07:59 80%

D. the phenotype representation

E. the end of the search process

24 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

In EAs, the main characteristic of populations is

Selectați răspunsul corect:

A. the diversity ✔

B. the size

C. the chromosome structure

D. none of the other answers

E. the chromosome representation

25 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let X = [4, 5, 3, 8, 6, 10, 9, 7, 1, 2], Y = [8, 9, 7, 3, 1, 2, 6, 10, 5, 4] be a pair of parent permutations. The children resulted by applying the PMX procedure ar

07:59 80%

Întrebare cu flag

Let X = [9, 6, 4, 5, 3, 1, 2, 7, 10, 8], Y = [10, 3, 7, 6, 9, 2, 5, 4, 1, 8] be a pair of parent permutations. How many cycles results in case of applying the CX procedure?

Selectați răspunsul corect:

- A. 4
- B. 2
- C. 1
- D. 5
- E. 3 ✔

Finalizați evaluarea

← Presentation: Review

Sari la...

07:59 80%

e. e

29 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let X=[9, 4, 2, 1, 7, 5, 3, 10, 8, 6] and Y=[4, 2, 5, 1, 7, 9, 3, 10, 8, 6] be a pair of parent permutations. How many cycles results from applying the CX procedure?

Selectați răspunsul corect:

- A. 7 ✔
- B. 3
- C. 4
- D. 5
- E. 6

30 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

07:58 81%

Marcat 0,00 din 1,00

Întrebare cu flag

Let f:D={-2,-1,0,1,2,3} -> [0,5] be a function to be maximized. The simplest (less complex) method to compute a global maximum point involves:

Selectați răspunsul corect:

- A. the use of "Divide et Impera" method
- B. the use of hill climbing technique ✖
- C. the use of backtracking technique
- D. the evaluation of each element in D and the selection of the best one
- E. none of the other answers

18 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

In EAs, the selection benefits

Selectați răspunsul corect:

- A. the end of the search process
- B. the most unfit individuals

07:59 80%

28 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Consider v=[0,1,1,1,1,1], an individual from the space of binary vectors. Choose the correct statements from the following: a. a mutation in one gene of v may produce a vector with all elements 1; b. a mutation in one gene of v may produce a vector with all elements 0; c. a mutation in one gene of v may produce a vector 4 elements 1; d. a mutation in one gene of v may produce a vector 4 elements 0; e. none of the other statements.

Selectați răspunsul corect:

- a. a, b, c, d
- b. b, c, d
- c. a, c ✔
- d. a, b, d
- e. e

29 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

07:59 80%

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let X = [4, 5, 3, 8, 6, 10, 9, 7, 1, 2], Y = [8, 9, 7, 3, 1, 2, 6, 10, 5, 4] be a pair of parent permutations. The children resulted by applying the PMX procedure are C1 = [8, 9, 7, 3, 6, 10, 1, 2, 5, 4], C2 = [4, 5, 3, 8, 1, 2, 9, 7, 6, 10]. Which of the following pairs of positions produced C1 and C2?

Selectați răspunsul corect:

- A. (1, 4)
- B. (4, 6)
- C. (2, 6)
- D. (5,6) ✔
- E. (5, 7)

26 întrebare

07:59 80%

23 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

In GAs, the crossover operator depends on

Selectați răspunsul corect:

- A. none of the other answers ✗
- B. the genotype representation
- C. the population size
- D. the phenotype representation
- E. the end of the search process

24 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

In EAs, the main characteristic of populations is

Selectați răspunsul corect:

- A. the diversity ✓
- B. the size

07:59 81%

Marcat 0,00 din 1,00

Întrebare cu flag

The general recombination scheme is applied to:

Selectați răspunsul corect:

- A. Mutated offspring
- B. Offspring population ✖
- C. Parents
- D. Initial population
- E. Current population

23 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

In GAs, the crossover operator depends on

Selectați răspunsul corect:

- A. none of the other answers ✖
- B. the genotype representation
- C. the population size
- D. the phenotype representation
- E. the end of the search process

07:59 81%

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

The binary representation in GAs

Selectați răspunsul corect:

- A. Always leads to optimal algorithms
- B. Is not used
- C. Is the first encoding used to solve problems in terms of evolutionary computing ✔
- D. Does not depend on the problem to solve
- E. Is the most commonly used representation variant

