-04)†	4.32E+00(1.04E-02)†	9.30E-01(5.45E-06)‡	3.46E+00(1.77E-02)†	2.90E+00(2.44E-01)
	200	4.39E+00(6.46E-03)†	4.83E+00(3.85E-05)†	4.41E+00(6.41E-03)†	9.28E-01(6.75E-06)‡	3.59E+00(5.65E-03)†	3.48E+00(2.23E-02)
WFG4	5	1.20E+00(1.76E-03)†	8.51E-01(1.56E-02)	1.45E+00(1.48E-03)†	2.56E-01(2.69E-03)‡	1.01E+00(1.17E-03)†	8.48E-01(1.86E-03)
	25	1.39E+00(3.75E-03)†	4.21E-01(5.17E-04)‡	1.55E+00(2.00E-03)†	2.95E-01(4.35E-03)‡	6.56E-01(8.74E-04)†	6.30E-01(4.46E-04)
	50	1.55E+00(1.94E-03)†	3.88E-01(3.03E-04)‡	1.64E+00(1.83E-03)†	4.14E-01(2.28E-03)‡	6.02E-01(2.88E-04)	5.98E-01(2.78E-04)
	200	1.59E+00(2.58E-03)†	3.99E-01(3.00E-04)‡	1.61E+00(2.22E-03)†	3.74E-01(2.11E-04)‡	6.75E-01(2.28E-04)†	6.48E-01(2.63E-04)
WFG5	5	1.24E+00(1.60E-03)†	1.23E+00(6.62E-03)†	1.57E+00(1.46E-03)†	3.82E-02(4.68E-05)‡	8.35E-01(7.33E-04)‡	8.82E-01(1.23E-03)
	25	1.38E+00(2.69E-03)†	7.98E-01(1.15E-03)†	1.59E+00(9.78E-04)†	9.80E-03(2.18E-05)‡	6.48E-01(2.33E-04)‡	6.67E-01(2.50E-04)
	50	1.50E+00(2.55E-03)†	6.56E-01(8.47E-04)	1.59E+00(1.85E-03)†	1.14E-02(2.87E-05)‡	6.35E-01(2.14E-04)‡	6.47E-01(2.85E-04)
	200	1.54E+00(1.91E-03)†	5.74E-01(3.19E-04)‡	1.58E+00(2.46E-03)†	9.44E-03(4.12E-05)‡	6.60E-01(1.35E-04)	6.60E-01(1.66E-04)
WFG6	5	1.25E+00(1.04E-03)†	1.07E+00(2.01E-02)†	1.63E+00(2.67E-03)†	1.40E-02(3.13E-06)‡	1.09E+00(2.28E-03)†	8.38E-01(8.61E-04)
	25	1.45E+00(2.40E-03)†	4.64E-01(7.01E-04)‡	1.58E+00(3.25E-03)†	2.05E-02(6.37E-07)‡	6.64E-01(3.88E-04)†	6.20E-01(2.43E-04)
	50	1.54E+00(2.19E-03)†	4.11E-01(3.43E-04)‡	1.59E+00(2.81E-03)†	2.26E-02(1.66E-07)‡	6.00E-01(1.36E-04)	5.94E-01(2.90E-04)
	200	1.55E+00(1.11E-03)†	4.05E-01(1.75E-04)‡	1.57E+00(8.83E-04)†	2.39E-02(1.09E-08)‡	6.16E-01(8.97E-04)	6.26E-01(1.17E-03)
WFG7	5	1.32E+00(1.40E-03)†	5.85E-01(2.62E-02)‡	1.48E+00(1.82E-03)†	2.75E-01(2.97E-03)‡	7.68E-01(1.05E-03)†	7.12E-01(1.11E-03)
	25	1.56E+00(1.43E-03)†	3.00E-01(4.10E-04)‡	1.61E+00(1.58E-03)†	7.72E-02(3.93E-04)‡	5.75E-01(2.11E-04)	5.76E-01(3.72E-04)
	50	1.59E+00(1.53E-03)†	3.35E-01(2.61E-04)‡	1.61E+00(1.79E-03)†	3.96E-02(3.54E-05)‡	5.60E-01(1.97E-04)‡	5.70E-01(2.33E-04)
	200	1.57E+00(1.13E-03)†	3.91E-01(8.36E-05)‡	1.57E+00(1.54E-03)†	4.50E-02(1.70E-05)‡	7.05E-01(3.68E-04)	7.13E-01(4.78E-04)
WFG8	5	1.34E+00(1.17E-03)†	6.07E-01(2.08E-02)‡	1.50E+00(2.05E-03)†	2.52E-01(2.10E-03)‡	7.73E-01(5.51E-04)†	7.27E-01(6.20E-04)
	25	1.56E+00(1.43E-03)†	3.00E-01(4.10E-04)‡	1.61E+00(1.58E-03)†	7.92E-02(4.40E-04)‡	5.73E-01(1.77E-04)	5.79E-01(2.30E-04)
	50	1.59E+00(1.67E-03)†	3.39E-01(1.96E-04)‡	1.61E+00(1.39E-03)†	3.92E-02(2.42E-05)‡	5.56E-01(2.91E-04)	5.62E-01(2.87E-04)
	200	1.57E+00(7.53E-04)†	3.93E-01(7.39E-05)‡	1.57E+00(9.47E-04)†	4.46E-02(2.48E-05)‡	7.06E-01(3.10E-04)	7.13E-01(3.81E-04)
WFG9	5	1.42E+00(1.61E-03)	1.39E+00(1.38E-01)†	1.65E+00(2.81E-03)†	1.27E-01(6.90E-05)‡	1.38E+00(1.56E-01)†	1.27E+00(7.59E-02)
	25	1.56E+00(1.43E-03)†	3.00E-01(4.10E-04)‡	1.61E+00(1.58E-03)†	6.94E-02(3.19E-05)‡	9.50E-01(1.36E-01)	1.00E+00(1.41E-01)
	50	1.74E+00(1.75E-03)†	5.55E-01(5.19E-02)‡	1.74E+00(1.67E-03)†	5.65E-02(2.27E-05)‡	1.11E+00(1.26E-01)	1.06E+00(1.54E-01)
	200	1.72E+00(1.20E-03)†	5.15E-01(5.66E-02)‡	1.68E+00(1.76E-03)†	4.46E-02(1.76E-05)‡	1.07E+00(1.39E-01)	1.17E+00(1.42E-01)

two changing sequences are exhibited in Tables 141 and 142 of the Supplementary file, respectively. It is clear from in the changing sequence of following the pattern in Equation (5) that KTDMOEA significantly outperforms than others on all test problems except for F4 and WFG9. The reason is similar to that analyzed previously. For F4 with an extremely strong bias problem, the proposed PS expansion is unable to expand the PS and the diversity maintenance strategy in KTDMOEA cannot provide much diversity to spread the population. As for WFG9, KTDMOEA gets significant worse results than MOEAD-KF and DTAEA. The reason why KTDMOEA performs worse than MOEAD-KF is that the DE operator in MOEAD-KF is able to reach the global optima in the optimization process while KTDMOEA cannot achieve this via SBX operator.

Besides, it can be concluded from Table 137 that on the changing sequence as shown in Equation (6), KTDMOEA significantly performs the best among all compared algorithms. Specifically, KTDMOEA performs best on all problems except for F1-F4, WFG3 and WFG9. KTDMOEA significantly performs worse than MOEAD on F1 and F3. The reason is the same as that

TABLE 128
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 7 TO 6 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(1.81E-08)	9.07E-01(4.30E-03)†	1.00E+00(1.96E-09)	9.86E-01(1.06E-03)
	25	1.00E+00(0.00E+00)‡	9.75E-01(3.12E-04)†	1.00E+00(1.48E-11)‡	9.48E-01(1.81E-03)†	6.45E-01(2.37E-01)	9.97E-01(2.45E-04)
	50	1.00E+00(0.00E+00)‡	9.94E-01(4.42E-05)	1.00E+00(3.23E-14)‡	9.58E-01(1.13E-03)†	1.00E+00(7.01E-07)‡	9.91E-01(3.86E-04)
	200	1.00E+00(0.00E+00)‡	1.00E+00(5.16E-13)‡	1.00E+00(0.00E+00)‡	9.56E-01(2.21E-03)†	9.98E-01(5.89E-06)	9.96E-01(1.68E-04)
F2	5	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(1.61E-09)†	9.65E-01(1.11E-03)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
	25	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	9.52E-01(1.50E-03)†	6.45E-01(2.37E-01)†	1.00E+00(0.00E+00)
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	9.17E-01(1.89E-03)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	6.98E-01(3.48E-03)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
F3	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.14E-01(4.68E-03)†	1.00E+00(4.61E-09)‡	9.83E-01(1.83E-03)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.30E-01(3.96E-03)†	6.45E-01(2.37E-01)	9.94E-01(4.73E-04)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.47E-01(4.14E-03)†	1.00E+00(1.23E-11)	9.96E-01(3.70E-04)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.94E-01(2.58E-03)†	9.99E-01(1.31E-05)	1.00E+00(4.84E-07)
F4	5	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(1.12E-09)†	1.00E+00(3.23E-14)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
	25	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	6.45E-01(2.37E-01)†	1.00E+00(0.00E+00)
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
WFG1	5	9.59E-01(1.16E-04)‡	3.53E-01(2.80E-03)†	9.46E-01(5.93E-04)‡	3.37E-01(6.96E-05)†	9.00E-01(9.67E-04)‡	8.79E-01(1.08E-03)
	25	8.94E-01(9.36E-04)‡	2.87E-01(1.68E-03)†	8.95E-01(6.81E-04)‡	3.33E-01(9.03E-05)†	5.29E-01(1.60E-01)	8.08E-01(1.42E-03)
	50	8.94E-01(6.96E-04)‡	2.94E-01(2.04E-03)†	8.92E-01(6.29E-04)‡	3.37E-01(1.66E-04)†	7.78E-01(1.89E-03)	7.87E-01(1.07E-03)
	200	9.49E-01(1.09E-04)‡	3.03E-01(1.77E-03)†	9.49E-01(1.09E-04)‡	3.36E-01(1.59E-04)†	8.99E-01(2.16E-04)	9.07E-01(2.06E-04)
WFG2	5	9.41E-01(4.49E-04)‡	3.01E-01(3.95E-03)†	9.50E-01(6.74E-04)‡	1.68E-01(4.14E-05)†	9.33E-01(3.72E-04)‡	9.13E-01(9.89E-04)
	25	9.51E-01(2.67E-04)‡	3.01E-01(3.99E-03)†	9.53E-01(1.37E-04)‡	1.64E-01(1.41E-06)†	6.03E-01(2.07E-01)	9.33E-01(2.47E-04)
	50	9.74E-01(6.50E-05)‡	3.08E-01(3.25E-03)†	9.72E-01(2.95E-05)‡	1.64E-01(2.50E-06)†	9.55E-01(1.76E-04)	9.53E-01(1.42E-04)
	200	9.92E-01(1.27E-05)‡	3.20E-01(2.40E-03)†	9.93E-01(4.19E-06)‡	1.63E-01(2.10E-07)†	9.69E-01(2.07E-06)‡	9.67E-01(6.71E-06)
WFG3	5	8.14E-01(6.75E-03)‡	5.71E-01(4.79E-02)	8.07E-01(5.10E-03)‡	4.63E-01(2.16E-05)†	6.89E-01(1.89E-03)‡	6.64E-01(2.76E-03)
	25	9.50E-01(6.77E-04)‡	7.45E-01(2.51E-02)‡	9.39E-01(8.13E-04)‡	4.59E-01(1.35E-05)†	4.92E-01(1.43E-01)	6.70E-01(8.72E-03)
	50	9.79E-01(1.08E-04)‡	8.01E-01(1.80E-02)‡	9.76E-01(1.43E-04)‡	4.63E-01(2.20E-05)†	7.99E-01(6.11E-03)‡	7.05E-01(1.07E-02)
	200	9.95E-01(4.40E-06)‡	9.15E-01(2.19E-03)‡	9.96E-01(3.61E-06)‡	4.67E-01(4.50E-10)†	9.10E-01(3.91E-03)‡	8.45E-01(1.24E-02)
WFG4	5	9.97E-01(2.56E-06)†	7.35E-01(4.47E-03)†	9.91E-01(1.23E-05)†	8.57E-01(6.87E-05)‡	1.00E+00(1.10E-10)	1.00E+00(9.79E-09)
	25	9.98E-01(2.41E-06)†	8.21E-01(2.65E-03)†	9.95E-01(2.83E-06)†	8.66E-01(1.81E-05)†	6.45E-01(2.37E-01)†	1.00E+00(1.38E-10)
	50	9.99E-01(2.85E-07)†	8.48E-01(1.33E-03)†	9.97E-01(1.71E-06)†	8.67E-01(4.97E-06)†	1.00E+00(7.56E-11)	1.00E+00(1.45E-08)
	200	1.00E+00(6.46E-08)†	8.71E-01(7.95E-04)†	9.99E-01(1.75E-07)†	8.65E-01(2.51E-06)†	1.00E+00(1.61E-11)	1.00E+00(8.29E-12)
WFG5	5	9.88E-01(4.90E-06)†	7.46E-01(3.48E-03)†	9.82E-01(1.12E-05)†	7.39E-01(1.63E-05)†	9.92E-01(8.52E-09)	9.92E-01(2.93E-09)
	25	9.89E-01(1.86E-06)†	8.36E-01(1.24E-03)†	9.87E-01(2.05E-06)†	7.40E-01(1.65E-05)†	6.40E-01(2.33E-01)†	9.92E-01(1.39E-07)
	50	9.90E-01(1.00E-06)†	8.59E-01(9.67E-04)†	9.89E-01(1.21E-06)†	7.40E-01(1.99E-05)†	9.92E-01(1.34E-09)	9.92E-01(1.50E-09)
	200	9.90E-01(6.68E-07)†	8.80E-01(4.16E-04)†	9.90E-01(6.52E-07)†	7.42E-01(1.15E-05)†	9.92E-01(1.70E-10)	9.92E-01(2.71E-10)
WFG6	5	9.88E-01(4.53E-05)†	6.17E-01(1.61E-02)†	9.83E-01(2.59E-05)†	3.27E-01(2.80E-06)†	9.95E-01(8.12E-06)	9.97E-01(4.83E-06)
	25	9.97E-01(4.76E-06)†	7.74E-01(1.87E-03)†	9.95E-01(4.15E-06)†	3.26E-01(2.99E-06)†	6.44E-01(2.36E-01)†	9.99E-01(8.84E-07)
	50	9.98E-01(5.12E-07)†	8.17E-01(1.07E-03)†	9.97E-01(1.06E-06)†	3.27E-01(1.11E-06)†	1.00E+00(4.01E-08)	1.00E+00(3.61E-07)
	200	1.00E+00(1.27E-07)†	8.43E-01(9.54E-04)†	9.99E-01(2.18E-07)†	3.28E-01(1.17E-07)†	1.00E+00(3.52E-09)	1.00E+00(7.78E-09)
WFG7	5	9.94E-01(1.59E-05)†	7.64E-01(4.06E-03)†	9.86E-01(3.00E-05)†	9.75E-01(3.19E-04)†	9.99E-01(4.08E-07)	9.99E-01(7.23E-07)
	25	9.98E-01(1.14E-06)†	8.61E-01(1.57E-03)†	9.97E-01(2.51E-06)†	9.92E-01(1.86E-04)†	6.45E-01(2.36E-01)†	1.00E+00(2.79E-09)
	50	9.99E-01(1.94E-07)†	8.76E-01(1.52E-03)†	9.98E-01(5.06E-07)†	9.99E-01(5.67E-06)†	1.00E+00(6.68E-10)	1.00E+00(4.72E-10)
	200	1.00E+00(1.50E-09)†	9.14E-01(4.51E-04)†	1.00E+00(4.22E-09)†	9.99E-01(4.98E-05)†	1.00E+00(7.85E-13)†	1.00E+00(3.81E-13)
WFG8	5	9.94E-01(9.57E-06)†	7.51E-01(4.50E-03)†	9.88E-01(3.12E-05)†	9.76E-01(2.29E-04)†	9.99E-01(3.98E-07)	9.99E-01(2.34E-07)
	25	9.98E-01(1.14E-06)†	8.61E-01(1.57E-03)†	9.97E-01(2.51E-06)†	9.96E-01(1.64E-05)†	6.45E-01(2.37E-01)†	1.00E+00(5.68E-09)
	50	9.99E-01(1.06E-07)†	8.89E-01(5.56E-04)†	9.98E-01(6.06E-07)†	9.99E-01(1.69E-05)†	1.00E+00(5.47E-10)	1.00E+00(1.44E-09)
	200	1.00E+00(1.43E-09)†	9.16E-01(4.21E-04)†	1.00E+00(6.09E-09)†	1.00E+00(4.76E-06)†	1.00E+00(5.70E-12)†	1.00E+00(9.03E-14)
WFG9	5	9.93E-01(3.14E-05)‡	7.56E-01(4.80E-03)†	9.85E-01(4.19E-05)‡	9.95E-01(2.19E-05)‡	9.61E-01(1.38E-03)‡	9.43E-01(1.08E-03)
	25	9.98E-01(1.14E-06)	8.61E-01(1.57E-03)†	9.97E-01(2.51E-06)	9.97E-01(1.33E-05)	6.23E-01(2.21E-01)†	9.59E-01(1.51E-03)
	50	9.99E-01(2.82E-07)	8.69E-01(1.51E-03)†	9.99E-01(3.73E-07)	9.98E-01(6.11E-06)	9.45E-01(1.33E-03)	9.52E-01(1.55E-03)
	200	1.00E+00(1.16E-08)‡	8.91E-01(1.24E-03)†	1.00E+00(8.80E-08)‡	1.00E+00(2.81E-08)‡	9.48E-01(1.47E-03)	9.42E-01(1.35E-03)

analyzed in Section III-B1, which is that KTDMOEA is unable to delete nondominated solutions far away from the PF on problems with multimodality and variable correlation. The proposed KTDMOEA is unable to provide enough diversity On F4 and WFG3 which needs more diversity to spread the population, and the reason is the same as previously analyzed in Section III-B1. As for WFG9 which is the most complex problem with several problem features in the fitness landscape, KTDMOEA performs significantly worse than NSGA2 and DNSGA2. The reason is that for WFG9, an algorithm is required to converge fast. However, when decreasing the NObj from 7 to 2, the introduced diversity by PS contraction is so much that it puts an obstacle to KTDMOEA's convergence, making KTDMOEA has worse convergence than NSGA2 and DNSGA2. In addition, PS contraction cannot increase population convergence, especially on complex problems like WFG9.

TABLE 129
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 6 TO 5 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(1.04E-07)	8.16E-01(2.96E-03)†	1.00E+00(1.67E-08)	9.83E-01(1.56E-03)
	25	1.00E+00(0.00E+00)‡	9.90E-01(1.74E-04)	1.00E+00(0.00E+00)‡	9.18E-01(1.60E-03)†	6.45E-01(2.37E-01)†	9.97E-01(3.60E-04)
	50	1.00E+00(0.00E+00)‡	9.98E-01(2.90E-05)	1.00E+00(0.00E+00)‡	9.07E-01(2.59E-03)†	1.00E+00(2.02E-11)	9.99E-01(4.85E-06)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.71E-01(5.11E-03)†	9.99E-01(1.97E-06)	1.00E+00(4.10E-07)
F2	5	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(1.14E-11)†	9.25E-01(3.23E-03)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
	25	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	8.62E-01(8.31E-04)†	6.45E-01(2.37E-01)†	1.00E+00(0.00E+00)
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	7.69E-01(6.89E-03)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.04E-01(5.48E-03)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
F3	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.44E-01(3.07E-03)†	1.00E+00(2.14E-08)‡	9.79E-01(2.73E-03)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.32E-01(2.87E-03)†	6.45E-01(2.37E-01)†	9.93E-01(6.95E-04)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.33E-01(3.10E-03)†	1.00E+00(2.87E-11)	1.00E+00(1.43E-10)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	7.87E-01(8.38E-04)†	1.00E+00(7.07E-11)	1.00E+00(1.04E-10)
F4	5	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(2.51E-09)†	1.00E+00(3.32E-12)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)†
	25	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	6.45E-01(2.37E-01)†	1.00E+00(0.00E+00)
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
WFG1	5	9.32E-01(3.88E-04)‡	4.73E-01(3.34E-03)†	9.00E-01(1.50E-03)‡	3.63E-01(8.93E-05)†	8.40E-01(2.07E-03)	8.59E-01(2.51E-03)
	25	8.84E-01(5.46E-04)‡	3.70E-01(1.72E-03)†	8.64E-01(7.99E-04)‡	3.61E-01(1.89E-04)†	5.33E-01(1.62E-01)	8.17E-01(2.88E-03)
	50	8.82E-01(5.08E-04)‡	3.76E-01(1.75E-03)†	8.78E-01(3.22E-04)‡	3.63E-01(2.45E-04)†	7.93E-01(6.66E-04)†	8.14E-01(5.86E-04)
	200	9.50E-01(1.10E-04)‡	3.79E-01(1.31E-03)†	9.52E-01(1.04E-04)‡	3.61E-01(1.90E-04)†	9.31E-01(2.96E-04)	9.33E-01(2.55E-04)
WFG2	5	9.30E-01(7.59E-04)‡	4.00E-01(4.27E-03)†	9.31E-01(8.34E-04)‡	1.78E-01(5.84E-05)†	9.34E-01(4.24E-04)‡	8.86E-01(1.71E-03)
	25	9.63E-01(1.24E-04)‡	3.93E-01(3.92E-03)†	9.59E-01(7.40E-05)‡	1.74E-01(2.00E-06)†	6.05E-01(2.08E-01)†	9.33E-01(4.61E-04)
	50	9.78E-01(3.96E-05)‡	4.00E-01(3.45E-03)†	9.78E-01(4.80E-05)‡	1.74E-01(1.38E-06)†	9.69E-01(6.10E-05)†	9.71E-01(1.39E-04)
	200	9.94E-01(8.64E-06)‡	4.14E-01(2.65E-03)†	9.94E-01(4.08E-06)‡	1.74E-01(1.92E-06)†	9.74E-01(3.23E-05)‡	9.73E-01(4.13E-06)
WFG3	5	8.09E-01(3.76E-03)‡	5.53E-01(2.77E-02)†	7.42E-01(1.71E-03)	4.87E-01(1.13E-05)†	7.28E-01(3.37E-03)	7.28E-01(5.06E-03)
	25	9.56E-01(2.10E-04)‡	7.26E-01(1.32E-02)	9.39E-01(3.87E-04)‡	4.80E-01(2.56E-05)†	5.48E-01(1.76E-01)	7.85E-01(2.20E-02)
	50	9.82E-01(4.56E-05)‡	7.79E-01(8.50E-03)†	9.78E-01(5.56E-05)‡	4.80E-01(2.15E-05)†	8.79E-01(1.10E-02)	8.50E-01(2.21E-02)
	200	9.96E-01(1.53E-06)‡	8.95E-01(1.22E-03)†	9.96E-01(2.32E-06)‡	4.85E-01(1.01E-05)‡	9.81E-01(6.75E-05)‡	9.72E-01(4.73E-03)
WFG4	5	9.91E-01(2.10E-05)†	7.80E-01(8.06E-03)†	9.80E-01(2.32E-05)†	8.69E-01(1.09E-05)†	9.99E-01(3.04E-07)	1.00E+00(1.20E-07)
	25	9.95E-01(3.02E-06)†	8.94E-01(1.13E-03)†	9.93E-01(3.54E-06)†	8.74E-01(1.62E-06)†	6.45E-01(2.37E-01)†	1.00E+00(3.11E-10)
	50	9.97E-01(1.28E-06)†	9.09E-01(5.13E-04)†	9.95E-01(1.90E-06)†	8.75E-01(1.22E-06)†	1.00E+00(7.53E-11)	1.00E+00(7.33E-11)
	200	9.99E-01(1.27E-07)†	9.39E-01(3.34E-04)†	9.99E-01(2.82E-07)†	8.74E-01(2.36E-07)†	1.00E+00(4.39E-11)	1.00E+00(3.78E-12)
WFG5	5	9.84E-01(8.30E-06)†	8.32E-01(2.03E-03)†	9.70E-01(1.85E-05)†	8.11E-01(3.40E-05)†	9.92E-01(1.99E-08)	9.92E-01(8.35E-09)
	25	9.86E-01(1.16E-06)†	9.09E-01(6.68E-04)†	9.84E-01(2.96E-06)†	8.15E-01(2.16E-05)†	6.40E-01(2.33E-01)†	9.92E-01(1.22E-07)
	50	9.88E-01(1.03E-06)†	9.29E-01(1.71E-04)†	9.87E-01(8.66E-07)†	8.16E-01(1.36E-05)†	9.92E-01(2.06E-10)	9.92E-01(3.68E-10)
	200	9.89E-01(4.41E-07)†	9.51E-01(1.94E-04)†	9.89E-01(3.76E-07)†	8.17E-01(1.68E-06)†	9.92E-01(2.88E-12)	9.92E-01(3.66E-12)
WFG6	5	9.73E-01(7.63E-05)†	6.41E-01(8.39E-03)†	9.63E-01(5.37E-05)†	3.58E-01(4.23E-06)†	9.81E-01(6.23E-05)†	9.86E-01(2.83E-05)
	25	9.93E-01(6.16E-06)†	8.79E-01(7.85E-04)†	9.91E-01(5.37E-06)†	3.57E-01(3.58E-06)†	6.44E-01(2.35E-01)†	9.98E-01(6.55E-07)
	50	9.97E-01(1.49E-06)†	9.03E-01(3.75E-04)†	9.95E-01(2.19E-06)†	3.57E-01(1.72E-06)†	9.99E-01(3.53E-08)†	1.00E+00(3.09E-08)
	200	9.99E-01(8.10E-08)†	9.48E-01(1.23E-04)†	9.99E-01(2.46E-07)†	3.59E-01(2.69E-07)†	1.00E+00(2.78E-09)	1.00E+00(6.43E-09)
WFG7	5	9.85E-01(2.52E-05)†	8.19E-01(5.01E-03)†	9.73E-01(5.44E-05)†	9.67E-01(6.51E-05)†	9.93E-01(4.52E-06)†	9.95E-01(2.11E-06)
	25	9.97E-01(1.81E-06)†	9.36E-01(3.69E-04)†	9.94E-01(4.45E-06)†	9.96E-01(1.04E-06)†	6.45E-01(2.36E-01)†	1.00E+00(1.73E-08)
	50	9.98E-01(5.43E-07)†	9.46E-01(1.15E-04)†	9.97E-01(7.56E-07)†	9.99E-01(7.92E-08)†	1.00E+00(4.45E-10)	1.00E+00(3.24E-10)
	200	1.00E+00(9.63E-09)†	9.64E-01(2.24E-04)†	1.00E+00(9.30E-09)†	1.00E+00(3.88E-10)†	1.00E+00(5.51E-12)	1.00E+00(1.57E-11)
WFG8	5	9.85E-01(3.40E-05)†	8.09E-01(4.56E-03)†	9.74E-01(5.17E-05)†	9.67E-01(7.77E-05)†	9.94E-01(4.83E-06)†	9.95E-01(2.42E-06)
	25	9.97E-01(1.81E-06)†	9.36E-01(3.69E-04)†	9.94E-01(4.45E-06)†	9.95E-01(1.11E-06)†	6.45E-01(2.36E-01)†	1.00E+00(5.85E-08)
	50	9.98E-01(7.14E-07)†	9.47E-01(1.99E-04)†	9.97E-01(8.21E-07)†	9.99E-01(1.83E-07)†	1.00E+00(1.61E-09)†	1.00E+00(5.85E-10)
	200	1.00E+00(9.58E-09)†	9.60E-01(2.08E-04)†	1.00E+00(3.55E-08)†	1.00E+00(7.71E-10)†	1.00E+00(6.91E-12)†	1.00E+00(5.10E-12)
WFG9	5	9.86E-01(5.42E-05)‡	7.98E-01(4.92E-03)†	9.67E-01(1.56E-04)‡	9.89E-01(4.88E-06)‡	9.52E-01(1.38E-03)	9.38E-01(1.04E-03)
	25	9.97E-01(1.81E-06)	9.36E-01(3.69E-04)	9.94E-01(4.45E-06)	9.96E-01(4.10E-07)	6.23E-01(2.22E-01)†	9.59E-01(1.49E-03)
	50	9.98E-01(3.86E-07)	9.30E-01(1.04E-03)	9.97E-01(4.18E-07)	9.97E-01(1.63E-07)	9.47E-01(1.27E-03)	9.55E-01(1.40E-03)
	200	1.00E+00(4.14E-08)‡	9.60E-01(8.70E-04)	9.99E-01(1.16E-07)‡	9.99E-01(6.24E-08)‡	9.49E-01(1.41E-03)	9.44E-01(1.26E-03)

TABLE 130
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 5 TO 4 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(3.55E-08)‡	8.85E-01(1.83E-03)†	1.00E+00(2.74E-08)	9.78E-01(2.50E-03)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.22E-01(4.34E-03)†	6.45E-01(2.37E-01)†	9.96E-01(5.79E-04)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.00E-01(3.55E-03)†	1.00E+00(9.72E-12)‡	1.00E+00(1.18E-09)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.65E-01(5.65E-04)†	1.00E+00(3.03E-08)	1.00E+00(1.33E-06)
F2	5	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(1.35E-11)†	8.17E-01(9.64E-03)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
	25	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	2.44E-01(3.28E-02)†	6.45E-01(2.37E-01)†	1.00E+00(0.00E+00)
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	4.75E-03(1.49E-04)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	8.66E-06(2.67E-41)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
F3	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.68E-01(5.64E-04)†	1.00E+00(2.50E-08)	9.73E-01(4.51E-03)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.66E-01(1.22E-08)†	6.45E-01(2.37E-01)†	9.91E-01(1.12E-03)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.66E-01(7.63E-09)†	1.00E+00(5.61E-13)‡	1.00E+00(1.94E-10)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	5.47E-05(1.92E-10)†	1.00E+00(4.38E-12)	1.00E+00(8.13E-13)
F4	5	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(1.24E-08)†	1.00E+00(4.11E-12)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
	25	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	6.45E-01(2.37E-01)†	1.00E+00(0.00E+00)
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
WFG1	5	9.04E-01(6.09E-04)	6.71E-01(2.10E-03)†	8.57E-01(1.23E-03)†	4.08E-01(3.18E-04)†	8.69E-01(1.11E-03)†	9.01E-01(1.17E-03)
	25	8.78E-01(5.45E-04)‡	5.37E-01(8.97E-04)†	8.57E-01(4.89E-04)‡	3.98E-01(3.14E-04)†	5.24E-01(1.57E-01)†	8.29E-01(1.98E-03)
	50	8.88E-01(4.14E-04)‡	5.04E-01(8.82E-04)†	8.86E-01(4.26E-04)‡	4.03E-01(5.30E-04)†	8.36E-01(5.47E-04)†	8.65E-01(1.50E-03)
	200	9.60E-01(7.72E-05)	5.03E-01(7.33E-04)†	9.58E-01(1.66E-04)	4.01E-01(3.87E-04)†	9.62E-01(1.86E-04)	9.59E-01(1.61E-04)
WFG2	5	9.37E-01(8.32E-04)	5.30E-01(3.35E-03)†	9.37E-01(7.04E-04)	1.90E-01(3.66E-05)†	9.49E-01(6.17E-04)‡	9.17E-01(2.13E-03)
	25	9.70E-01(1.04E-04)‡	5.39E-01(3.23E-03)†	9.71E-01(9.61E-05)‡	1.93E-01(1.44E-06)†	6.24E-01(2.21E-01)	9.63E-01(1.26E-04)
	50	9.85E-01(2.16E-05)	5.37E-01(1.93E-03)†	9.85E-01(2.35E-05)	1.93E-01(8.97E-07)†	9.84E-01(2.10E-05)	9.83E-01(3.92E-05)
	200	9.96E-01(5.23E-06)‡	5.54E-01(1.67E-03)†	9.95E-01(7.74E-06)‡	1.91E-01(3.48E-08)†	9.81E-01(1.68E-06)	9.81E-01(3.27E-06)
WFG3	5	8.11E-01(1.78E-03)‡	6.45E-01(1.49E-02)†	7.89E-01(1.50E-03)‡	5.02E-01(7.63E-05)†	7.96E-01(2.05E-03)‡	7.66E-01(2.48E-03)
	25	9.70E-01(1.05E-04)‡	8.52E-01(3.05E-03)†	9.65E-01(1.03E-04)‡	5.01E-01(1.19E-05)†	6.03E-01(2.07E-01)†	8.87E-01(1.08E-02)
	50	9.89E-01(2.63E-05)‡	8.98E-01(7.21E-04)†	9.88E-01(2.14E-05)‡	4.97E-01(3.57E-06)†	9.63E-01(2.17E-04)	9.58E-01(1.21E-03)
	200	9.98E-01(5.67E-07)‡	9.60E-01(1.85E-04)†	9.98E-01(3.82E-07)‡	4.96E-01(7.34E-09)†	9.93E-01(2.44E-06)	9.94E-01(4.66E-06)
WFG4	5	9.85E-01(1.33E-05)†	8.78E-01(3.40E-03)†	9.73E-01(2.75E-05)†	8.51E-01(2.38E-05)†	9.96E-01(1.72E-06)†	9.97E-01(1.45E-06)
	25	9.94E-01(2.47E-06)†	9.74E-01(7.62E-05)†	9.91E-01(1.59E-06)†	8.60E-01(6.42E-06)†	6.45E-01(2.36E-01)†	1.00E+00(1.29E-09)
	50	9.97E-01(1.21E-06)†	9.85E-01(1.43E-05)†	9.94E-01(1.38E-06)†	8.64E-01(1.45E-06)†	1.00E+00(1.09E-10)	1.00E+00(1.01E-10)
	200	9.99E-01(1.49E-07)†	9.92E-01(8.34E-07)†	9.98E-01(2.53E-07)†	8.66E-01(9.00E-09)†	1.00E+00(8.71E-12)	1.00E+00(4.36E-12)
WFG5	5	9.78E-01(2.61E-05)†	9.49E-01(1.29E-04)†	9.61E-01(2.35E-05)†	8.96E-01(2.35E-05)†	9.91E-01(6.73E-07)	9.91E-01(9.52E-07)
	25	9.84E-01(1.45E-06)†	9.79E-01(6.09E-06)†	9.81E-01(2.25E-06)†	8.96E-01(2.26E-05)†	6.40E-01(2.33E-01)†	9.93E-01(1.13E-07)
	50	9.86E-01(6.21E-07)†	9.81E-01(3.60E-06)†	9.84E-01(5.37E-07)†	8.98E-01(1.61E-05)†	9.93E-01(1.66E-10)†	9.93E-01(2.05E-11)
	200	9.87E-01(3.52E-07)†	9.85E-01(1.01E-06)†	9.87E-01(9.06E-08)†	9.00E-01(6.86E-08)†	9.93E-01(6.24E-14)	9.93E-01(9.03E-14)
WFG6	5	9.69E-01(8.53E-05)†	7.48E-01(8.19E-03)†	9.51E-01(6.70E-05)†	4.02E-01(4.66E-06)†	9.66E-01(1.32E-04)†	9.78E-01(4.80E-05)
	25	9.91E-01(8.80E-06)†	9.82E-01(3.15E-05)†	9.89E-01(5.46E-06)†	3.99E-01(7.11E-06)†	6.43E-01(2.35E-01)†	9.98E-01(3.51E-07)
	50	9.96E-01(1.26E-06)†	9.89E-01(4.20E-06)†	9.94E-01(2.34E-06)†	3.98E-01(3.00E-06)†	9.99E-01(3.64E-08)†	1.00E+00(2.11E-08)
	200	9.99E-01(3.98E-07)†	9.96E-01(4.84E-07)†	9.98E-01(2.65E-07)†	3.97E-01(2.83E-06)†	1.00E+00(2.30E-09)	1.00E+00(5.99E-09)
WFG7	5	9.79E-01(3.40E-05)†	8.82E-01(1.24E-02)†	9.63E-01(3.96E-05)†	9.49E-01(9.52E-05)†	9.87E-01(9.77E-06)†	9.90E-01(4.79E-06)
	25	9.96E-01(2.26E-06)†	9.76E-01(7.03E-05)†	9.93E-01(1.64E-06)†	9.93E-01(2.66E-06)†	6.45E-01(2.36E-01)†	1.00E+00(2.45E-08)
	50	9.98E-01(8.46E-07)†	9.86E-01(2.30E-05)†	9.97E-01(6.34E-07)†	9.98E-01(2.35E-07)†	1.00E+00(7.51E-10)	1.00E+00(5.75E-10)
	200	1.00E+00(1.21E-08)†	9.95E-01(1.02E-06)†	1.00E+00(1.63E-08)†	1.00E+00(5.28E-10)†	1.00E+00(2.72E-12)	1.00E+00(7.37E-12)
WFG8	5	9.77E-01(2.26E-05)†	8.93E-01(3.75E-03)†	9.63E-01(3.77E-05)†	9.45E-01(6.17E-05)†	9.88E-01(7.28E-06)†	9.91E-01(5.22E-06)
	25	9.96E-01(2.26E-06)†	9.76E-01(7.03E-05)†	9.93E-01(1.64E-06)†	9.93E-01(1.40E-06)†	6.45E-01(2.36E-01)†	1.00E+00(2.46E-08)
	50	9.98E-01(3.91E-07)†	9.86E-01(1.38E-05)†	9.97E-01(7.67E-07)†	9.98E-01(3.76E-07)†	1.00E+00(7.04E-10)	1.00E+00(6.84E-10)
	200	1.00E+00(1.52E-08)†	9.95E-01(7.35E-07)†	1.00E+00(1.90E-08)†	1.00E+00(4.34E-10)†	1.00E+00(9.38E-12)	1.00E+00(1.56E-11)
WFG9	5	9.84E-01(4.81E-05)‡	8.88E-01(3.22E-03)†	9.54E-01(2.04E-04)‡	9.77E-01(5.55E-05)‡	9.34E-01(1.50E-03)	9.32E-01(1.05E-03)
	25	9.96E-01(2.26E-06)	9.76E-01(7.03E-05)	9.93E-01(1.64E-06)	9.94E-01(9.41E-07)	6.22E-01(2.21E-01)†	9.58E-01(1.52E-03)
	50	9.98E-01(4.80E-07)	9.85E-01(7.37E-04)	9.97E-01(2.78E-07)	9.96E-01(9.63E-08)	9.47E-01(1.29E-03)	9.51E-01(1.60E-03)
	200	9.99E-01(1.11E-07)‡	9.90E-01(6.24E-04)‡	9.99E-01(1.81E-07)‡	9.98E-01(8.98E-08)‡	9.49E-01(1.41E-03)	9.39E-01(1.43E-03)