22 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

The general recombination scheme is applied to:

Selectați răspunsul corect:

- A. Mutated offspring
- B. Offspring population ✖
- C. Parents

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38

13 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

In EAs, the mutation operates

Selectați răspunsul corect:

- A. after the crossover procedure ✔
- B. none of the other answers
- C. after the search is over
- D. only on the most unfit individuals
- E. only on the fittest individuals

14 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

In ESs, chromosomes representation: 1. Can be any of the following: binary strings, integer strings, real-valued vectors, permutations; 2. Can be integer strings or real-valued vectors; 3. Uses only real-valued vectors; 4. Does not influences the

07:58 81%

E. none of the other answers

18 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

In EAs, the selection benefits

Selectați răspunsul corect:

A. the end of the search process

B. the most unfit individuals

C. none of the other answers

D. each individual

E. the fittest individuals ✔

19 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

Consider f:[0,1]-> R, $f(x)=(1.000.000 + x)^2$ as the objective function in a maximization problem. A genetic algorithm that can compute the global maximum of f: a. uses stochastic procedures for selecting the next generation; b. uses tournament

07:58 81%

14 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

In ESs, chromosomes representation: 1. Can be any of the following: binary strings, integer strings, real-valued vectors, permutations; 2. Can be integer strings or real-valued vectors; 3. Uses only real-valued vectors; 4. Does not influences the recombination operator; 5. Is determined by the particular problem to be solved; 6. Influences the crossover operator; 7. Influences the survivors selection mechanism.

Selectați răspunsul corect:

- A. 2, 4, 5, 6
- B. 1, 3, 4
- C. 2, 4, 5
- D. 3, 4 ✔
- E. 1, 7

15 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

07:58 81%

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let X=[6 1 8 10 5 7 9 3 4 2] and Y=[9 8 7 3 6 1 5 10 4 2] be a pair of parent permutations. Which one of the following couple of permutations results in case of applying the CX procedure?

Selectați răspunsul corect:

- A. C1=Y, C2=X
- B. C1=[6 8 7 10 5 1 9 3 4 2], C2=[9 1 8 3 6 7 5 10 4 2] ✔
- C. C1=[2 6 7 8 10 5 1 9 3 4], C2=[2 8 1 3 6 7 5 10 4 9]
- D. C1=[8 7 10 5 1 9 3 4 2 6], C2=[2 9 1 8 3 6 7 5 10 4]
- E. C1=[6 7 8 10 5 1 9 3 4 2], C2=[9 8 1 3 6 7 5 10 4 2]

17 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

07:58 81%

Let X = [2, 4, 9, 6, 5, 7, 8, 1, 3, 10], Y = [8, 2, 6, 4, 1, 5, 7, 10, 3, 9] be a pair of parent permutations. Which one of the following couple of permutations results in case of applying the PMX procedure, if the crossover positions are (2,6)?

Selectați răspunsul corect:

- A. C1=[6, 7, 8, 10, 5, 1, 9, 3, 4, 2], C2=[9, 8, 1, 3, 6, 7, 5, 10, 4, 2]
- B. C1 = [8, 4, 9, 6, 5, 7, 10, 1, 3, 2], C2 = [9, 2, 6, 4, 1, 5, 8, 7, 10, 3]
- C. C1 = [3, 4, 9, 6, 5, 7, 1, 10, 8, 2], C2 = [10, 2, 6, 4, 1, 5, 8, 7, 3, 9]
- D. C1 = [8, 4, 9, 6, 5, 7, 1, 10, 3, 2], C2 = [9, 2, 6, 4, 1, 5, 8, 7, 3, 10] ✔
- E. C1 = [8, 3, 4, 2, 7, 9, 10, 5, 1, 6], C2 = [1, 4, 5, 9, 8, 7, 2, 3, 6, 10]

07:57 81%

2 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

A GA is over

Selectați răspunsul corect:

- A. without success
- B. successfully
- C. none of the other answers
- D. when a termination criterion is satisfied ✔
- E. suddenly

3 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let X = [1, 4, 5, 8, 7, 9, 2, 3, 6, 10], Y = [9, 3, 4, 2, 8, 7, [illegible] 5, 1, 6] be a pair of parent permutations. Which [illegible] of the following couple of permutations results in case of applying the PMX procedure, if the crossover positions are (5,6)?