TABLE 131
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 4 TO 3 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.00E+00(0.00E+00)†	9.80E-01(3.15E-03)‡	1.00E+00(3.78E-07)†	9.99E-01(5.15E-06)‡	1.00E+00(3.79E-08)	9.70E-01(4.72E-03)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(9.55E-09)‡	6.45E-01(2.37E-01)†	9.94E-01(1.09E-03)
	50	1.00E+00(0.00E+00)‡	1.00E+00(5.46E-06)†	1.00E+00(0.00E+00)‡	9.94E-01(1.09E-03)†	1.00E+00(2.06E-12)	1.00E+00(4.01E-11)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(3.15E-10)†	1.00E+00(1.04E-09)	1.00E+00(3.23E-14)
F2	5	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(1.98E-11)	9.41E-01(6.92E-03)†	1.00E+00(8.62E-12)	1.00E+00(1.26E-11)
	25	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(1.22E-11)	6.45E-01(2.37E-01)†	1.00E+00(1.06E-12)
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(3.06E-12)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
F3	5	1.00E+00(0.00E+00)†	1.00E+00(0.00E+00)†	1.00E+00(0.00E+00)†	9.03E-01(7.78E-03)†	1.00E+00(8.95E-08)†	9.76E-01(3.91E-03)
	25	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(9.66E-10)†	6.45E-01(2.37E-01)†	9.88E-01(2.10E-03)
	50	1.00E+00(0.00E+00)†	1.00E+00(0.00E+00)†	1.00E+00(0.00E+00)†	1.00E+00(8.76E-09)	1.00E+00(0.00E+00)†	1.00E+00(2.12E-11)
	200	1.00E+00(0.00E+00)†	1.00E+00(0.00E+00)†	1.00E+00(0.00E+00)†	1.00E+00(3.86E-12)	1.00E+00(2.06E-12)	1.00E+00(4.78E-12)
F4	5	1.00E+00(1.92E-12)	1.00E+00(0.00E+00)	1.00E+00(6.02E-09)†	1.00E+00(5.81E-13)	1.00E+00(0.00E+00)	1.00E+00(1.06E-12)†
	25	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	6.45E-01(2.37E-01)†	1.00E+00(5.16E-13)†
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(1.16E-12)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
WFG1	5	8.91E-01(6.35E-04)†	8.75E-01(2.12E-03)†	8.35E-01(8.00E-04)†	5.75E-01(3.01E-03)†	8.73E-01(6.16E-04)†	9.11E-01(9.10E-04)
	25	9.01E-01(7.42E-04)	7.61E-01(7.74E-04)†	8.73E-01(5.77E-04)†	6.59E-01(1.64E-06)†	5.53E-01(1.74E-01)†	9.01E-01(1.78E-03)
	50	9.11E-01(4.64E-04)‡	7.32E-01(4.09E-04)†	9.15E-01(5.08E-04)‡	6.59E-01(2.66E-08)†	8.75E-01(4.71E-04)†	8.94E-01(8.67E-04)
	200	9.80E-01(4.21E-05)†	7.05E-01(1.44E-04)†	9.77E-01(3.57E-05)‡	6.59E-01(1.21E-09)†	9.71E-01(3.49E-04)†	9.84E-01(8.80E-05)
WFG2	5	9.61E-01(3.32E-04)	7.83E-01(3.56E-03)†	9.67E-01(4.20E-04)	2.03E-01(7.51E-05)†	9.62E-01(5.51E-04)	9.58E-01(9.92E-04)
	25	9.84E-01(7.99E-05)	7.18E-01(6.99E-04)†	9.80E-01(7.76E-05)†	2.09E-01(1.04E-06)†	6.35E-01(2.29E-01)†	9.84E-01(1.01E-04)
	50	9.90E-01(1.93E-05)†	7.32E-01(3.95E-04)†	9.90E-01(2.94E-05)†	2.10E-01(6.44E-06)†	9.93E-01(1.03E-05)	9.95E-01(6.88E-06)
	200	9.97E-01(3.89E-06)‡	7.40E-01(2.15E-05)†	9.97E-01(3.58E-06)‡	2.08E-01(2.62E-07)†	9.89E-01(1.90E-06)‡	9.88E-01(1.25E-06)
WFG3	5	8.30E-01(1.23E-03)†	8.03E-01(3.84E-03)†	8.33E-01(8.62E-04)	5.08E-01(3.81E-04)†	8.26E-01(1.20E-03)†	8.50E-01(1.77E-03)
	25	9.82E-01(5.49E-05)‡	9.50E-01(3.56E-04)†	9.78E-01(1.40E-04)‡	5.12E-01(2.01E-06)†	6.04E-01(2.08E-01)†	9.66E-01(2.72E-04)
	50	9.94E-01(1.57E-06)‡	9.74E-01(6.84E-05)†	9.94E-01(3.35E-06)‡	5.13E-01(2.47E-07)†	9.74E-01(2.37E-04)†	9.90E-01(8.69E-06)
	200	9.99E-01(4.15E-08)‡	9.94E-01(4.72E-06)†	9.99E-01(3.70E-08)‡	5.12E-01(8.13E-08)†	9.96E-01(1.30E-06)†	9.98E-01(5.96E-07)
WFG4	5	9.80E-01(2.27E-05)†	9.36E-01(2.33E-04)†	9.67E-01(2.08E-05)†	8.27E-01(7.87E-05)†	9.90E-01(8.62E-06)†	9.93E-01(5.25E-06)
	25	9.93E-01(2.22E-06)†	9.78E-01(8.21E-06)†	9.90E-01(2.27E-06)†	8.42E-01(1.18E-05)†	6.45E-01(2.36E-01)†	1.00E+00(6.91E-09)
	50	9.96E-01(7.66E-07)†	9.83E-01(5.03E-06)†	9.94E-01(9.58E-07)†	8.47E-01(5.02E-06)†	1.00E+00(1.25E-10)	1.00E+00(1.91E-10)
	200	9.99E-01(9.84E-08)†	9.91E-01(1.11E-06)†	9.98E-01(1.41E-07)†	8.53E-01(1.85E-07)†	1.00E+00(2.49E-10)	1.00E+00(1.21E-11)
WFG5	5	9.70E-01(3.14E-05)†	9.49E-01(8.31E-05)†	9.49E-01(5.37E-05)†	9.52E-01(2.09E-05)†	9.80E-01(2.23E-05)	9.82E-01(2.31E-05)
	25	9.82E-01(1.63E-06)†	9.78E-01(6.61E-06)†	9.79E-01(3.47E-06)†	9.59E-01(1.81E-05)†	6.40E-01(2.33E-01)†	9.92E-01(1.91E-07)
	50	9.84E-01(4.57E-07)†	9.81E-01(1.47E-06)†	9.82E-01(1.09E-06)†	9.60E-01(2.71E-05)†	9.92E-01(2.07E-10)†	9.92E-01(3.09E-10)
	200	9.85E-01(5.28E-07)†	9.83E-01(1.74E-07)†	9.85E-01(2.64E-08)†	9.68E-01(2.07E-05)†	9.92E-01(1.15E-31)	9.92E-01(9.03E-14)
WFG6	5	9.62E-01(5.14E-05)†	9.01E-01(6.45E-04)†	9.37E-01(1.14E-04)†	4.67E-01(2.91E-05)†	9.42E-01(2.62E-04)†	9.63E-01(1.59E-04)
	25	9.90E-01(6.46E-06)†	9.79E-01(7.61E-06)†	9.88E-01(4.14E-06)†	4.60E-01(3.57E-06)†	6.42E-01(2.35E-01)†	9.98E-01(3.96E-07)
	50	9.95E-01(1.25E-06)†	9.87E-01(4.01E-06)†	9.93E-01(1.34E-06)†	4.58E-01(2.11E-06)†	9.99E-01(4.47E-08)†	1.00E+00(1.69E-08)
	200	9.98E-01(3.74E-07)†	9.95E-01(8.21E-07)†	9.98E-01(3.14E-07)†	4.56E-01(7.53E-09)†	1.00E+00(2.28E-09)	1.00E+00(6.61E-09)
WFG7	5	9.73E-01(2.05E-05)†	8.87E-01(2.33E-03)†	9.53E-01(7.57E-05)†	9.20E-01(9.33E-05)†	9.76E-01(2.62E-05)†	9.83E-01(1.83E-05)
	25	9.95E-01(1.60E-06)†	9.58E-01(4.90E-05)†	9.94E-01(1.21E-06)†	9.89E-01(3.98E-06)†	6.45E-01(2.36E-01)†	1.00E+00(3.08E-08)
	50	9.98E-01(3.89E-07)†	9.77E-01(3.92E-05)†	9.98E-01(3.83E-07)†	9.95E-01(1.01E-06)†	1.00E+00(1.34E-09)†	1.00E+00(1.07E-09)
	200	1.00E+00(7.85E-09)†	9.94E-01(1.08E-06)†	1.00E+00(3.98E-09)†	9.99E-01(3.68E-08)†	1.00E+00(6.65E-12)†	1.00E+00(3.36E-11)
WFG8	5	9.71E-01(4.87E-05)†	8.98E-01(8.17E-05)†	9.55E-01(9.60E-05)†	9.18E-01(8.46E-05)†	9.80E-01(3.63E-05)†	9.85E-01(1.28E-05)
	25	9.95E-01(1.60E-06)†	9.58E-01(4.90E-05)†	9.94E-01(1.21E-06)†	9.88E-01(6.10E-06)†	6.45E-01(2.36E-01)†	9.99E-01(2.51E-08)
	50	9.98E-01(3.37E-07)†	9.77E-01(2.08E-05)†	9.98E-01(3.41E-07)†	9.95E-01(1.24E-06)†	1.00E+00(6.95E-10)†	1.00E+00(8.07E-10)
	200	1.00E+00(3.38E-09)†	9.94E-01(1.07E-06)†	1.00E+00(5.83E-09)†	9.99E-01(3.64E-08)†	1.00E+00(4.91E-12)	1.00E+00(1.12E-11)
WFG9	5	9.80E-01(2.54E-05)‡	8.43E-01(3.49E-03)†	9.41E-01(4.32E-04)‡	9.42E-01(2.40E-04)‡	9.11E-01(1.58E-03)	9.24E-01(1.23E-03)
	25	9.95E-01(1.60E-06)	9.58E-01(4.90E-05)	9.94E-01(1.21E-06)	9.86E-01(5.70E-06)	6.19E-01(2.19E-01)†	9.53E-01(1.81E-03)
	50	9.97E-01(2.83E-07)	9.80E-01(1.15E-03)	9.96E-01(2.50E-07)	9.91E-01(1.41E-06)	9.41E-01(1.55E-03)	9.49E-01(1.74E-03)
	200	9.99E-01(2.49E-07)‡	9.89E-01(6.81E-04)‡	9.98E-01(1.79E-07)‡	9.95E-01(1.12E-06)‡	9.44E-01(1.69E-03)	9.37E-01(1.56E-03)

TABLE 132
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 3 TO 2 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.00E+00(0.00E+00)‡	9.72E-01(7.74E-03)†	9.92E-01(2.60E-04)†	9.80E-01(4.23E-04)†	9.99E-01(9.74E-07)†	1.00E+00(1.09E-07)
	25	1.00E+00(0.00E+00)‡	9.97E-01(4.54E-05)	1.00E+00(0.00E+00)‡	9.86E-01(2.72E-03)†	6.45E-01(2.37E-01)	1.00E+00(9.67E-10)
	50	1.00E+00(0.00E+00)‡	1.00E+00(8.72E-08)‡	1.00E+00(0.00E+00)‡	9.93E-01(1.89E-04)†	1.00E+00(5.03E-10)‡	9.99E-01(1.03E-06)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(1.61E-07)‡	1.00E+00(4.28E-10)	9.99E-01(7.36E-06)
F2	5	1.00E+00(0.00E+00)†	1.00E+00(4.79E-08)†	1.00E+00(1.04E-08)	8.80E-01(7.33E-02)†	1.00E+00(7.18E-10)†	1.00E+00(1.55E-10)
	25	1.00E+00(0.00E+00)†	1.00E+00(0.00E+00)†	1.00E+00(2.23E-09)	1.00E+00(9.54E-10)†	6.45E-01(2.37E-01)†	1.00E+00(3.95E-10)
	50	1.00E+00(0.00E+00)†	1.00E+00(0.00E+00)†	1.00E+00(5.60E-10)	1.00E+00(4.47E-10)†	1.00E+00(5.55E-10)†	1.00E+00(2.20E-10)
	200	1.00E+00(0.00E+00)†	1.00E+00(0.00E+00)†	1.00E+00(0.00E+00)†	1.00E+00(2.05E-10)	1.00E+00(3.45E-10)	1.00E+00(4.03E-10)
F3	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.02E-01(1.44E-02)†	1.00E+00(1.94E-07)†	1.00E+00(3.43E-09)
	25	1.00E+00(0.00E+00)	9.99E-01(3.03E-05)	1.00E+00(0.00E+00)	9.93E-01(9.01E-05)†	6.45E-01(2.37E-01)†	1.00E+00(1.56E-10)
	50	1.00E+00(0.00E+00)‡	1.00E+00(1.25E-09)‡	1.00E+00(0.00E+00)‡	9.96E-01(2.83E-05)†	1.00E+00(2.32E-12)‡	1.00E+00(4.14E-09)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(3.83E-08)†	1.00E+00(2.56E-10)‡	1.00E+00(5.62E-10)
F4	5	1.00E+00(3.30E-08)	1.00E+00(2.02E-08)†	1.00E+00(3.36E-07)†	1.00E+00(6.50E-10)	1.00E+00(1.79E-10)	1.00E+00(3.84E-10)
	25	1.00E+00(0.00E+00)‡	1.00E+00(5.25E-09)	1.00E+00(1.00E-09)†	1.00E+00(6.34E-10)	6.45E-01(2.37E-01)†	1.00E+00(1.47E-10)
	50	1.00E+00(8.06E-13)‡	1.00E+00(5.84E-10)	1.00E+00(1.09E-09)†	1.00E+00(2.78E-10)	1.00E+00(1.62E-10)	1.00E+00(1.54E-10)
	200	1.00E+00(0.00E+00)‡	1.00E+00(3.23E-14)‡	1.00E+00(0.00E+00)‡	1.00E+00(4.47E-10)	1.00E+00(1.96E-10)	1.00E+00(1.61E-10)
WFG1	5	8.79E-01(5.05E-04)†	8.52E-01(2.12E-04)†	8.23E-01(9.83E-04)†	5.67E-01(1.02E-06)†	8.66E-01(9.94E-04)†	9.15E-01(4.70E-04)
	25	9.53E-01(3.95E-04)†	8.73E-01(2.40E-04)†	9.34E-01(6.15E-04)†	5.69E-01(2.12E-07)†	6.05E-01(2.08E-01)†	9.70E-01(2.84E-04)
	50	9.72E-01(1.55E-04)†	8.78E-01(1.32E-04)†	9.74E-01(1.50E-04)†	5.70E-01(1.21E-08)†	9.56E-01(4.62E-04)†	9.80E-01(1.52E-04)
	200	9.97E-01(8.14E-07)	8.86E-01(2.85E-05)†	9.97E-01(1.18E-06)	5.70E-01(3.53E-09)†	9.94E-01(2.71E-05)	9.96E-01(1.07E-05)
WFG2	5	8.99E-01(2.52E-03)†	8.47E-01(2.22E-03)†	9.75E-01(2.72E-05)†	2.39E-01(3.82E-05)†	9.75E-01(1.63E-04)†	9.81E-01(3.10E-04)
	25	9.94E-01(1.21E-05)	8.89E-01(1.47E-05)†	9.94E-01(1.63E-05)	2.46E-01(1.37E-07)†	6.39E-01(2.32E-01)†	9.94E-01(2.41E-05)
	50	9.97E-01(3.98E-06)†	8.92E-01(1.89E-06)†	9.96E-01(6.31E-06)†	2.47E-01(2.12E-08)†	9.98E-01(1.64E-06)	9.99E-01(8.39E-07)
	200	1.00E+00(6.74E-08)‡	8.93E-01(1.02E-07)†	1.00E+00(5.03E-08)‡	2.47E-01(9.35E-10)†	9.96E-01(1.23E-08)	9.96E-01(3.38E-08)
WFG3	5	8.76E-01(4.98E-04)†	9.01E-01(5.36E-04)†	9.08E-01(2.09E-04)†	4.41E-01(6.57E-05)†	9.18E-01(2.99E-04)†	9.39E-01(1.99E-04)
	25	9.94E-01(2.41E-06)‡	9.90E-01(2.23E-06)	9.94E-01(1.59E-06)‡	4.46E-01(5.15E-07)†	6.35E-01(2.29E-01)†	9.90E-01(5.50E-06)
	50	9.98E-01(2.26E-07)‡	9.96E-01(3.90E-07)†	9.98E-01(3.11E-07)‡	4.47E-01(7.39E-08)†	9.93E-01(2.28E-06)†	9.96E-01(8.91E-07)
	200	1.00E+00(4.34E-09)‡	9.99E-01(5.67E-08)†	1.00E+00(1.58E-09)‡	4.47E-01(1.40E-09)†	1.00E+00(2.29E-08)†	1.00E+00(6.19E-09)
WFG4	5	9.75E-01(3.05E-05)	9.20E-01(3.71E-04)†	9.62E-01(4.04E-05)†	7.96E-01(1.12E-04)†	9.63E-01(1.45E-04)†	9.75E-01(4.35E-05)
	25	9.95E-01(9.94E-07)‡	9.79E-01(1.20E-05)†	9.94E-01(1.82E-06)†	8.21E-01(2.04E-05)†	6.42E-01(2.34E-01)†	9.95E-01(3.14E-05)
	50	9.98E-01(3.14E-07)†	9.83E-01(4.33E-06)†	9.98E-01(6.94E-07)†	8.29E-01(1.43E-05)†	9.98E-01(2.89E-06)	9.98E-01(3.31E-06)
	200	1.00E+00(5.65E-09)‡	9.91E-01(4.75E-06)†	1.00E+00(1.36E-08)‡	8.35E-01(6.57E-08)†	1.00E+00(1.14E-06)	1.00E+00(4.44E-07)
WFG5	5	9.56E-01(8.70E-05)‡	9.30E-01(3.06E-05)†	9.16E-01(1.01E-04)†	9.48E-01(1.47E-05)	9.45E-01(1.48E-04)	9.50E-01(1.74E-04)
	25	9.78E-01(7.17E-06)	9.43E-01(2.64E-05)†	9.59E-01(2.46E-04)†	9.63E-01(9.22E-05)†	6.30E-01(2.26E-01)†	9.78E-01(1.08E-04)
	50	9.81E-01(4.09E-06)†	9.47E-01(1.25E-04)†	9.66E-01(1.94E-04)†	9.61E-01(6.66E-05)†	9.85E-01(3.12E-05)	9.86E-01(1.51E-05)
	200	9.83E-01(1.19E-06)†	9.55E-01(2.36E-04)†	9.81E-01(9.85E-06)†	9.73E-01(2.82E-04)†	9.90E-01(1.44E-06)	9.90E-01(2.60E-06)
WFG6	5	9.56E-01(4.85E-05)‡	8.91E-01(2.72E-04)†	9.38E-01(1.60E-04)	5.23E-01(4.71E-05)†	9.13E-01(3.97E-04)†	9.42E-01(2.82E-04)
	25	9.92E-01(2.90E-06)‡	9.83E-01(1.48E-05)†	9.91E-01(2.47E-06)‡	5.23E-01(1.28E-05)†	6.34E-01(2.28E-01)†	9.85E-01(9.66E-05)
	50	9.96E-01(8.14E-07)	9.92E-01(2.73E-06)†	9.95E-01(1.09E-06)	5.22E-01(3.74E-07)†	9.94E-01(1.67E-05)	9.93E-01(4.17E-05)
	200	9.99E-01(3.74E-07)†	9.98E-01(1.65E-07)†	9.98E-01(1.71E-07)†	5.22E-01(4.80E-09)†	9.99E-01(7.54E-07)	9.99E-01(3.54E-07)
WFG7	5	9.66E-01(4.08E-05)	8.38E-01(1.66E-02)†	9.53E-01(1.74E-04)†	9.02E-01(3.07E-04)†	9.48E-01(1.91E-04)†	9.62E-01(1.74E-04)
	25	9.97E-01(4.88E-07)‡	9.64E-01(2.12E-04)†	9.96E-01(1.15E-06)	9.88E-01(1.21E-05)†	6.39E-01(2.32E-01)†	9.94E-01(2.30E-05)
	50	9.99E-01(8.06E-08)‡	9.89E-01(7.19E-06)†	9.99E-01(2.33E-07)‡	9.96E-01(7.43E-07)	9.96E-01(1.18E-05)	9.95E-01(2.40E-05)
	200	1.00E+00(4.66E-10)‡	9.98E-01(2.13E-07)†	1.00E+00(1.11E-10)‡	1.00E+00(1.19E-08)†	1.00E+00(6.17E-08)	1.00E+00(1.90E-07)
WFG8	5	9.68E-01(6.51E-05)	8.57E-01(2.36E-04)†	9.50E-01(9.42E-05)†	8.95E-01(3.03E-04)†	9.44E-01(1.53E-04)†	9.63E-01(1.51E-04)
	25	9.97E-01(4.88E-07)‡	9.64E-01(2.12E-04)†	9.96E-01(1.15E-06)‡	9.88E-01(1.16E-05)†	6.40E-01(2.33E-01)†	9.91E-01(5.20E-05)
	50	9.99E-01(8.45E-08)‡	9.89E-01(7.22E-06)†	9.99E-01(7.97E-08)‡	9.96E-01(8.34E-07)	9.96E-01(6.50E-06)	9.96E-01(1.00E-05)
	200	1.00E+00(7.80E-11)‡	9.98E-01(1.68E-07)†	1.00E+00(1.19E-10)‡	1.00E+00(1.50E-08)†	1.00E+00(1.58E-07)	1.00E+00(1.11E-07)
WFG9	5	9.76E-01(4.68E-05)‡	8.31E-01(4.10E-04)†	9.34E-01(8.00E-04)‡	8.96E-01(4.54E-04)‡	8.85E-01(2.53E-03)	8.73E-01(1.83E-03)
	25	9.97E-01(4.88E-07)‡	9.64E-01(2.12E-04)	9.96E-01(1.15E-06)‡	9.56E-01(3.32E-05)	6.11E-01(2.14E-01)†	9.41E-01(2.18E-03)
	50	9.97E-01(3.77E-07)‡	9.71E-01(1.68E-03)	9.97E-01(4.64E-07)‡	9.60E-01(1.23E-04)	9.33E-01(1.99E-03)	9.39E-01(2.35E-03)
	200	9.99E-01(1.47E-07)‡	9.88E-01(7.56E-04)‡	9.99E-01(1.42E-07)‡	9.80E-01(2.70E-04)‡	9.36E-01(2.17E-03)	9.28E-01(1.99E-03)

TABLE 133
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 2 TO 3 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.00E+00(0.00E+00)‡	9.82E-01(3.04E-03)†	1.00E+00(1.27E-08)	9.98E-01(1.60E-05)†	1.00E+00(5.48E-09)	1.00E+00(1.19E-07)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(8.46E-10)‡	6.45E-01(2.37E-01)†	9.94E-01(3.29E-04)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(3.69E-10)‡	1.00E+00(8.82E-12)	1.00E+00(8.82E-09)
	200	1.00E+00(4.31E-08)	1.00E+00(0.00E+00)‡	1.00E+00(1.54E-07)	1.00E+00(2.14E-10)‡	1.00E+00(1.86E-08)†	1.00E+00(3.87E-10)
F2	5	9.90E-01(2.01E-04)†	1.00E+00(0.00E+00)‡	1.00E+00(2.02E-10)	1.00E+00(8.07E-09)†	1.00E+00(3.88E-10)†	1.00E+00(3.87E-11)
	25	9.99E-01(6.02E-06)†	1.00E+00(0.00E+00)‡	1.00E+00(2.68E-10)†	1.00E+00(4.54E-12)	6.45E-01(2.37E-01)†	1.00E+00(1.84E-11)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(8.28E-12)	1.00E+00(3.23E-14)	1.00E+00(2.90E-12)†	1.00E+00(3.52E-12)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(6.24E-14)	1.00E+00(9.31E-13)
F3	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.96E-01(1.38E-04)‡	1.00E+00(4.91E-09)‡	9.93E-01(1.58E-03)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(3.58E-10)†	6.45E-01(2.37E-01)	1.00E+00(6.00E-10)
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(4.15E-09)†	1.00E+00(1.67E-06)†	1.00E+00(3.90E-12)
	200	1.00E+00(2.06E-12)	1.00E+00(0.00E+00)	1.00E+00(3.10E-11)	1.00E+00(1.78E-11)	1.00E+00(4.60E-12)†	1.00E+00(3.23E-14)
F4	5	1.00E+00(2.09E-11)‡	9.97E-01(3.41E-04)‡	1.00E+00(5.16E-10)‡	9.40E-01(6.95E-03)	1.00E+00(2.55E-11)‡	8.99E-01(8.62E-03)
	25	8.37E-01(2.99E-03)	9.82E-01(2.90E-03)‡	9.30E-01(7.95E-03)	9.42E-01(7.37E-03)‡	6.45E-01(2.37E-01)	8.46E-01(4.71E-03)
	50	1.00E+00(7.94E-08)‡	9.88E-01(2.10E-03)‡	1.00E+00(1.57E-11)‡	9.77E-01(3.61E-03)‡	1.00E+00(2.66E-12)‡	8.16E-01(5.70E-13)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.16E-01(2.90E-13)
WFG1	5	8.55E-01(7.30E-04)†	8.62E-01(1.14E-03)†	8.12E-01(9.34E-04)†	5.96E-01(7.13E-04)†	8.32E-01(1.37E-03)†	9.18E-01(1.00E-03)
	25	8.42E-01(1.14E-03)†	8.19E-01(1.95E-03)†	8.54E-01(1.15E-03)†	6.59E-01(5.94E-08)†	5.43E-01(1.68E-01)†	9.27E-01(1.91E-03)
	50	9.00E-01(4.88E-04)†	7.36E-01(7.42E-04)†	9.08E-01(4.57E-04)†	6.59E-01(1.39E-06)†	8.88E-01(1.35E-03)†	9.89E-01(3.63E-05)
	200	9.86E-01(2.56E-05)†	7.07E-01(1.70E-04)†	9.86E-01(2.62E-05)†	6.59E-01(5.07E-10)†	9.92E-01(1.25E-05)†	9.95E-01(1.19E-05)
WFG2	5	7.68E-01(2.56E-03)†	7.82E-01(1.61E-03)†	9.04E-01(1.34E-03)†	1.92E-01(2.22E-05)†	9.47E-01(1.07E-03)†	9.80E-01(6.59E-05)
	25	9.45E-01(9.68E-04)†	7.41E-01(1.84E-04)†	9.78E-01(7.79E-05)†	2.08E-01(5.11E-06)†	6.33E-01(2.28E-01)†	9.95E-01(1.05E-05)
	50	9.91E-01(2.59E-05)†	7.45E-01(1.67E-04)†	9.93E-01(1.30E-05)†	2.08E-01(1.03E-06)†	9.95E-01(6.96E-06)	9.95E-01(2.70E-06)
	200	9.98E-01(1.40E-06)‡	7.41E-01(1.57E-05)†	9.98E-01(6.33E-07)‡	2.08E-01(3.51E-07)†	9.87E-01(2.88E-07)‡	9.87E-01(9.62E-07)
WFG3	5	9.42E-01(3.13E-04)	8.97E-01(9.17E-04)†	9.16E-01(1.67E-04)†	5.03E-01(1.87E-04)†	9.00E-01(3.15E-04)†	9.44E-01(5.81E-04)
	25	9.97E-01(2.04E-06)‡	9.85E-01(1.34E-05)†	9.95E-01(1.40E-06)‡	5.14E-01(1.14E-07)†	6.35E-01(2.29E-01)†	9.93E-01(2.82E-06)
	50	9.99E-01(6.43E-08)‡	9.91E-01(2.55E-06)†	9.98E-01(3.41E-07)‡	5.13E-01(1.33E-07)†	9.93E-01(1.75E-06)†	9.97E-01(5.57E-07)
	200	1.00E+00(8.86E-10)‡	9.97E-01(1.53E-07)†	1.00E+00(2.62E-09)‡	5.13E-01(3.76E-09)†	9.99E-01(4.16E-08)†	1.00E+00(1.21E-08)
WFG4	5	9.46E-01(6.31E-04)†	9.57E-01(3.85E-05)†	9.81E-01(4.16E-05)†	8.28E-01(6.13E-05)†	9.90E-01(1.57E-05)†	9.95E-01(2.16E-06)
	25	9.98E-01(1.35E-07)†	9.84E-01(4.23E-06)†	9.97E-01(2.03E-07)†	8.45E-01(3.75E-06)†	6.45E-01(2.36E-01)†	1.00E+00(2.38E-09)
	50	9.99E-01(3.96E-08)†	9.87E-01(3.15E-06)†	9.99E-01(1.26E-07)†	8.49E-01(2.65E-06)†	1.00E+00(2.60E-10)†	1.00E+00(1.04E-10)
	200	1.00E+00(1.68E-09)†	9.93E-01(2.89E-06)†	1.00E+00(5.16E-09)†	8.53E-01(2.21E-08)†	1.00E+00(1.63E-11)†	1.00E+00(5.27E-12)
WFG5	5	9.75E-01(2.08E-04)†	9.67E-01(2.82E-05)†	9.66E-01(2.05E-05)†	9.53E-01(2.56E-05)†	9.83E-01(1.60E-05)	9.82E-01(1.65E-05)
	25	9.85E-01(2.94E-07)†	9.81E-01(6.32E-07)†	9.83E-01(9.45E-07)†	9.58E-01(1.05E-05)†	6.40E-01(2.33E-01)†	9.92E-01(2.21E-07)
	50	9.85E-01(3.48E-07)†	9.82E-01(6.19E-07)†	9.84E-01(3.89E-07)†	9.58E-01(7.43E-06)†	9.92E-01(3.72E-11)	9.92E-01(2.53E-11)
	200	9.85E-01(1.07E-06)†	9.83E-01(7.47E-07)†	9.85E-01(3.12E-07)†	9.63E-01(3.53E-05)†	9.92E-01(6.24E-14)	9.92E-01(6.24E-14)
WFG6	5	9.40E-01(3.14E-04)†	9.39E-01(1.18E-04)†	9.64E-01(6.26E-05)†	4.57E-01(1.03E-04)†	9.53E-01(1.17E-04)†	9.89E-01(1.83E-05)
	25	9.91E-01(5.97E-05)†	9.87E-01(7.12E-06)†	9.94E-01(1.28E-06)†	4.60E-01(4.56E-06)†	6.43E-01(2.35E-01)†	9.99E-01(3.89E-08)
	50	9.98E-01(3.37E-07)†	9.93E-01(1.99E-06)†	9.97E-01(7.91E-07)†	4.58E-01(2.39E-07)†	1.00E+00(2.16E-08)†	1.00E+00(8.81E-09)
	200	9.99E-01(2.86E-07)†	9.98E-01(1.90E-07)†	9.99E-01(1.44E-07)†	4.56E-01(9.97E-09)†	1.00E+00(2.58E-09)	1.00E+00(7.21E-09)
WFG7	5	9.87E-01(4.38E-06)†	9.09E-01(1.28E-03)†	9.80E-01(1.20E-05)†	9.34E-01(1.45E-04)†	9.81E-01(4.16E-05)†	9.96E-01(3.34E-06)
	25	9.99E-01(6.93E-08)†	9.77E-01(4.15E-05)†	9.99E-01(8.70E-08)†	9.89E-01(4.57E-06)†	6.45E-01(2.36E-01)†	1.00E+00(4.47E-10)
	50	1.00E+00(6.89E-09)†	9.90E-01(4.66E-06)†	1.00E+00(1.08E-08)†	9.95E-01(6.78E-07)†	1.00E+00(2.36E-10)†	1.00E+00(9.37E-11)
	200	1.00E+00(7.13E-12)†	9.98E-01(1.45E-07)†	1.00E+00(1.19E-11)†	9.99E-01(2.86E-08)†	1.00E+00(8.06E-13)†	1.00E+00(0.00E+00)
WFG8	5	9.88E-01(1.12E-05)†	9.14E-01(1.34E-04)†	9.80E-01(1.12E-05)†	9.27E-01(8.86E-05)†	9.79E-01(5.22E-05)†	9.95E-01(9.48E-06)
	25	9.99E-01(6.93E-08)†	9.77E-01(4.15E-05)†	9.99E-01(8.70E-08)†	9.90E-01(4.18E-06)†	6.45E-01(2.36E-01)†	1.00E+00(1.02E-09)
	50	1.00E+00(4.35E-09)†	9.90E-01(4.00E-06)†	1.00E+00(1.09E-08)†	9.95E-01(1.03E-06)†	1.00E+00(2.66E-10)†	1.00E+00(6.69E-11)
	200	1.00E+00(5.66E-12)†	9.98E-01(3.13E-07)†	1.00E+00(1.69E-11)†	9.99E-01(1.87E-08)†	1.00E+00(1.98E-12)†	1.00E+00(0.00E+00)
WFG9	5	9.90E-01(8.00E-06)‡	8.82E-01(3.43E-04)†	9.75E-01(1.15E-04)‡	9.50E-01(6.83E-05)‡	9.24E-01(2.10E-03)	9.28E-01(1.48E-03)
	25	9.99E-01(6.93E-08)	9.77E-01(4.15E-05)	9.99E-01(8.70E-08)	9.88E-01(3.92E-06)	6.19E-01(2.19E-01)†	9.54E-01(1.81E-03)
	50	9.98E-01(3.29E-07)	9.83E-01(1.17E-03)	9.98E-01(2.53E-07)	9.92E-01(1.87E-06)	9.41E-01(1.54E-03)	9.49E-01(1.78E-03)
	200	1.00E+00(1.10E-07)‡	9.90E-01(5.80E-04)‡	9.99E-01(1.13E-07)‡	9.95E-01(8.10E-07)‡	9.43E-01(1.72E-03)	9.36E-01(1.65E-03)