07:58 81%

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

Consider v=[0,1,1,0,0,1,0] an individual from the space of binary vectors. The associated fitness function computes the sum of bits that constitute the vector representation. Choose the correct statements from the following: a. v has 7 neighbors at Hamming distance 1. b. there is at least one neighbor (binary vector at distance 1 from v) with a higher fitness value than v; c. there is at least one neighbor (binary vector at distance 1 from v) with a lower fitness value than v; d. there is no neighbor (binary vector at distance 1 from v) with the same fitness value as v; e. there is at least one neighbor (binary vector at distance 1 from v) with the same fitness value as v.

Selectați răspunsul corect:

- a. a, b, c ✖
- b. e
- c. b, c, d
- d. a, b, d
- e. a, b, c, d

13 întrebare

Corect

Marcat 1,00 din 1,00

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1 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

A GA maximizes

Selectați răspunsul corect:

- A. none of the other answers
- B. Linear functions only
- C. Exponential functions only
- D. Quadratic functions only
- E. Fitness functions ✔

2 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

A GA is over

Selectați răspunsul corect:

- A. without success
- B. successfully

07:57 81%

than two identical alleles

5 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

Usually, a genetic algorithm: a. starts a stochastic search in the solution space; b. uses only one variation operator; c. uses tournament selection with FPS probability distribution; d. Computes all optimal solutions of a problems; e. uses two DNA strains.

Selectați răspunsul corect:

- a. a, c, d
- b. a
- c. a, b, c
- d. e ✖
- e. b, c, d

6 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let X = [9, 6, 4, 5, 3, 1, 2, 7, 10, 8], Y = [10, 3, 7, 6, 9, 2

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Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

Let f:[0,1] -> R, f(x)=1.000.000+x*x be a fitness function (to be maximized). A suitable method used to calculate a global maximum point of the function f: a. involves the evaluation of each element in [0,1] and the selection of the best one; b. uses only ES-based methods; c. usually uses the hill climbing technique; d. can use a GA with real-valued vector representation; e. uses a GA with permutation representation.

Selectați răspunsul corect:

- A. b, c and e
- B. d
- C. a and b
- D. b and d ✖
- E. e

8 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

07:58 81%

8 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let B(100) be the set of the binary vectors having 100 bits and f:B(100)->N a fitness function (to be maximized). A suitable method used to calculate a global maximum point of the function f involves: a. the evaluation of each element in B(100) and the selection of the best one; b. the use of an ES algorithm; c. the use of the hill climbing method; d. a standard GA; e. any search method.

Selectați răspunsul corect:

- A. a
- B. b and c
- C. b and d
- D. e
- E. d ✔

9 întrebare

Corect

Marcat 1,00 din 1,00

07:59 80%

e. b, e

27 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

In ESs, the self-adaptation property is related to:

Selectați răspunsul corect:

A. Fitness

B. Mating pool selection

C. Probability distribution selection

D. Survivors selection ✖

E. The parameters space

28 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Consider v=[0,1,1,1,1,1], an individual from the space of binary vectors. Choose the correct statements from the following: a. a mutation in one gene of v may produce a vector with all elements 1; b. a

07:58 81%

11 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

The survivor selection in GA 1. Is always deterministic 2. Can be deterministic or stochastic 3. Always uses random factors 4. The selected individuals are not necessary feasible 5. Improves the average quality of the current population 6. Guarantees a better population in case it uses age factor 7. Is applied at the beginning of each iteration 8. Is applied on the offspring multi set 9. Is applied to replace the current population

Selectați răspunsul corect:

- A. 1, 6
- B. 2, 5 ✖
- C. 4, 8
- D. 2, 9
- E. 3, 7

12 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

07:59 81%

Marcat 1,00 din 1,00

Întrebare cu flag

Let X=[3, 8, 1, 6, 9, 5, 2, 10, 4, 7] and Y=[6, 7, 5, 10, 4, 2, 9, 3, 1, 8] be a pair of parent permutations. Which one of the following couple of permutations results in case of applying the CX procedure ?

Selectați răspunsul corect:

- A. C1 = [4, 7, 1, 6, 9, 5, 2, 10, 3, 8], C2 = [1, 6, 5, 10, 4, 2, 9, 3, 7, 8]
- B. C1 = [8, 7, 4, 6, 9, 5, 2, 10, 3, 1], C2 = [1, 6, 5, 10, 4, 2, 9, 3, 7, 8]
- C. C1=[6, 8, 7, 10, 5, 1, 9, 3, 4, 2], C2=[9, 1, 8, 3, 6, 7, 5, 10, 4, 2]
- D. C1 = [3, 7, 1, 6, 9, 5, 2, 10, 4, 8], C2 = [6, 8, 5, 10, 4, 2, 9, 3, 1, 7] ✔
- E. C1=X, C2=Y

21 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

07:58 81%

10 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

In GAs, the binary representation 1. Is effective when the solution is a vector of logical values 2. Should be used by every algorithm 3. Should not be used 4. Cannot be used to solve optimization problems 5. Influences the class of variation operators used to develop the algorithm 6. Imposes the use of roulette wheel mechanism 7. Is effective only for solving constrained problems

Selectați răspunsul corect:

- A. 1, 3, 5
- B. 1, 5 ✔
- C. 2, 3, 6
- D. 2, 4, 6
- E. 1, 4, 5

11 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

The survivor selection in GA 1. Is always

07:59 80%

Consider a population P with dim individuals. A genetic algorithm using P as current population generally ends when: a. P has many different individuals, no matter the size of representations b. P has many different individuals, no matter their quality; c. P has many individuals with different fitness values; d. P has many individuals with similar qualities; e. P has an even number of individuals; f. P has a small number of different individuals; g. the highest fitness value of individuals in P has not changed over the recent generations.

Selectați răspunsul corect:

- a. e, g, f
- b. d, f, g ✔
- c. a, b, c
- d. d, e, g
- e. b, e

27 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

In ESs, the self-adaptation property is related to:

07:58 81%

Let X = [9, 6, 4, 5, 3, 1, 2, 7, 10, 8], Y = [10, 3, 7, 6, 9, 2, 5, 4, 1, 8] be a pair of parent permutations. Which one of the following couple of permutations results in case of applying the CX procedure?

Selectați răspunsul corect:

- A. C1=[6 7 8 10 5 1 9 3 4 2], C2=[9 8 1 3 6 7 5 10 4 2]
- B. C1=X, C2=Y
- C. C1=[6 8 7 10 5 1 9 3 4 2], C2=[9 1 8 3 6 7 5 10 4 2]
- D. C1 = [9 6 7 5 3 1 2 4 10 8], C2 = [10 3 4 6 9 2 5 7 1 8] ✔
- E. C1=[8 7 10 5 1 9 3 4 2 6], C2=[2 9 1 8 3 6 7 5 10 4]

7 întrebare

Incorect

Marcat 0,00 din 1,00

07:57 81%

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

The binary representation in GAs

Selectați răspunsul corect:

- A. Does not involve mutation
- B. Is not allowed
- C. Uses specific variation operators ✔
- D. Does not involve recombination
- E. Does not use chromosomes having more than two identical alleles

5 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

Usually, a genetic algorithm: a. starts a stochastic search in the solution space; b. uses only one variation operator; c. uses tournament selection with FPS probability distribution; d. Computes all optimal solutions of a problems; e. uses two DNA strains.

Selectați răspunsul corect:

- a. a, c, d

07:58 81%

Întrebare cu flag

In GAs, the mutation: 1. Is used only in constrained problems 2. Is applied immediately a children population is available 3. Selects only a half of individuals to change them 4. Uses two distinct offspring multisets 5. Is always non-uniform 6. Is applied only once, after the initial population generation 7. The mutation probability is 1 8. Is applied once per algorithm 9. Uses the current population to compute new individuals 10. Is applied iteratively 11. Is the most commonly used variation operator 12.Is applied on pairs of chromosomes 13. Is of stochastic type

Selectați răspunsul corect:

- A. 6, 9, 10, 11
- B. 10,11,13
- C. 2, 10, 11
- D. 2, 8, 10
- E. 2, 10, 13 ✔

16 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let X=[6 1 8 10 5 7 0 3 4 2] and Y=[0 8 7 3 6 1 5 1

07:57 81%

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let X = [1, 4, 5, 8, 7, 9, 2, 3, 6, 10], Y = [9, 3, 4, 2, 8, 7, 10, 5, 1, 6] be a pair of parent permutations. Which one of the following couple of permutations results in case of applying the PMX procedure, if the crossover positions are (5,6)?