TABLE 134
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 3 TO 4 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.00E+00(0.00E+00)‡	9.80E-01(1.99E-03)	1.00E+00(3.23E-14)‡	9.74E-01(2.35E-03)†	1.00E+00(1.76E-09)	9.68E-01(3.23E-02)
	25	1.00E+00(0.00E+00)‡	9.99E-01(6.52E-06)	1.00E+00(0.00E+00)‡	9.86E-01(1.61E-03)†	6.44E-01(2.36E-01)†	9.93E-01(2.34E-04)
	50	1.00E+00(0.00E+00)‡	1.00E+00(6.13E-07)†	9.99E-01(6.09E-06)†	9.83E-01(1.73E-03)†	9.99E-01(6.93E-06)	1.00E+00(2.83E-07)
	200	1.00E+00(1.26E-07)†	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.89E-01(1.22E-03)†	1.00E+00(2.74E-08)†	1.00E+00(4.92E-10)
F2	5	9.54E-01(1.09E-03)†	1.00E+00(0.00E+00)‡	9.99E-01(1.38E-05)	9.73E-01(3.36E-03)	1.00E+00(2.15E-10)	9.97E-01(1.09E-04)
	25	9.93E-01(7.62E-05)†	1.00E+00(0.00E+00)	1.00E+00(3.65E-11)†	8.28E-01(4.49E-02)†	6.45E-01(2.37E-01)†	1.00E+00(3.23E-14)
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(3.23E-14)	2.71E-01(6.50E-02)†	1.00E+00(1.29E-13)	1.00E+00(0.00E+00)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	8.44E-06(1.13E-12)†	1.00E+00(3.23E-14)	1.00E+00(0.00E+00)
F3	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.25E-01(4.22E-03)†	1.00E+00(1.65E-09)	9.65E-01(3.23E-02)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.18E-01(4.02E-03)†	6.45E-01(2.37E-01)	9.99E-01(1.18E-05)
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	8.80E-01(1.55E-03)†	1.00E+00(1.37E-11)†	1.00E+00(1.29E-13)
	200	1.00E+00(8.06E-13)	1.00E+00(0.00E+00)	1.00E+00(2.77E-09)	5.30E-01(1.12E-01)†	1.00E+00(6.45E-13)†	1.00E+00(0.00E+00)
F4	5	1.00E+00(0.00E+00)‡	9.21E-01(4.20E-03)‡	9.46E-01(3.98E-03)‡	9.78E-01(4.01E-03)‡	9.92E-01(4.46E-04)‡	8.17E-01(7.81E-03)
	25	9.33E-01(3.24E-03)‡	9.60E-01(3.77E-03)‡	9.91E-01(1.12E-03)‡	9.91E-01(1.12E-03)‡	6.45E-01(2.37E-01)†	7.89E-01(6.52E-03)
	50	1.00E+00(0.00E+00)‡	9.96E-01(5.79E-04)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	7.74E-01(6.35E-03)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	7.63E-01(5.97E-03)
WFG1	5	8.04E-01(7.62E-04)†	7.80E-01(1.42E-03)†	7.45E-01(6.12E-04)†	4.72E-01(2.26E-03)†	7.74E-01(1.62E-03)†	8.32E-01(3.45E-03)
	25	7.84E-01(1.12E-03)†	6.26E-01(1.71E-03)†	7.64E-01(1.26E-03)†	5.41E-01(7.92E-04)†	4.95E-01(1.40E-01)†	9.51E-01(4.59E-04)
	50	8.71E-01(4.18E-04)†	5.61E-01(7.78E-04)†	8.75E-01(4.33E-04)†	5.55E-01(4.06E-04)†	8.78E-01(8.39E-04)†	9.85E-01(3.13E-05)
	200	9.75E-01(3.50E-05)†	5.61E-01(1.36E-04)†	9.77E-01(5.18E-05)†	5.58E-01(6.80E-05)†	9.86E-01(3.81E-05)†	9.90E-01(3.75E-05)
WFG2	5	6.81E-01(9.47E-04)†	6.54E-01(2.20E-03)†	8.11E-01(2.89E-03)†	1.81E-01(1.50E-05)†	8.68E-01(1.62E-03)†	9.73E-01(2.30E-04)
	25	9.10E-01(5.45E-04)†	5.79E-01(2.36E-04)†	9.64E-01(2.43E-04)†	1.92E-01(2.10E-06)†	6.23E-01(2.21E-01)†	9.92E-01(1.43E-05)
	50	9.82E-01(4.13E-05)†	5.87E-01(2.47E-04)†	9.87E-01(2.96E-05)	1.92E-01(1.26E-06)†	9.89E-01(1.31E-05)	9.89E-01(7.89E-06)
	200	9.96E-01(3.19E-06)‡	5.93E-01(1.12E-04)†	9.96E-01(4.41E-06)‡	1.91E-01(1.37E-08)†	9.79E-01(1.09E-06)‡	9.78E-01(1.27E-06)
WFG3	5	9.50E-01(3.18E-04)	8.56E-01(1.57E-03)†	9.15E-01(2.73E-04)†	4.94E-01(2.49E-04)†	8.84E-01(5.70E-04)†	9.51E-01(3.57E-04)
	25	9.98E-01(5.35E-07)‡	9.77E-01(4.14E-05)†	9.94E-01(7.85E-06)‡	5.00E-01(9.31E-07)†	6.33E-01(2.28E-01)†	9.92E-01(6.58E-06)
	50	9.99E-01(1.02E-07)‡	9.88E-01(1.13E-05)†	9.98E-01(5.04E-07)‡	4.97E-01(5.73E-07)†	9.92E-01(5.04E-06)†	9.97E-01(1.73E-06)
	200	1.00E+00(2.12E-09)‡	9.97E-01(5.04E-07)†	1.00E+00(4.79E-08)‡	4.96E-01(1.44E-08)†	9.99E-01(6.72E-08)†	1.00E+00(2.87E-08)
WFG4	5	9.00E-01(4.60E-04)†	9.69E-01(2.79E-05)†	9.85E-01(2.17E-05)†	8.48E-01(4.20E-05)†	9.91E-01(8.60E-05)†	9.98E-01(3.79E-07)
	25	9.99E-01(5.61E-08)†	9.86E-01(4.52E-06)†	9.97E-01(6.20E-07)†	8.61E-01(2.03E-06)†	6.45E-01(2.37E-01)†	1.00E+00(4.08E-10)
	50	1.00E+00(1.61E-08)†	9.89E-01(3.25E-06)†	9.98E-01(2.41E-07)†	8.64E-01(4.17E-07)†	1.00E+00(3.82E-11)†	1.00E+00(1.08E-10)
	200	1.00E+00(1.09E-09)†	9.94E-01(2.40E-06)†	1.00E+00(3.59E-08)†	8.66E-01(1.91E-09)†	1.00E+00(9.18E-13)†	1.00E+00(3.61E-13)
WFG5	5	9.56E-01(1.12E-03)†	9.75E-01(1.16E-05)†	9.76E-01(4.22E-06)†	8.89E-01(2.65E-04)†	9.91E-01(5.57E-07)	9.90E-01(2.27E-06)
	25	9.87E-01(8.85E-07)†	9.84E-01(5.65E-07)†	9.86E-01(1.96E-07)†	8.95E-01(3.01E-05)†	6.40E-01(2.33E-01)†	9.93E-01(1.11E-07)
	50	9.87E-01(2.13E-07)†	9.85E-01(2.86E-07)†	9.87E-01(5.30E-08)†	8.93E-01(2.16E-05)†	9.93E-01(4.47E-12)	9.93E-01(1.00E-12)
	200	9.87E-01(3.95E-07)†	9.87E-01(8.74E-09)†	9.87E-01(1.02E-07)†	8.98E-01(1.43E-05)†	9.93E-01(1.15E-31)	9.93E-01(1.15E-31)
WFG6	5	8.81E-01(6.24E-04)†	9.53E-01(6.17E-05)†	9.72E-01(5.13E-05)†	4.00E-01(3.62E-05)†	9.76E-01(4.05E-05)†	9.94E-01(8.21E-06)
	25	9.87E-01(1.10E-04)†	9.89E-01(6.50E-06)†	9.94E-01(4.58E-06)†	4.00E-01(2.42E-06)†	6.44E-01(2.36E-01)†	1.00E+00(2.25E-08)
	50	9.98E-01(4.03E-07)†	9.94E-01(2.86E-06)†	9.97E-01(7.64E-07)†	3.99E-01(2.48E-07)†	1.00E+00(1.28E-08)†	1.00E+00(7.53E-09)
	200	9.99E-01(2.47E-07)†	9.98E-01(1.70E-07)†	9.99E-01(1.44E-07)†	3.99E-01(1.25E-07)†	1.00E+00(2.34E-09)	1.00E+00(6.63E-09)
WFG7	5	9.90E-01(2.74E-05)†	9.37E-01(7.58E-04)†	9.87E-01(1.09E-05)†	9.52E-01(9.09E-05)†	9.92E-01(6.45E-06)†	9.99E-01(3.71E-07)
	25	9.99E-01(2.13E-08)†	9.82E-01(3.00E-05)†	9.99E-01(5.13E-08)†	9.96E-01(7.27E-07)†	6.45E-01(2.36E-01)†	1.00E+00(1.24E-10)
	50	1.00E+00(2.54E-09)†	9.92E-01(4.82E-06)†	1.00E+00(6.09E-09)†	9.99E-01(1.00E-07)†	1.00E+00(8.12E-11)†	1.00E+00(9.12E-12)
	200	1.00E+00(1.82E-12)†	9.98E-01(1.88E-07)†	1.00E+00(4.02E-10)†	1.00E+00(2.13E-10)†	1.00E+00(1.16E-13)†	1.00E+00(0.00E+00)
WFG8	5	9.90E-01(5.82E-05)†	9.39E-01(6.01E-04)†	9.88E-01(8.79E-06)†	9.46E-01(4.48E-05)†	9.93E-01(5.88E-06)†	9.98E-01(1.06E-06)
	25	9.99E-01(2.13E-08)†	9.82E-01(3.00E-05)†	9.99E-01(5.13E-08)†	9.96E-01(5.81E-07)†	6.45E-01(2.36E-01)†	1.00E+00(1.41E-10)
	50	1.00E+00(1.34E-09)†	9.92E-01(4.43E-06)†	1.00E+00(1.04E-08)†	9.98E-01(6.86E-08)†	1.00E+00(5.52E-11)†	1.00E+00(1.30E-11)
	200	1.00E+00(2.10E-12)†	9.98E-01(2.79E-07)†	1.00E+00(7.25E-10)†	1.00E+00(4.43E-10)†	1.00E+00(1.61E-13)†	1.00E+00(0.00E+00)
WFG9	5	9.93E-01(1.66E-05)‡	9.06E-01(8.89E-04)†	9.87E-01(1.86E-05)‡	9.74E-01(6.04E-05)‡	9.40E-01(1.97E-03)	9.38E-01(1.16E-03)
	25	9.99E-01(2.13E-08)	9.82E-01(3.00E-05)	9.99E-01(5.13E-08)	9.95E-01(1.99E-07)	6.21E-01(2.20E-01)†	9.57E-01(1.61E-03)
	50	9.99E-01(2.70E-07)	9.85E-01(1.01E-03)	9.98E-01(2.33E-07)	9.97E-01(1.21E-07)	9.45E-01(1.36E-03)	9.51E-01(1.64E-03)
	200	1.00E+00(8.58E-08)‡	9.91E-01(5.21E-04)‡	9.99E-01(1.17E-07)‡	9.98E-01(9.12E-08)‡	9.46E-01(1.54E-03)	9.39E-01(1.43E-03)

TABLE 135
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 4 TO 5 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.00E+00(0.00E+00)‡	9.98E-01(3.22E-05)	1.00E+00(0.00E+00)‡	9.38E-01(5.57E-03)†	1.00E+00(3.46E-10)	9.68E-01(3.23E-02)
	25	1.00E+00(0.00E+00)‡	9.72E-01(2.10E-04)†	1.00E+00(0.00E+00)‡	9.75E-01(1.88E-03)†	6.39E-01(2.33E-01)†	9.95E-01(2.47E-04)
	50	9.99E-01(3.66E-05)†	9.97E-01(3.01E-05)	9.99E-01(2.03E-05)†	9.93E-01(4.03E-04)†	9.96E-01(6.82E-05)†	9.99E-01(8.51E-06)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.88E-01(3.45E-04)†	9.99E-01(4.59E-07)†	1.00E+00(7.02E-09)
F2	5	9.23E-01(1.21E-03)†	1.00E+00(0.00E+00)‡	9.99E-01(1.10E-05)‡	9.44E-01(5.85E-03)†	1.00E+00(3.75E-06)	9.96E-01(1.06E-04)
	25	9.95E-01(3.79E-05)†	1.00E+00(0.00E+00)	1.00E+00(6.82E-12)†	8.60E-01(9.19E-04)†	6.45E-01(2.37E-01)†	1.00E+00(1.29E-13)
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	7.09E-01(1.50E-02)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	9.96E-02(2.29E-03)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
F3	5	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.19E-01(3.10E-03)‡	1.00E+00(1.56E-10)	9.03E-01(9.02E-02)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.08E-01(5.53E-03)†	6.45E-01(2.37E-01)†	9.99E-01(3.04E-05)
	50	9.99E-01(8.19E-06)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	8.64E-01(7.87E-03)†	1.00E+00(1.24E-06)†	1.00E+00(6.32E-12)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	7.89E-01(1.35E-03)†	1.00E+00(4.34E-10)†	1.00E+00(1.83E-13)
F4	5	9.81E-01(1.37E-03)‡	8.79E-01(4.15E-03)‡	9.48E-01(2.98E-03)‡	9.90E-01(1.01E-03)‡	9.93E-01(4.19E-04)‡	7.67E-01(8.30E-03)
	25	9.90E-01(6.91E-04)‡	9.80E-01(1.80E-03)‡	1.00E+00(0.00E+00)‡	9.93E-01(6.95E-04)‡	6.45E-01(2.37E-01)†	7.50E-01(6.17E-03)
	50	1.00E+00(0.00E+00)‡	9.97E-01(3.60E-04)‡	1.00E+00(0.00E+00)‡	9.97E-01(3.60E-04)‡	1.00E+00(0.00E+00)‡	7.42E-01(4.75E-03)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	7.50E-01(1.20E-02)
WFG1	5	7.51E-01(1.94E-03)†	6.11E-01(5.00E-03)†	6.91E-01(1.26E-03)†	4.20E-01(1.41E-03)†	7.10E-01(2.41E-03)†	8.05E-01(3.27E-03)
	25	7.45E-01(6.57E-04)†	4.82E-01(1.04E-03)†	7.33E-01(9.20E-04)†	4.75E-01(6.28E-04)†	4.65E-01(1.24E-01)†	9.19E-01(4.16E-04)
	50	8.52E-01(3.79E-04)†	4.39E-01(4.59E-04)†	8.50E-01(5.82E-04)†	4.87E-01(3.84E-04)†	8.49E-01(6.57E-04)†	9.68E-01(1.09E-04)
	200	9.72E-01(9.35E-05)†	4.46E-01(9.77E-05)†	9.69E-01(6.64E-05)†	4.94E-01(8.56E-05)†	9.73E-01(5.55E-05)†	9.79E-01(7.41E-05)
WFG2	5	6.48E-01(5.15E-04)†	5.31E-01(3.73E-03)†	7.38E-01(2.26E-03)†	1.68E-01(4.14E-05)†	7.76E-01(1.06E-03)†	9.51E-01(1.48E-03)
	25	8.91E-01(3.92E-04)†	4.60E-01(4.47E-04)†	9.54E-01(3.01E-04)†	1.74E-01(2.38E-06)†	6.09E-01(2.11E-01)†	9.89E-01(2.28E-05)
	50	9.69E-01(1.34E-04)†	4.64E-01(2.31E-04)†	9.79E-01(3.25E-05)	1.73E-01(8.47E-08)†	9.83E-01(3.72E-05)	9.82E-01(7.70E-06)
	200	9.95E-01(3.28E-06)‡	4.74E-01(1.95E-04)†	9.95E-01(5.27E-06)‡	1.73E-01(3.22E-06)†	9.71E-01(1.94E-06)‡	9.69E-01(1.41E-06)
WFG3	5	9.52E-01(2.45E-04)‡	7.98E-01(2.68E-03)†	8.46E-01(1.66E-03)†	4.76E-01(2.88E-05)†	8.50E-01(1.21E-03)†	9.33E-01(8.15E-04)
	25	9.97E-01(7.08E-07)‡	9.56E-01(1.38E-04)†	9.89E-01(1.39E-05)‡	4.76E-01(2.87E-05)†	6.27E-01(2.23E-01)†	9.87E-01(2.01E-05)
	50	9.99E-01(1.93E-07)‡	9.78E-01(5.09E-05)†	9.95E-01(3.75E-06)	4.76E-01(2.98E-05)†	9.87E-01(1.16E-05)†	9.94E-01(7.77E-06)
	200	1.00E+00(6.60E-09)‡	9.95E-01(1.32E-06)†	9.99E-01(1.55E-07)‡	4.83E-01(2.31E-05)†	9.97E-01(5.08E-07)†	9.98E-01(5.52E-07)
WFG4	5	8.78E-01(9.74E-04)†	9.68E-01(2.48E-04)†	9.83E-01(6.71E-05)†	8.60E-01(1.09E-04)†	9.81E-01(1.77E-04)†	9.99E-01(1.75E-07)
	25	9.99E-01(6.41E-08)†	9.86E-01(1.01E-04)†	9.97E-01(1.06E-06)†	8.73E-01(2.16E-06)†	6.45E-01(2.37E-01)†	1.00E+00(2.55E-10)
	50	1.00E+00(9.58E-09)†	9.91E-01(3.46E-05)†	9.98E-01(4.24E-07)†	8.74E-01(5.17E-07)†	1.00E+00(1.28E-11)†	1.00E+00(8.24E-11)
	200	1.00E+00(8.27E-10)†	9.97E-01(1.71E-06)†	9.99E-01(1.10E-07)†	8.74E-01(1.09E-07)†	1.00E+00(9.03E-14)	1.00E+00(4.65E-13)
WFG5	5	9.29E-01(1.27E-03)†	9.80E-01(7.82E-06)†	9.81E-01(2.00E-06)†	8.09E-01(8.48E-05)†	9.92E-01(3.62E-08)‡	9.92E-01(8.79E-08)
	25	9.88E-01(1.45E-06)†	9.86E-01(3.43E-07)†	9.87E-01(2.38E-07)†	8.11E-01(6.52E-05)†	6.40E-01(2.33E-01)†	9.92E-01(1.17E-07)
	50	9.89E-01(2.22E-07)†	9.87E-01(1.87E-07)†	9.88E-01(1.22E-07)†	8.15E-01(3.47E-05)†	9.92E-01(5.36E-12)†	9.92E-01(1.04E-12)
	200	9.89E-01(3.22E-07)†	9.88E-01(1.64E-08)†	9.88E-01(4.54E-09)†	8.20E-01(8.95E-07)†	9.92E-01(2.47E-13)†	9.92E-01(4.59E-31)
WFG6	5	8.45E-01(3.64E-04)†	9.39E-01(6.67E-04)†	9.78E-01(3.48E-05)†	3.60E-01(7.89E-06)†	9.85E-01(2.02E-05)†	9.94E-01(4.49E-05)
	25	9.90E-01(6.65E-05)†	9.79E-01(2.58E-04)†	9.95E-01(1.01E-06)†	3.58E-01(1.24E-06)†	6.44E-01(2.36E-01)†	1.00E+00(1.87E-08)
	50	9.98E-01(1.36E-06)†	9.90E-01(9.45E-05)†	9.97E-01(5.66E-07)†	3.58E-01(1.42E-07)†	1.00E+00(1.10E-08)†	1.00E+00(6.56E-09)
	200	9.99E-01(2.17E-07)†	9.99E-01(1.51E-07)†	9.99E-01(1.33E-07)†	3.57E-01(5.53E-08)†	1.00E+00(2.35E-09)	1.00E+00(6.50E-09)
WFG7	5	9.94E-01(2.86E-05)†	9.06E-01(1.76E-03)†	9.91E-01(9.49E-06)†	9.64E-01(6.83E-05)†	9.95E-01(1.42E-05)†	9.99E-01(1.13E-06)
	25	1.00E+00(1.26E-08)†	9.84E-01(1.87E-04)†	9.99E-01(5.42E-08)†	9.98E-01(1.82E-07)†	6.45E-01(2.37E-01)†	1.00E+00(4.66E-11)
	50	1.00E+00(2.00E-09)†	9.94E-01(2.29E-05)†	1.00E+00(2.54E-08)†	1.00E+00(1.05E-08)†	1.00E+00(4.10E-11)†	1.00E+00(1.69E-12)
	200	1.00E+00(8.62E-13)†	9.99E-01(4.98E-08)†	1.00E+00(4.00E-09)†	1.00E+00(3.89E-11)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
WFG8	5	9.94E-01(2.02E-05)†	9.21E-01(1.12E-03)†	9.91E-01(9.45E-06)†	9.60E-01(4.54E-05)†	9.95E-01(1.99E-05)†	9.99E-01(5.19E-06)
	25	1.00E+00(1.26E-08)†	9.84E-01(1.87E-04)†	9.99E-01(5.42E-08)†	9.98E-01(2.44E-07)†	6.45E-01(2.37E-01)†	1.00E+00(4.64E-11)
	50	1.00E+00(8.73E-10)†	9.95E-01(7.39E-06)†	1.00E+00(1.94E-08)†	1.00E+00(1.43E-08)†	1.00E+00(1.96E-11)†	1.00E+00(4.19E-12)
	200	1.00E+00(9.29E-13)†	9.99E-01(8.81E-08)†	1.00E+00(3.57E-09)†	1.00E+00(8.09E-11)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
WFG9	5	9.95E-01(7.51E-06)‡	8.90E-01(2.42E-03)†	9.92E-01(7.68E-06)‡	9.79E-01(2.90E-05)‡	9.46E-01(1.86E-03)	9.41E-01(1.10E-03)
	25	1.00E+00(1.26E-08)	9.84E-01(1.87E-04)	9.99E-01(5.42E-08)	9.97E-01(2.09E-07)	6.22E-01(2.20E-01)†	9.58E-01(1.56E-03)
	50	9.99E-01(2.32E-07)	9.86E-01(9.48E-04)	9.98E-01(8.42E-08)	9.98E-01(8.34E-08)	9.46E-01(1.32E-03)	9.52E-01(1.59E-03)
	200	1.00E+00(7.87E-08)‡	9.92E-01(5.09E-04)‡	9.99E-01(6.80E-08)‡	9.99E-01(6.62E-08)‡	9.47E-01(1.50E-03)	9.40E-01(1.39E-03)