Selectați răspunsul corect:

- A. C1 = [8, 3, 4, 2, 7, 9, 10, 5, 1, 6], C2 = [1, 4, 5, 9, 8, 7, 2, 3, 6, 10] ✔
- B. C1 = [1, 6, 8, 3, 4, 2, 7, 9, 10, 5], C2 = [9, 8, 1, 4, 5, 7, 2, 3, 6, 10]
- C. C1 = [3, 4, 9, 6, 5, 7, 1, 10, 8, 2], C2 = [10, 2, 6, 4, 1, 5, 8, 7, 3, 9]
- D. C1 = [3, 8, 4, 2, 7, 9, 10, 5, 1, 6], C2 = [10, 4, 5, 9, 8, 7, 2, 3, 6, 1]
- E. C1 = [8, 3, 4, 7, 9, 10, 5, 1, 6, 2], C2 = [1, 4, 5, 7, 2, 3, 6, 10, 8 ,9]

07:59 81%

19 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

Consider f:[0,1]-> R, $f(x)=(1.000.000 + x)^2$ as the objective function in a maximization problem. A genetic algorithm that can compute the global maximum of f: a. uses stochastic procedures for selecting the next generation; b. uses tournament selection or implements simple FPS selection distribution; c. uses tournament selection or implements sigma-scaled FPS selection distribution; d. uses a selection method based on linear ranking probabilities; e. uses a selection method based on exponential ranking probabilities; f. any of mentioned methods is suitable.

Selectați răspunsul corect:

- a. a, d
- b. a, b
- c. c ✖
- d. f
- e. a, e

20 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

08:48 91%

E. C1=[2 6 7 8 10 5 1 9 3 4], C2=[2 8 1 3 6 7 5 10 4 9]

6 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

The binary representation in GAs

Selectați răspunsul corect:

- A. Is not used
- B. Always leads to optimal algorithms
- C. Is the most commonly used representation variant ✖
- D. Does not depend on the problem to solve
- E. Is the first encoding used to solve problems in terms of evolutionary computing

7 întrebare

Corect

Marcat 1,00 din 1,00

08:51 90%

30 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

The binary representation in GAs

Selectați răspunsul corect:

- A. Does not use chromosomes having more than two identical alleles
- B. Uses specific variation operators ✔
- C. Does not involve mutation
- D. Does not involve recombination
- E. Is not allowed

Finalizați evaluarea

← Presentation: Review

Sari la...

Navigare în test

1 2 3 4 5 6 7 8

08:49 90%

Selectați răspunsul corect:

- A. f, i
- B. h, i
- C. None of the other answers
- D. a, b
- E. c, d ✗

14 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

In EAs, the role of populations is

Selectați răspunsul corect:

- A. to define the chromosome representation
- B. none of the other answers
- C. to evaluate the fitness values
- D. to define the phenotype representation
- E. to hold possible solutions ✓

08:50 90%

e. b, c, d

22 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

The general recombination scheme is applied to:

Selectați răspunsul corect:

- A. Parents ✔
- B. Mutated offspring
- C. Initial population
- D. Offspring population
- E. Current population

23 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

08:49 90%
Final test 8:10: R...
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16 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let X=[6 1 8 10 5 7 9 3 4 2] and Y=[9 8 7 3 6 1 5 10 4 2] be a pair of parent permutations. How many cycles results from applying the CX procedure?

Selectați răspunsul corect:

- A. 3
- B. 5 ✔
- C. 6
- D. 4
- E. 2

17 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

08:48 91%

Marcat 1,00 din 1,00

Întrebare cu flag

Let us consider the chromosome defined by the integer valued vector: {3, 10, 8, 15, 11, 5, 4, 9}, each allele belonging to {1,2,...,100}. The result of applying the random resetting operator (gene by gene) could be: 1. {3, 10, 8, 15, 11, 5, 40, 9} 2. {13, 10, 8, 15, 11, 5, 4, 19} 3. {3, 10, 8, 15, 11, 5, 4, 99} 4. {3, 10, 8, 15, 11, 5, 40,999} 5. {3, 10, 8, 15, 11, 15, 4, 9} 6. {0, 10, 8, 15, 11, 5, 40, 9} 7. {3, 10, 8, 15, 1.1, 5, 40, 9} 8. {3, 10, 8, 15, 11, 0, 40, 9}

Selectați răspunsul corect:

- A. 4, 5, 6, 7
- B. 2, 4, 5, 6
- C. 1, 4, 5, 6
- D. 1, 2, 3, 6
- E. 1, 2, 3, 5 ✔

9 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

08:49 90%

13 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

We consider the following individuals {6, 3, 11, 7, 14, 8, 5, 15, 1, 2, 4, 13, 9, 10, 12} and {7, 1, 15, 13, 2, 14, 6, 10, 12, 11, 4, 8, 3, 9, 5}. The results of applying the PMX crossover procedure with the recombination points 4 and 8 are:

a. 5 3 15 13 2 14 6 10 12 8 4 7 9 11 1;

b. 13 1 11 7 14 8 5 15 12 10 4 2 3 9 6;

c. 13 12 11 7 14 8 5 15 1 10 4 2 3 9 6;

d. 5 3 11 13 2 14 6 15 1 8 4 7 9 10 12;

e. 5 3 15 13 2 14 6 10 1 8 4 7 9 11 12;

f. 13 12 11 7 14 8 5 15 1 10 4 2 3 9 6;

g. 13 1 15 7 14 8 5 10 12 11 4 2 3 9 6;

h. 13 1 10 7 14 8 5 15 12 11 4 2 3 9 6;

08:51 90%

28 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

The k-individual tournament selection: a. chooses the best k individuals from the input multiset; b. randomly selects k chromosomes from the input multiset; c. chooses the best candidate solution from k randomly selected individuals in the input multiset; d. randomly selects a chromosome; e. uses a selection pressure proportional to k.

Selectați răspunsul corect:

- A. b and e
- B. c and e ✔
- C. a and e
- D. d and e
- E. a and b

29 întrebare

Incorect

Marcat 0,00 din 1,00

E. Current population

23 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

In EAs, the variation operators are

Selectați răspunsul corect:

- A. none of the other answers
- B. parent selection mechanisms
- C. the mutation and the recombination ✔
- D. used to generate the initial population
- E. survivor selection mechanisms

24 întrebare

Incorect

Marcat 0,00 din 1,00

27 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

In EAs, the role of the fitness function is

Selectați răspunsul corect:

- A. to end the search process
- B. none of the other answers ✖
- C. to select a pair of individuals for crossover
- D. to select an individual for mutation
- E. to represent the environment requirements to adapt to

28 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

08:50 90%
Final test 8:10: R...
online.ase.ro

Let X=[3, 8, 1, 6, 9, 5, 2, 10, 4, 7] and Y=[6, 7, 5, 10, 4, 2, 9, 3, 1, 8] be a pair of parent permutations. Which one of the following couple of permutations results in case of applying the CX procedure ?

Selectați răspunsul corect:

- A. C1 = [3, 7, 1, 6, 9, 5, 2, 10, 4, 8], C2 = [6, 8, 5, 10, 4, 2, 9, 3, 1, 7]
- B. C1 = [4, 7, 1, 6, 9, 5, 2, 10, 3, 8], C2 = [1, 6, 5, 10, 4, 2, 9, 3, 7, 8]
- C. C1=X, C2=Y
- D. C1 = [8, 7, 4, 6, 9, 5, 2, 10, 3, 1], C2 = [1, 6, 5, 10, 4, 2, 9, 3, 7, 8]
- E. C1=[6, 8, 7, 10, 5, 1, 9, 3, 4, 2], C2=[9, 1, 8, 3, 6, 7, 5, 10, 4, 2]

08:48 90%

10 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let X=[3, 8, 1, 6, 9, 5, 2, 10, 4, 7] and Y=[6, 7, 5, 10, 4, 2, 9, 3, 1, 8] be a pair of parent permutations. Which one of the following couple of permutations results in case of applying the OCX procedure, if the crossover points are (4,8) ?