TABLE 136
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 5 TO 6 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.00E+00(0.00E+00)‡	9.44E-01(3.99E-03)‡	1.00E+00(0.00E+00)‡	9.45E-01(2.86E-03)‡	1.00E+00(6.02E-11)	8.37E-01(1.39E-01)
	25	1.00E+00(0.00E+00)‡	9.52E-01(6.83E-04)†	9.97E-01(2.09E-04)‡	9.90E-01(6.26E-04)	6.24E-01(2.23E-01)†	9.88E-01(4.10E-04)
	50	1.00E+00(0.00E+00)‡	9.93E-01(6.69E-05)†	1.00E+00(0.00E+00)‡	9.86E-01(8.75E-04)†	9.94E-01(5.02E-05)†	9.99E-01(4.58E-06)
	200	1.00E+00(0.00E+00)‡	1.00E+00(7.13E-11)‡	1.00E+00(0.00E+00)‡	9.82E-01(1.13E-03)	9.98E-01(9.66E-06)†	1.00E+00(8.12E-08)
F2	5	8.99E-01(1.34E-03)†	1.00E+00(0.00E+00)‡	9.99E-01(2.17E-05)	9.55E-01(3.63E-03)†	9.99E-01(8.83E-06)	9.96E-01(7.20E-05)
	25	1.00E+00(8.02E-07)	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.99E-01(3.19E-04)†	6.45E-01(2.37E-01)†	1.00E+00(2.27E-08)
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	8.69E-01(7.78E-03)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	6.24E-01(5.94E-03)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
F3	5	1.00E+00(0.00E+00)‡	9.99E-01(1.48E-05)‡	1.00E+00(0.00E+00)‡	9.07E-01(4.01E-03)‡	1.00E+00(1.38E-12)‡	7.09E-01(2.13E-01)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.12E-01(4.94E-03)‡	6.41E-01(2.34E-01)	8.00E-01(1.59E-01)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.80E-01(9.41E-03)†	1.00E+00(5.70E-07)†	1.00E+00(2.03E-08)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	7.70E-01(5.34E-03)†	1.00E+00(3.68E-10)†	1.00E+00(8.28E-13)
F4	5	9.76E-01(1.44E-03)‡	8.82E-01(2.25E-03)‡	9.78E-01(1.05E-03)‡	9.92E-01(4.18E-04)‡	9.89E-01(5.53E-04)‡	7.50E-01(7.45E-03)
	25	9.98E-01(7.83E-05)‡	9.89E-01(8.82E-04)‡	1.00E+00(3.23E-14)‡	9.96E-01(2.56E-04)‡	6.40E-01(2.33E-01)†	7.19E-01(4.32E-03)
	50	1.00E+00(0.00E+00)‡	9.98E-01(9.20E-05)‡	1.00E+00(0.00E+00)‡	9.98E-01(9.41E-05)‡	1.00E+00(0.00E+00)‡	7.20E-01(3.35E-03)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.97E-01(2.45E-04)‡	1.00E+00(0.00E+00)‡	7.44E-01(1.16E-02)
WFG1	5	6.93E-01(1.61E-03)†	4.56E-01(4.78E-03)†	6.21E-01(1.36E-03)†	3.88E-01(9.96E-04)†	6.32E-01(2.33E-03)†	7.53E-01(2.64E-03)
	25	7.33E-01(3.56E-04)†	4.06E-01(9.43E-04)†	7.15E-01(7.26E-04)†	4.35E-01(5.10E-04)†	4.48E-01(1.15E-01)†	8.76E-01(5.18E-04)
	50	8.41E-01(4.55E-04)†	3.73E-01(2.43E-04)†	8.33E-01(5.68E-04)†	4.46E-01(3.04E-04)†	8.19E-01(3.81E-04)†	9.47E-01(1.01E-04)
	200	9.70E-01(1.02E-04)	3.80E-01(1.22E-04)†	9.67E-01(1.01E-04)	4.51E-01(4.37E-05)†	9.56E-01(6.97E-05)†	9.67E-01(9.05E-05)
WFG2	5	6.32E-01(6.29E-04)†	4.25E-01(1.86E-03)†	6.94E-01(1.34E-03)†	1.61E-01(1.81E-05)†	7.27E-01(6.31E-04)†	9.49E-01(1.38E-03)
	25	8.92E-01(5.43E-04)†	3.89E-01(3.65E-04)†	9.46E-01(2.19E-04)†	1.64E-01(7.67E-07)†	5.94E-01(2.01E-01)†	9.85E-01(4.89E-05)
	50	9.64E-01(1.15E-04)†	3.94E-01(3.15E-04)†	9.73E-01(1.08E-04)	1.63E-01(3.53E-07)†	9.73E-01(2.42E-05)†	9.76E-01(8.43E-06)
	200	9.94E-01(7.89E-06)‡	4.03E-01(1.01E-04)†	9.93E-01(3.42E-06)‡	1.63E-01(7.90E-07)†	9.63E-01(1.21E-06)‡	9.62E-01(9.30E-07)
WFG3	5	9.54E-01(2.38E-04)‡	7.50E-01(1.34E-03)†	8.07E-01(2.09E-03)†	4.59E-01(3.03E-05)†	8.17E-01(2.42E-03)†	9.03E-01(2.53E-03)
	25	9.97E-01(2.38E-06)‡	9.38E-01(3.49E-04)†	9.84E-01(2.08E-05)‡	4.58E-01(1.80E-05)†	6.20E-01(2.19E-01)†	9.79E-01(1.13E-04)
	50	9.99E-01(6.11E-07)‡	9.65E-01(8.73E-05)†	9.92E-01(9.25E-06)‡	4.63E-01(1.89E-05)†	9.81E-01(3.19E-05)†	9.90E-01(2.37E-05)
	200	1.00E+00(1.50E-08)‡	9.93E-01(5.54E-06)†	9.98E-01(9.71E-07)‡	4.66E-01(4.34E-06)†	9.95E-01(1.71E-06)	9.96E-01(1.36E-06)
WFG4	5	8.67E-01(8.23E-04)†	9.26E-01(1.34E-03)†	9.80E-01(8.71E-05)†	8.60E-01(1.62E-04)†	9.71E-01(2.59E-04)†	9.98E-01(3.75E-05)
	25	1.00E+00(3.37E-08)†	9.24E-01(4.62E-04)†	9.97E-01(9.14E-07)†	8.66E-01(4.10E-06)†	6.45E-01(2.37E-01)†	1.00E+00(2.81E-10)
	50	1.00E+00(3.97E-09)†	9.37E-01(4.04E-04)†	9.98E-01(5.17E-07)†	8.66E-01(9.47E-07)†	1.00E+00(3.75E-11)†	1.00E+00(1.25E-10)
	200	1.00E+00(8.48E-10)†	9.51E-01(1.68E-04)†	9.99E-01(5.86E-08)†	8.64E-01(1.71E-06)†	1.00E+00(0.00E+00)	1.00E+00(6.24E-14)
WFG5	5	9.15E-01(1.11E-03)†	9.54E-01(8.56E-04)†	9.84E-01(1.73E-06)†	7.40E-01(3.34E-05)†	9.92E-01(2.22E-08)‡	9.91E-01(4.87E-08)
	25	9.90E-01(2.19E-07)†	9.33E-01(1.65E-04)†	9.88E-01(2.45E-07)†	7.43E-01(3.79E-05)†	6.40E-01(2.33E-01)†	9.92E-01(1.36E-07)
	50	9.90E-01(2.56E-07)†	9.35E-01(1.24E-04)†	9.89E-01(1.11E-07)†	7.45E-01(3.39E-05)†	9.92E-01(1.71E-10)†	9.92E-01(2.59E-10)
	200	9.90E-01(3.72E-07)†	9.49E-01(1.20E-04)†	9.90E-01(5.59E-09)†	7.48E-01(6.67E-06)†	9.92E-01(1.68E-10)†	9.92E-01(5.13E-11)
WFG6	5	8.23E-01(5.87E-04)†	8.81E-01(1.31E-03)†	9.82E-01(3.83E-05)†	3.29E-01(5.51E-06)†	9.86E-01(4.17E-05)†	9.96E-01(2.68E-05)
	25	9.94E-01(2.82E-05)†	8.93E-01(5.99E-04)†	9.96E-01(1.11E-06)†	3.27E-01(8.32E-07)†	6.44E-01(2.36E-01)†	1.00E+00(1.91E-08)
	50	9.98E-01(6.25E-07)†	9.09E-01(4.89E-04)†	9.98E-01(5.51E-07)†	3.27E-01(5.70E-08)†	1.00E+00(1.01E-08)†	1.00E+00(6.99E-09)
	200	9.99E-01(1.93E-07)†	9.41E-01(3.00E-04)†	9.99E-01(1.60E-07)†	3.26E-01(1.73E-08)†	1.00E+00(2.64E-09)	1.00E+00(6.82E-09)
WFG7	5	9.97E-01(4.62E-06)†	8.67E-01(2.32E-03)†	9.94E-01(2.76E-06)†	9.77E-01(6.64E-05)†	9.97E-01(1.53E-05)†	1.00E+00(4.62E-08)
	25	1.00E+00(5.16E-08)†	9.38E-01(2.22E-04)†	9.99E-01(7.79E-08)†	9.99E-01(2.76E-06)†	6.45E-01(2.37E-01)†	1.00E+00(1.57E-11)
	50	1.00E+00(7.40E-10)†	9.48E-01(6.95E-05)†	1.00E+00(5.91E-08)†	1.00E+00(3.37E-10)†	1.00E+00(4.65E-12)†	1.00E+00(6.67E-13)
	200	1.00E+00(2.33E-11)†	9.64E-01(2.01E-04)†	1.00E+00(9.49E-10)†	1.00E+00(8.19E-11)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
WFG8	5	9.97E-01(9.94E-06)†	8.71E-01(2.08E-03)†	9.94E-01(2.17E-06)†	9.75E-01(1.62E-04)†	9.97E-01(1.49E-05)†	1.00E+00(1.49E-07)
	25	1.00E+00(5.16E-08)†	9.38E-01(2.22E-04)†	9.99E-01(7.79E-08)†	9.99E-01(1.21E-06)†	6.45E-01(2.37E-01)†	1.00E+00(1.48E-11)
	50	1.00E+00(5.83E-10)†	9.48E-01(7.16E-05)†	9.99E-01(9.24E-08)†	1.00E+00(2.20E-07)†	1.00E+00(7.37E-12)†	1.00E+00(2.02E-12)
	200	1.00E+00(1.98E-13)†	9.72E-01(1.25E-04)†	1.00E+00(1.49E-09)†	1.00E+00(1.03E-10)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
WFG9	5	9.97E-01(2.61E-06)‡	8.34E-01(2.07E-03)†	9.95E-01(1.94E-06)‡	9.86E-01(2.03E-05)‡	9.48E-01(1.80E-03)	9.39E-01(1.31E-03)
	25	1.00E+00(5.16E-08)‡	9.38E-01(2.22E-04)	9.99E-01(7.79E-08)	9.91E-01(1.10E-04)	6.21E-01(2.20E-01)†	9.57E-01(1.63E-03)
	50	9.99E-01(1.80E-07)	9.37E-01(1.15E-03)	9.99E-01(1.79E-07)	9.95E-01(2.54E-05)	9.44E-01(1.37E-03)	9.51E-01(1.65E-03)
	200	1.00E+00(7.98E-08)‡	9.54E-01(8.73E-04)‡	1.00E+00(3.43E-08)‡	9.99E-01(3.58E-07)‡	9.46E-01(1.55E-03)	9.39E-01(1.45E-03)

TABLE 137
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR SOLUTIONS OBTAINED BY ALL COMBINED ALGORITHMS AT THE FIRST GENERATION AFTER CHANGING NUMBER OF OBJECTIVE FROM 6 TO 7 ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE.