Selectați răspunsul corect:

- A. C1=[8 7 10 5 1 9 3 4 2 6], C2=[2 9 1 8 3 6 7 5 10 4]
- B. C1=[6 7 8 10 5 1 9 3 4 2], C2=[9 8 1 3 6 7 5 10 4 2]
- C. C1=[6 8 7 10 5 1 9 3 4 2], C2=[9 1 8 3 6 7 5 10 4 2]
- D. C1=[2 6 7 8 10 5 1 9 3 4], C2=[2 8 1 3 6 7 5 10 4 9]
- E. C1 = [8 7 4 6 9 5 2 10 3 1], C2 = [1 6 5 10 4 2 9 3 7 8] ✔

08:50 90%

19 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

Using different mutation steps on each axis (uncorrelated mutation with multiple parameters): a. aims to separately test each axis; b. involves different advance on each axis; c. leads to addition of supplemental components in candidate vectors (one for each parameter); d. is generally implemented by setting minimum thresholds for each dimension to avoid ineffective mutation.

Selectați răspunsul corect:

- a. All statements are correct
- b. a, b, c ✗
- c. a
- d. a, c
- e. b

20 întrebare

Corect

08:50 90%

26 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Consider f:D->[0,1], where D is a set with 10 elements, as the objective function in a maximization problem. The simplest way to compute the global maximum of f is:

Selectați răspunsul corect:

- a. there is no way to know the simplest method
- b. compute the value of f for each element in D and select the highest one ✔
- c. use divide et impera method
- d. use a genetic algorithm
- e. use hill climbing method

27 întrebare

Incorect

Marcat 0,00 din 1,00

08:48 90%

Let X=[3, 8, 1, 6, 9, 5, 2, 10, 4, 7] and Y=[6, 7, 5, 10, 4, 2, 9, 3, 1, 8] be a pair of parent permutations. Which one of the following couple of permutations results in case of applying the OCX procedure, if the crossover points are (4,8) ?

Selectați răspunsul corect:

- A. C1=[8 7 10 5 1 9 3 4 2 6], C2=[2 9 1 8 3 6 7 5 10 4]
- B. C1=[6 7 8 10 5 1 9 3 4 2], C2=[9 8 1 3 6 7 5 10 4 2]
- C. C1=[6 8 7 10 5 1 9 3 4 2], C2=[9 1 8 3 6 7 5 10 4 2]
- D. C1=[2 6 7 8 10 5 1 9 3 4], C2=[2 8 1 3 6 7 5 10 4 9]
- E. C1 = [8 7 4 6 9 5 2 10 3 1], C2 = [1 6 5 10 4 2 9 3 7 8] ✔

11 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

08:51 90%

Marcat 0,00 din 1,00

Întrebare cu flag

Generally, an ES (evolutionary strategies) population based algorithm: a. launches a stochastic search in the solution space; b. uses mutation as main generator of new individuals; c. uses elitist selection to generate the parent population; d. computes all optimal solutions of a problem; e. uses a global crossover operator.

Selectați răspunsul corect:

- a. a, c, e ✗
- b. a, b, c
- c. a, b, e
- d. b, c, d
- e. e

30 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

The binary representation in GAs

9 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let X = [2, 4, 9, 6, 5, 7, 8, 1, 3, 10], Y = [8, 2, 6, 4, 1, 5, 7, 10, 3, 9] be a pair of parent permutations. Which one of the following couple of permutations results in case of applying the PMX procedure, if the crossover positions are (2,6)?

Selectați răspunsul corect:

A. C1 = [8, 4, 9, 6, 5, 7, 1, 10, 3, 2], C2 = [9, 2, 6, 4, 1, 5, 8, 7, 3, 10]

B. C1 = [8, 4, 9, 6, 5, 7, 10, 1, 3, 2], C2 = [9, 2, 6, 4, 1, 5, 8, 7, 10, 3]

08:50 90%

17 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Consider v=[0,1,1,1,1,1], an individual from the space of binary vectors. Choose the correct statements from the following: a. a mutation in one gene of v may produce a vector with all elements 1; b. a mutation in one gene of v may produce a vector with all elements 0; c. a mutation in one gene of v may produce a vector 4 elements 1; d. a mutation in one gene of v may produce a vector 4 elements 0; e. none of the other statements.