Prob.	τ_t	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	5	1.00E+00(0.00E+00)‡	7.58E-01(6.03E-03)‡	1.00E+00(0.00E+00)‡	9.22E-01(5.47E-03)	9.93E-01(3.61E-04)‡	6.75E-01(2.24E-01)
	25	1.00E+00(0.00E+00)‡	8.97E-01(6.26E-04)‡	9.98E-01(1.32E-04)‡	9.96E-01(1.52E-04)‡	6.12E-01(2.14E-01)‡	6.41E-02(6.16E-02)
	50	1.00E+00(0.00E+00)‡	9.61E-01(2.16E-04)‡	1.00E+00(0.00E+00)‡	9.91E-01(4.61E-04)‡	9.82E-01(3.25E-04)‡	9.02E-01(9.01E-02)
	200	1.00E+00(0.00E+00)‡	1.00E+00(1.28E-07)‡	1.00E+00(0.00E+00)‡	9.82E-01(1.15E-03)‡	9.97E-01(2.60E-05)‡	9.68E-01(3.23E-02)
F2	5	8.88E-01(1.33E-03)†	9.99E-01(3.52E-06)‡	9.99E-01(2.30E-05)	9.58E-01(1.88E-03)†	9.93E-01(7.55E-05)	9.95E-01(1.08E-04)
	25	1.00E+00(0.00E+00)†	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	9.09E-01(8.17E-04)†	6.45E-01(2.37E-01)†	9.99E-01(1.08E-05)
	50	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	9.08E-01(1.64E-03)†	1.00E+00(1.16E-13)	1.00E+00(3.23E-14)
	200	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)	8.15E-01(5.68E-03)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
F3	5	1.00E+00(0.00E+00)‡	9.40E-01(9.11E-04)	1.00E+00(0.00E+00)‡	9.12E-01(1.74E-03)	1.00E+00(1.29E-13)‡	5.80E-01(2.51E-01)
	25	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.74E-01(7.91E-03)‡	6.42E-01(2.34E-01)‡	0.00E+00(0.00E+00)
	50	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.98E-01(4.45E-03)†	9.97E-01(6.02E-05)‡	9.67E-01(3.22E-02)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.74E-01(8.31E-03)†	1.00E+00(4.51E-08)‡	9.68E-01(3.23E-02)
F4	5	9.92E-01(4.86E-04)‡	9.02E-01(1.75E-03)‡	9.94E-01(2.70E-04)‡	9.86E-01(4.52E-04)‡	9.80E-01(6.33E-04)‡	6.80E-01(3.94E-02)
	25	9.99E-01(1.57E-05)‡	9.92E-01(5.00E-04)‡	1.00E+00(3.23E-14)‡	9.20E-01(5.98E-04)‡	6.45E-01(2.37E-01)‡	3.98E-01(1.36E-01)
	50	1.00E+00(0.00E+00)‡	9.98E-01(1.71E-04)‡	1.00E+00(0.00E+00)‡	9.02E-01(1.09E-03)‡	9.98E-01(1.78E-04)‡	3.24E-01(1.34E-01)
	200	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	1.00E+00(0.00E+00)‡	8.26E-01(1.04E-03)‡	1.00E+00(0.00E+00)‡	3.42E-01(1.51E-01)
WFG1	5	6.39E-01(1.47E-03)†	3.54E-01(2.10E-03)†	5.64E-01(1.40E-03)†	3.46E-01(4.60E-04)†	5.74E-01(2.15E-03)†	7.37E-01(1.78E-03)
	25	7.28E-01(4.12E-04)†	3.58E-01(7.96E-04)†	7.10E-01(8.96E-04)†	3.94E-01(6.30E-04)†	4.32E-01(1.06E-01)†	8.35E-01(6.62E-04)
	50	8.41E-01(5.48E-04)†	3.30E-01(3.02E-04)†	8.26E-01(5.72E-04)†	4.11E-01(4.72E-04)†	7.94E-01(4.09E-04)†	9.25E-01(2.07E-04)
	200	9.72E-01(8.76E-05)‡	3.28E-01(8.23E-05)†	9.68E-01(6.78E-05)‡	4.20E-01(4.79E-05)†	9.44E-01(1.23E-04)†	9.57E-01(1.21E-04)
WFG2	5	6.20E-01(7.44E-04)†	3.57E-01(1.32E-03)†	6.81E-01(1.07E-03)†	1.50E-01(8.70E-06)†	6.89E-01(1.15E-03)†	9.41E-01(1.59E-03)
	25	8.85E-01(3.31E-04)†	3.25E-01(1.75E-04)†	9.31E-01(2.51E-04)†	1.51E-01(3.86E-08)†	5.74E-01(1.88E-01)†	9.50E-01(3.11E-02)
	50	9.57E-01(1.79E-04)†	3.29E-01(9.66E-05)†	9.67E-01(7.42E-05)	1.51E-01(2.26E-08)†	9.65E-01(1.39E-04)	9.69E-01(2.15E-05)
	200	9.93E-01(4.29E-06)‡	3.42E-01(1.51E-04)†	9.93E-01(6.39E-06)‡	1.54E-01(3.82E-05)†	9.56E-01(2.56E-06)‡	9.54E-01(2.44E-06)
WFG3	5	9.51E-01(1.37E-04)‡	7.30E-01(3.03E-03)†	7.92E-01(2.11E-03)†	4.30E-01(2.45E-05)†	7.95E-01(3.00E-03)†	8.93E-01(2.63E-03)
	25	9.96E-01(6.79E-06)‡	9.03E-01(5.57E-04)†	9.77E-01(8.81E-05)	4.34E-01(8.07E-06)†	6.13E-01(2.13E-01)†	9.80E-01(8.57E-05)
	50	9.98E-01(1.93E-06)‡	9.42E-01(3.86E-04)†	9.88E-01(3.59E-05)	4.36E-01(6.47E-07)†	9.75E-01(1.51E-04)†	9.89E-01(9.97E-05)
	200	1.00E+00(8.65E-09)‡	9.87E-01(3.29E-05)†	9.98E-01(1.31E-06)‡	4.37E-01(1.69E-07)†	9.95E-01(2.10E-06)	9.95E-01(2.74E-06)
WFG4	5	8.59E-01(1.06E-03)†	8.79E-01(2.31E-03)†	9.72E-01(2.05E-04)†	8.31E-01(1.64E-04)†	9.51E-01(2.42E-04)†	9.94E-01(2.93E-04)
	25	9.99E-01(2.18E-06)†	8.42E-01(7.72E-04)†	9.97E-01(8.03E-07)†	8.32E-01(7.46E-05)†	6.41E-01(2.33E-01)†	1.00E+00(5.04E-10)
	50	1.00E+00(2.48E-09)†	8.70E-01(3.78E-04)†	9.99E-01(2.97E-07)†	8.30E-01(2.46E-05)†	1.00E+00(4.30E-08)†	1.00E+00(1.20E-10)
	200	1.00E+00(5.56E-10)†	8.89E-01(4.89E-04)†	1.00E+00(5.18E-08)†	8.19E-01(8.03E-06)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
WFG5	5	9.13E-01(1.05E-03)†	9.25E-01(1.48E-03)†	9.85E-01(1.94E-06)†	6.85E-01(2.24E-05)†	9.91E-01(1.81E-08)‡	9.90E-01(4.73E-08)
	25	9.91E-01(2.95E-07)	8.57E-01(5.77E-04)†	9.89E-01(3.07E-07)†	6.81E-01(4.75E-05)†	6.39E-01(2.32E-01)†	9.91E-01(1.77E-07)
	50	9.91E-01(3.37E-07)‡	8.65E-01(2.58E-04)†	9.90E-01(8.73E-08)†	6.84E-01(1.82E-05)†	9.91E-01(3.71E-10)	9.91E-01(7.03E-10)
	200	9.91E-01(6.93E-07)‡	8.90E-01(1.33E-04)†	9.91E-01(4.11E-08)	6.82E-01(1.48E-05)†	9.91E-01(6.64E-10)	9.91E-01(7.47E-10)
WFG6	5	8.11E-01(6.84E-04)†	8.04E-01(1.68E-03)†	9.84E-01(6.05E-05)†	3.03E-01(7.97E-06)†	9.84E-01(9.34E-05)†	9.92E-01(7.09E-05)
	25	9.97E-01(4.77E-06)‡	8.13E-01(1.63E-04)†	9.97E-01(6.13E-07)‡	3.02E-01(5.28E-07)†	6.45E-01(2.36E-01)†	9.96E-01(4.27E-05)
	50	9.99E-01(2.23E-07)†	8.30E-01(3.54E-04)†	9.98E-01(3.09E-07)†	3.02E-01(8.87E-08)†	1.00E+00(1.10E-08)†	1.00E+00(8.15E-09)
	200	9.99E-01(1.01E-07)†	8.41E-01(3.71E-04)†	1.00E+00(3.21E-08)†	3.02E-01(8.06E-08)†	1.00E+00(3.07E-09)	1.00E+00(7.62E-09)
WFG7	5	9.98E-01(1.89E-06)	8.27E-01(3.44E-03)†	9.96E-01(1.24E-06)	9.86E-01(2.07E-05)†	9.95E-01(4.02E-05)	9.92E-01(8.42E-05)
	25	1.00E+00(2.47E-08)†	8.78E-01(3.04E-04)†	9.99E-01(1.45E-07)†	9.75E-01(2.03E-04)†	6.45E-01(2.37E-01)†	1.00E+00(7.43E-12)
	50	1.00E+00(1.02E-08)†	8.86E-01(1.57E-04)†	1.00E+00(4.80E-08)†	9.75E-01(2.09E-04)†	1.00E+00(1.40E-12)†	1.00E+00(3.03E-13)
	200	1.00E+00(8.65E-13)†	9.21E-01(3.15E-04)†	1.00E+00(1.33E-09)†	9.39E-01(5.79E-04)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
WFG8	5	9.99E-01(1.53E-06)‡	8.37E-01(3.13E-03)†	9.96E-01(1.67E-06)†	9.78E-01(3.23E-04)†	9.98E-01(1.09E-05)	9.96E-01(4.36E-05)
	25	1.00E+00(2.47E-08)†	8.78E-01(3.04E-04)†	9.99E-01(1.45E-07)†	9.79E-01(2.02E-04)†	6.45E-01(2.37E-01)†	1.00E+00(4.96E-12)
	50	1.00E+00(1.68E-08)†	8.92E-01(1.61E-04)†	1.00E+00(5.17E-08)†	9.74E-01(2.17E-04)†	1.00E+00(1.19E-12)†	1.00E+00(2.26E-13)
	200	1.00E+00(1.41E-10)	9.17E-01(2.35E-04)†	1.00E+00(2.40E-10)†	9.39E-01(8.27E-04)†	1.00E+00(0.00E+00)	1.00E+00(0.00E+00)
WFG9	5	9.97E-01(4.48E-06)‡	8.09E-01(1.84E-03)†	9.96E-01(1.46E-06)‡	9.81E-01(1.88E-04)‡	9.48E-01(1.91E-03)	9.37E-01(1.26E-03)
	25	1.00E+00(2.47E-08)‡	8.78E-01(3.04E-04)†	9.99E-01(1.45E-07)	9.68E-01(2.31E-04)	6.20E-01(2.19E-01)†	9.54E-01(1.80E-03)
	50	9.99E-01(1.16E-07)	8.76E-01(8.17E-04)†	9.99E-01(1.13E-07)	9.59E-01(1.78E-04)	9.43E-01(1.58E-03)	9.48E-01(1.83E-03)
	200	1.00E+00(5.70E-08)‡	8.97E-01(9.15E-04)†	1.00E+00(2.85E-08)‡	9.50E-01(2.53E-04)‡	9.49E-01(1.78E-03)	9.38E-01(1.72E-03)

TABLE 138
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR SOLUTIONS OBTAINED BY TWO PAIRS OF COMPARISON UNDER DIFFERENT OPTIMIZATION ALGORITHMS IN THE LAST GENERATION AFTER OPTIMIZATION ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	DTAEAv1	DTAEA	KTDMOEAv1	KTDMOEA
F1	9.96E-01(1.46E-07)	9.75E-01(9.87E-04)†	9.56E-01(2.47E-03)†	9.96E-01(9.75E-10)
F2	9.58E-01(1.61E-09)	9.58E-01(6.69E-08)†	9.56E-01(1.17E-06)†	9.58E-01(1.15E-09)
F3	9.58E-01(1.05E-06)	8.86E-01(3.76E-03)†	8.67E-01(3.97E-03)†	9.56E-01(1.58E-06)
F4	9.58E-01(3.66E-09)	9.58E-01(3.12E-08)†	7.96E-01(1.67E-04)†	8.89E-01(4.17E-04)
WFG1	9.69E-01(4.35E-06)	9.54E-01(1.21E-05)†	9.49E-01(1.78E-05)†	9.70E-01(1.18E-06)
WFG2	9.56E-01(6.14E-04)	9.67E-01(2.07E-08)‡	9.66E-01(1.37E-06)†	9.68E-01(2.36E-09)
WFG3	7.01E-01(7.44E-06)	6.94E-01(1.06E-05)†	6.68E-01(5.12E-05)†	6.89E-01(7.10E-04)
WFG4	8.30E-01(1.22E-07)	8.28E-01(5.53E-07)†	8.25E-01(9.44E-06)†	8.30E-01(2.10E-07)
WFG5	7.86E-01(6.81E-07)	7.85E-01(9.78E-07)†	7.55E-01(5.55E-05)†	7.86E-01(1.48E-06)
WFG6	7.47E-01(1.68E-03)	7.56E-01(1.77E-03)	7.39E-01(4.54E-04)†	7.61E-01(4.48E-04)
WFG7	8.32E-01(1.40E-08)	8.31E-01(1.01E-07)†	8.31E-01(1.35E-07)†	8.32E-01(3.03E-04)
WFG8	8.32E-01(2.61E-08)	8.31E-01(6.00E-08)†	8.31E-01(1.20E-07)†	8.32E-01(2.09E-04)
WFG9	4.86E-01(6.97E-05)	4.92E-01(6.23E-05)‡	4.47E-01(1.50E-03)†	4.52E-01(1.31E-03)

TABLE 139
MEAN AND STANDARD DEVIATION VALUES OF GD METRIC FOR SOLUTIONS OBTAINED BY TWO PAIRS OF COMPARISON UNDER DIFFERENT OPTIMIZATION ALGORITHMS IN THE LAST GENERATION AFTER OPTIMIZATION ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	DTAEAv1	DTAEA	KTDMOEAv1	KTDMOEA
F1	1.72E-01(1.29E-01)	1.04E+00(6.01E-01)†	8.01E-01(3.75E-01)†	4.34E-02(2.29E-03)
F2	3.50E-02(8.58E-07)	3.89E-02(6.02E-07)†	3.84E-02(4.63E-07)†	3.38E-02(2.22E-07)
F3	2.16E-01(9.26E-02)	4.19E+00(8.22E+00)†	2.80E+00(3.61E+00)†	3.00E-01(1.37E-01)
F4	3.41E-02(6.87E-07)	3.37E-02(5.80E-07)	1.47E-02(8.53E-07)‡	2.31E-02(3.55E-06)
WFG1	1.81E-01(2.48E-05)	2.24E-01(2.83E-05)†	2.20E-01(5.01E-05)†	1.81E-01(2.00E-05)
WFG2	4.36E-01(5.57E-03)	4.46E-01(5.24E-05)†	4.43E-01(8.43E-05)‡	4.54E-01(3.96E-05)
WFG3	1.58E+00(9.48E-04)	1.58E+00(9.13E-04)	5.30E-01(6.90E-02)‡	1.48E+00(5.12E-03)
WFG4	2.25E-01(9.04E-06)	2.24E-01(1.04E-05)‡	2.21E-01(1.02E-05)‡	2.24E-01(9.45E-06)
WFG5	2.76E-01(8.84E-06)	2.81E-01(1.06E-05)†	2.86E-01(2.17E-05)†	2.74E-01(1.06E-05)
WFG6	3.44E-01(6.23E-03)	3.42E-01(7.66E-03)	3.32E-01(1.65E-03)	3.12E-01(1.36E-03)
WFG7	2.05E-01(5.35E-06)	2.09E-01(3.98E-06)†	2.07E-01(5.14E-06)†	2.05E-01(1.06E-05)
WFG8	2.06E-01(5.54E-06)	2.09E-01(6.16E-06)†	2.08E-01(7.66E-06)†	2.05E-01(5.90E-06)
WFG9	9.25E-01(4.19E-04)	9.23E-01(3.52E-04)	8.94E-01(2.89E-03)	8.70E-01(2.34E-03)

TABLE 140
MEAN AND STANDARD DEVIATION VALUES OF MS METRIC FOR SOLUTIONS OBTAINED BY TWO PAIRS OF COMPARISON UNDER DIFFERENT OPTIMIZATION ALGORITHMS IN THE LAST GENERATION AFTER OPTIMIZATION ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY INCREASING THE NUMBER OF OBJECTIVES FROM 2 TO 7 AND THEN DECREASING IT FROM 7 TO 2, BOTH ONE BY ONE.

Prob.	DTAEAv1	DTAEA	KTDMOEAv1	KTDMOEA
F1	9.99E-01(3.74E-06)	9.84E-01(4.23E-05)†	9.56E-01(8.72E-05)†	9.96E-01(1.99E-05)
F2	1.00E+00(2.37E-07)	1.00E+00(3.61E-12)‡	9.98E-01(2.31E-06)†	1.00E+00(5.12E-08)
F3	9.99E-01(3.21E-07)	9.98E-01(3.35E-06)†	9.86E-01(1.56E-05)†	9.98E-01(2.87E-06)
F4	1.00E+00(2.02E-06)	9.99E-01(6.21E-06)†	7.05E-01(2.24E-04)†	7.17E-01(8.45E-04)
WFG1	9.60E-01(1.09E-04)	7.88E-01(3.69E-04)†	7.86E-01(1.93E-04)†	9.55E-01(3.01E-05)
WFG2	9.81E-01(6.19E-04)	9.58E-01(1.84E-05)†	9.31E-01(8.89E-05)†	9.84E-01(7.96E-06)
WFG3	9.97E-01(5.29E-05)	9.90E-01(6.51E-05)†	9.95E-01(6.71E-06)‡	9.74E-01(1.39E-03)
WFG4	1.00E+00(6.69E-08)	1.00E+00(6.68E-08)	9.98E-01(8.19E-06)†	1.00E+00(3.18E-08)
WFG5	9.86E-01(1.06E-06)	9.87E-01(7.13E-07)	9.74E-01(2.18E-05)†	9.86E-01(6.81E-07)
WFG6	9.75E-01(1.50E-04)	9.78E-01(1.79E-04)	9.74E-01(6.21E-05)‡	9.74E-01(5.22E-04)
WFG7	1.00E+00(2.74E-07)	1.00E+00(1.77E-08)	1.00E+00(2.63E-08)‡	9.90E-01(9.03E-04)
WFG8	9.99E-01(3.95E-07)	1.00E+00(2.03E-08)	1.00E+00(2.64E-07)‡	9.94E-01(6.24E-04)
WFG9	8.86E-01(1.21E-05)	8.87E-01(1.49E-05)	8.27E-01(3.28E-03)‡	7.92E-01(3.56E-03)

TABLE 141
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR SOLUTIONS OBTAINED BY ALL COMPARED ALGORITHMS IN THE LAST GENERATION RIGHT AFTER OPTIMIZATION ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHERE CHANGES OF THE NUMBER OF OBJECTIVES FOLLOWING THE PATTERN IN EQUATION 5.

Prob.	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	7.65E-01(7.35E-03)†	9.73E-01(3.06E-04)†	6.11E-01(8.45E-03)†	1.52E-01(1.49E-03)†	9.43E-01(3.84E-03)†	9.93E-01(5.47E-07)
F2	9.23E-01(1.15E-05)†	9.34E-01(2.59E-06)†	9.26E-01(2.61E-06)†	4.93E-01(2.98E-03)†	9.40E-01(1.14E-08)†	9.40E-01(1.79E-06)
F3	6.49E-01(2.55E-03)†	8.50E-01(6.62E-04)†	6.14E-01(2.72E-03)†	2.77E-02(5.05E-04)†	8.25E-01(1.06E-02)†	9.41E-01(4.28E-06)
F4	9.14E-01(4.64E-05)‡	9.08E-01(2.66E-04)‡	9.06E-01(1.28E-04)‡	9.14E-01(2.33E-05)‡	9.40E-01(3.18E-08)‡	8.61E-01(5.04E-04)
WFG1	9.34E-01(1.86E-05)†	8.67E-01(4.61E-05)†	9.32E-01(1.60E-05)†	1.83E-01(5.84E-08)†	9.36E-01(1.18E-05)†	9.52E-01(4.33E-06)
WFG2	9.42E-01(7.58E-07)†	9.03E-01(1.25E-05)†	9.43E-01(2.22E-07)†	2.48E-01(7.26E-09)†	9.47E-01(1.57E-07)†	9.48E-01(2.62E-07)
WFG3	7.02E-01(1.02E-05)†	6.90E-01(1.75E-05)†	7.14E-01(1.73E-06)†	2.60E-01(2.64E-08)†	6.96E-01(2.43E-05)†	7.49E-01(3.86E-05)
WFG4	7.23E-01(3.14E-05)†	6.79E-01(3.07E-05)†	7.02E-01(2.81E-05)†	3.51E-01(2.07E-05)†	7.87E-01(6.30E-06)†	8.06E-01(2.86E-05)
WFG5	6.75E-01(1.20E-04)†	6.79E-01(1.40E-05)†	6.78E-01(1.99E-05)†	5.34E-01(2.02E-05)†	7.50E-01(1.77E-06)†	7.57E-01(7.44E-05)
WFG6	6.52E-01(1.55E-04)†	6.62E-01(4.61E-05)†	6.85E-01(2.06E-04)†	1.57E-01(1.53E-05)†	7.21E-01(6.23E-04)†	7.39E-01(5.06E-04)
WFG7	7.41E-01(1.40E-05)†	6.41E-01(4.04E-05)†	7.38E-01(1.30E-05)†	7.00E-01(2.79E-05)†	7.97E-01(1.75E-07)†	8.18E-01(2.12E-08)
WFG8	7.41E-01(1.37E-05)†	6.45E-01(4.61E-05)†	7.38E-01(1.80E-05)†	6.99E-01(3.96E-05)†	7.97E-01(4.64E-07)†	8.18E-01(1.96E-08)
WFG9	4.08E-01(1.04E-03)†	4.07E-01(7.42E-05)†	4.64E-01(2.07E-03)†	6.70E-01(7.90E-03)‡	4.75E-01(1.09E-04)‡	4.65E-01(3.18E-04)
+-=	11/2/0	11/2/0	12/1/0	11/2/0	12/1/0	—

TABLE 142
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR SOLUTIONS OBTAINED BY ALL COMPARED ALGORITHMS IN THE LAST GENERATION RIGHT AFTER OPTIMIZATION ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHERE CHANGES OF THE NUMBER OF OBJECTIVES FOLLOW THE PATTERN IN EQUATION 6.

Prob.	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA
F1	3.58E-02(3.40E-03)†	8.05E-01(4.69E-03)‡	7.47E-03(7.20E-04)†	1.52E-01(1.49E-03)†	5.38E-01(5.29E-03)†	5.97E-01(3.56E-03)
F2	9.05E-01(1.31E-04)†	9.35E-01(1.90E-06)†	9.22E-01(7.18E-06)†	4.93E-01(2.98E-03)†	9.39E-01(9.43E-09)	9.39E-01(1.22E-06)
F3	4.92E-03(6.90E-04)†	6.60E-01(2.45E-03)‡	2.24E-04(1.54E-06)†	2.77E-02(5.05E-04)†	2.38E-01(4.43E-03)†	3.54E-01(1.26E-02)
F4	8.20E-01(8.67E-05)†	9.29E-01(7.68E-05)‡	8.96E-01(1.59E-04)‡	9.14E-01(2.33E-05)‡	9.39E-01(6.13E-08)‡	8.68E-01(8.29E-04)
WFG1	8.98E-01(2.76E-05)†	8.11E-01(3.82E-05)†	8.97E-01(2.97E-05)†	1.83E-01(5.84E-08)†	9.01E-01(1.53E-05)†	9.16E-01(1.27E-05)
WFG2	9.39E-01(1.78E-06)†	8.98E-01(1.00E-05)†	9.41E-01(6.65E-07)†	2.48E-01(7.26E-09)†	9.44E-01(4.40E-06)†	9.46E-01(2.40E-07)
WFG3	6.98E-01(7.44E-06)‡	6.74E-01(1.31E-05)†	7.08E-01(4.29E-06)‡	2.60E-01(2.64E-08)†	6.76E-01(2.30E-05)†	6.81E-01(2.52E-05)
WFG4	7.16E-01(5.10E-05)†	6.73E-01(2.27E-05)†	7.06E-01(1.92E-05)†	3.51E-01(2.07E-05)†	7.85E-01(6.21E-06)†	7.87E-01(3.12E-05)
WFG5	6.93E-01(3.43E-05)†	6.74E-01(3.44E-05)†	6.76E-01(2.79E-05)†	5.34E-01(2.02E-05)†	7.69E-01(2.82E-06)†	7.70E-01(1.98E-06)
WFG6	6.71E-01(8.37E-05)†	6.54E-01(2.37E-05)†	7.00E-01(4.13E-05)†	1.57E-01(1.53E-05)†	7.76E-01(1.44E-05)	7.75E-01(4.24E-05)
WFG7	7.37E-01(2.25E-05)†	6.16E-01(1.01E-04)†	7.34E-01(1.65E-05)†	7.00E-01(2.79E-05)†	7.93E-01(6.58E-07)†	7.95E-01(3.38E-07)
WFG8	7.37E-01(1.09E-05)†	6.11E-01(8.64E-05)†	7.35E-01(1.31E-05)†	6.99E-01(3.96E-05)†	7.93E-01(1.03E-06)†	7.96E-01(4.46E-07)
WFG9	7.29E-01(1.71E-05)‡	4.84E-01(3.90E-03)†	7.28E-01(2.10E-05)‡	6.70E-01(7.90E-03)	7.24E-01(1.16E-02)	6.24E-01(1.16E-02)
+-=	11/2/0	9/3/0	9/3/0	11/1/1	8/1/3	—

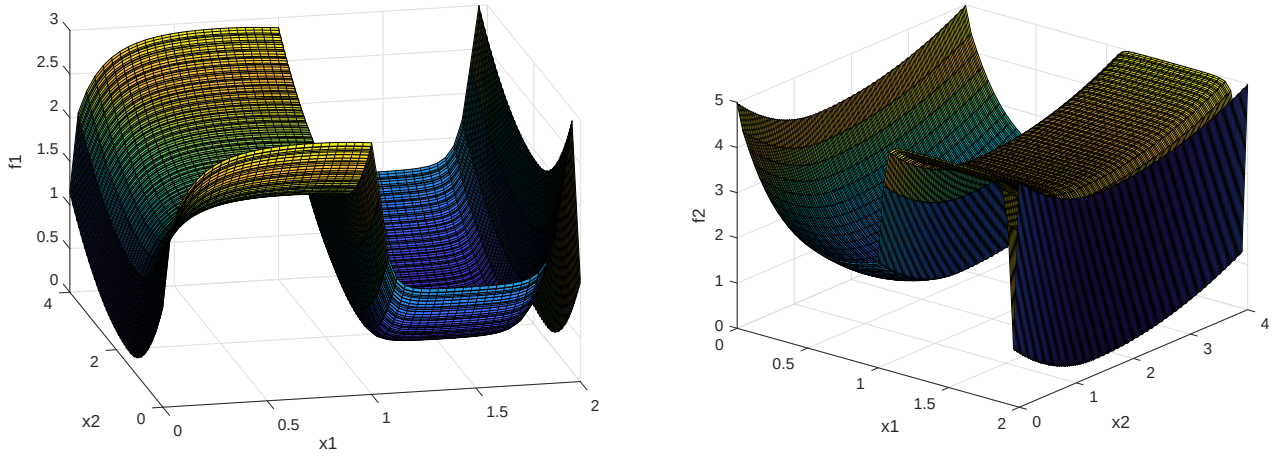

Fig. 1. Fitness landscape of bi-objective WFG9 problem with two variables ($x1$ and $x2$) where the sample step sizes for x1 and x2 are 0.002 and 0.004, respectively.

E. Impact of Algorithm Parameters

Table 143 of the supplementary file presents results of mean and deviation values for HV of optimized solutions in the changing sequence of firstly increasing from 2 to 7 and then decreasing it from 7 to 2 by all 8 algorithms (5 state-of-the-arts and three KTDMOEAs). In this table, three algorithms with best three HV values are highlighted.

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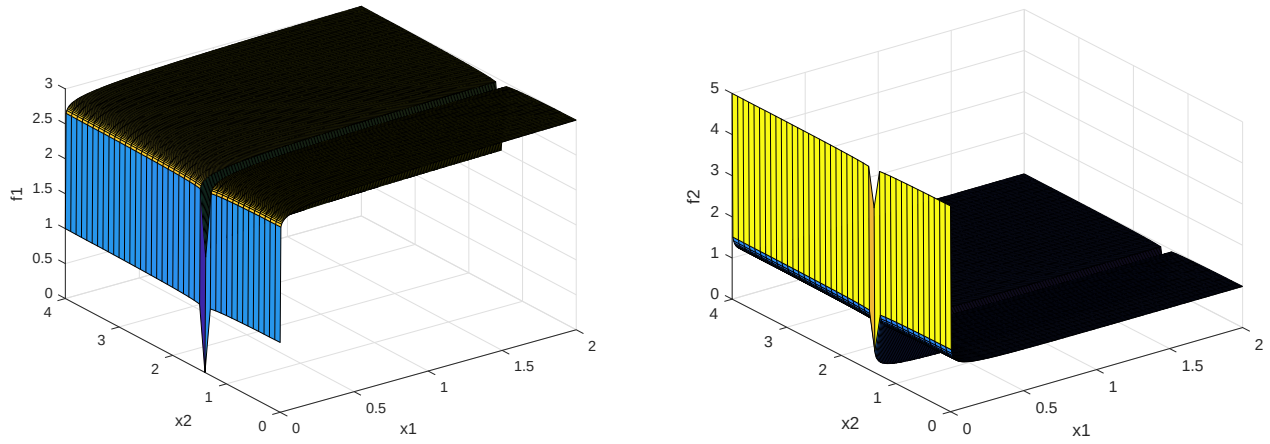

Fig. 2. Fitness landscape of bi-objective WFG1 problem with two variables ($x1$ and $x2$) where the sample step sizes for x1 and x2 are 0.005 and 0.1, respectively.

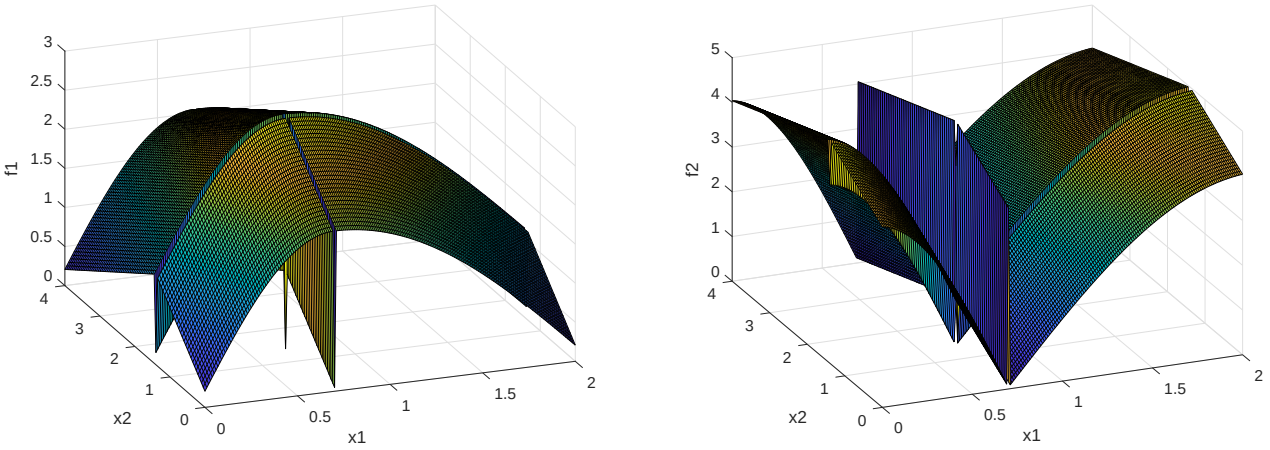

Fig. 3. Fitness landscape of bi-objective WFG5 problem with two variables ($x1$ and $x2$) where the sample step sizes for x1 and x2 are 0.005 and 0.01, respectively.

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TABLE 143
MEAN AND STANDARD DEVIATION VALUES OF HV METRIC FOR OPTIMIZED SOLUTIONS OBTAINED BY 5 STATE-OF-THE-ARTS AND THREE KTDMOEAS WITH DIFFERENT VALUES OF PARAMETERS (θ = 1, 2 AND 4) AT THE LAST GENERATION OF ALL CHANGES ON ALL DMOPS WITH A CHANGING NUMBER OF OBJECTIVES, WHEN FIRSTLY DECREASING THE NUMBER OF OBJECTIVES FROM 7 TO 2 AND THEN INCREASING IT FROM 2 TO 7, BOTH ONE BY ONE

Problems	NSGA2	MOEAD	DNSGA2	MOEAD-KF	DTAEA	KTDMOEA-1	KTDMOEA-2	KTDMOEA-4
DTLZ1	6.08E-01(2.07E-03)	9.88E-01(5.08E-05)	5.87E-01(9.39E-04)	8.64E-02(3.34E-04)	9.75E-01(9.87E-04)	9.96E-01(6.82E-08)	9.96E-01(9.75E-10)	9.96E-01(2.36E-08)
DTLZ2	9.38E-01(3.44E-06)	9.53E-01(6.22E-07)	9.33E-01(1.67E-05)	2.80E-01(5.38E-04)	9.58E-01(6.69E-08)	9.58E-01(9.02E-09)	9.58E-01(1.15E-09)	9.58E-01(9.33E-10)
DTLZ3	5.71E-01(6.49E-04)	9.27E-01(6.77E-05)	5.54E-01(5.72E-04)	2.08E-02(1.82E-04)	8.86E-01(3.76E-03)	9.58E-01(2.73E-06)	9.56E-01(1.58E-06)	9.58E-01(1.41E-06)
DTLZ4	9.10E-01(1.07E-04)	9.36E-01(1.02E-04)	8.95E-01(7.57E-05)	9.39E-01(1.24E-05)	9.58E-01(3.12E-08)	8.82E-01(7.89E-04)	8.89E-01(4.17E-04)	8.82E-01(7.78E-04)
WFG1	9.51E-01(1.14E-05)	8.86E-01(2.85E-05)	9.47E-01(1.14E-05)	8.10E-01(1.74E-08)	9.54E-01(1.21E-05)	9.70E-01(8.45E-07)	9.70E-01(1.18E-06)	9.69E-01(3.87E-06)
WFG2	9.63E-01(5.44E-07)	9.28E-01(5.60E-06)	9.63E-01(1.76E-07)	2.42E-01(2.11E-09)	9.67E-01(2.07E-08)	9.68E-01(6.87E-08)	9.68E-01(2.36E-09)	9.68E-01(2.20E-08)
WFG3	7.03E-01(1.49E-05)	6.84E-01(1.10E-05)	7.11E-01(1.15E-06)	2.53E-01(1.65E-08)	6.94E-01(1.06E-05)	6.84E-01(8.75E-04)	6.89E-01(7.10E-04)	7.02E-01(2.65E-06)
WFG4	7.45E-01(2.25E-05)	7.00E-01(2.49E-05)	7.21E-01(3.57E-05)	3.47E-01(2.85E-05)	8.28E-01(5.53E-07)	8.31E-01(8.12E-08)	8.30E-01(2.10E-07)	8.30E-01(1.00E-07)
WFG5	7.05E-01(3.01E-05)	7.00E-01(1.23E-05)	7.00E-01(2.56E-05)	5.35E-01(3.14E-06)	7.85E-01(9.78E-07)	7.87E-01(9.39E-07)	7.86E-01(1.48E-06)	7.87E-01(1.33E-06)
WFG6	6.90E-01(1.63E-04)	6.85E-01(1.95E-05)	7.11E-01(1.71E-04)	1.46E-01(1.65E-05)	7.56E-01(1.77E-03)	7.61E-01(3.95E-04)	7.61E-01(4.48E-04)	7.60E-01(5.37E-04)
WFG7	7.66E-01(1.56E-05)	6.82E-01(2.69E-05)	7.59E-01(7.21E-06)	7.23E-01(3.10E-05)	8.31E-01(1.01E-07)	8.32E-01(3.44E-08)	8.27E-01(3.03E-04)	8.32E-01(1.35E-08)
WFG8	7.66E-01(1.37E-05)	6.83E-01(3.27E-05)	7.60E-01(1.09E-05)	7.21E-01(3.49E-05)	8.31E-01(6.00E-08)	8.32E-01(1.75E-08)	8.28E-01(2.09E-04)	8.32E-01(2.10E-08)
WFG9	4.24E-01(7.02E-04)	4.10E-01(8.64E-05)	5.47E-01(4.91E-03)	7.01E-01(6.71E-03)	4.92E-01(6.23E-05)	4.46E-01(1.32E-03)	4.34E-01(1.31E-03)	4.62E-01(7.82E-04)