Selectați răspunsul corect:

- a. b, c, d
- b. a, c ✔
- c. a, b, d
- d. e
- e. a, b, c, d

08:50 90%

18 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

A GA is a search method

Selectați răspunsul corect:

- A. of binary type
- B. that is based on only one individual at each iteration
- C. of backtracking type
- D. that processes populations ✔
- E. none of the other answers

19 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

Using different mutation steps on each axis (uncorrelated mutation with multiple parameters): a. aims to separately test eac

In EAs, the crossover is

Selectați răspunsul corect:

- A. without arity
- B. with arity larger than 9
- C. an unary operator
- D. none of the other answers
- E. a binary operator ✔

13 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

We consider the following individuals {6, 3, 11, 7, 14, 8, 5, 15, 1, 2, 4, 13, 9, 10, 12} and {7, 1, 15, 13, 2, 14, 6, 10, 12, 11, 4, 8, 3, 9, 5}. The results of applying the PMX crossover procedure with the recombination points 4 and 8 are:

a. 5 3 15 13 2 14 6 10 12

23 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

In EAs, the variation operators are

Selectați răspunsul corect:

- A. none of the other answers
- B. parent selection mechanisms
- C. the mutation and the recombination ✔
- D. used to generate the initial population
- E. survivor selection mechanisms

24 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

08:50 90%

e. b

20 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

In EAs, the selection benefits

Selectați răspunsul corect:

- A. each individual
- B. the fittest individuals ✔
- C. none of the other answers
- D. the most unfit individuals
- E. the end of the search process

21 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

Usually, a genetic algorithm: a. starts a stochastic search in the solution space; b.

08:49 90%

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let f:[0,1] -> R, f(x)=1.000.000+x*x be a fitness function (to be maximized). A suitable method used to calculate a global maximum point of the function f: a. never uses parent selection mechanisms; b. can use the tournament selection or FPS; c. can use the tournament selection or sigma-scaling FPS; d. is always deterministic; e. is always stochastic.

Selectați răspunsul corect:

- A. c ✔
- B. a
- C. c, d
- D. c, e
- E. b, c

16 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

24 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

Self-adaptation mechanism implemented by algorithms from ES (evolutionary strategies) class: a. is related to the population size; b. is related to the size of mutation steps; c. aims to direct the search towards area(s) with global optimum point(s); d. refines the search in solution space to get a very good approximation of an optimum point; e. refines the search in solution space to find as many as possible optimum points.

Selectați răspunsul corect:

- a. a, c
- b. a, e
- c. a, d, e
- d. a, c, d ✗
- e. b, c, d

25 întrebare

08:49 90%

14 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

In EAs, the role of populations is

Selectați răspunsul corect:

- A. to define the chromosome representation
- B. none of the other answers
- C. to evaluate the fitness values
- D. to define the phenotype representation
- E. to hold possible solutions ✔

15 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let f:[0,1] -> R, f(x)=1.000.000+x*x be a

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

Usually, a genetic algorithm: a. starts a stochastic search in the solution space; b. uses only one variation operator; c. uses tournament selection with FPS probability distribution; d. Computes all optimal solutions of a problems; e. uses two DNA strains.

Selectați răspunsul corect:

- a. e
- b. a, c, d ✖
- c. a, b, c
- d. a
- e. b, c, d

22 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

08:48 91%

In ESs, chromosomes representation: 1. Can be any of the following: binary strings, integer strings, real-valued vectors, permutations; 2. Can be integer strings or real-valued vectors; 3. Uses only real-valued vectors; 4. Does not influences the recombination operator; 5. Is determined by the particular problem to be solved; 6. Influences the crossover operator; 7. Influences the survivors selection mechanism.

Selectați răspunsul corect:

- A. 1, 7
- B. 3, 4 ✔
- C. 1, 3, 4
- D. 2, 4, 5, 6
- E. 2, 4, 5

8 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

08:49 90%

Întrebare cu flag

We consider the following individuals {6, 3, 11, 7, 14, 8, 5, 15, 1, 2, 4, 13, 9, 10, 12} and {7, 1, 15, 13, 2, 14, 6, 10, 12, 11, 4, 8, 3, 9, 5}. The results of applying the PMX crossover procedure with the recombination points 4 and 8 are:

a. 5 3 15 13 2 14 6 10 12 8 4 7 9 11 1;

b. 13 1 11 7 14 8 5 15 12 10 4 2 3 9 6;

c. 13 12 11 7 14 8 5 15 1 10 4 2 3 9 6;

d. 5 3 11 13 2 14 6 15 1 8 4 7 9 10 12;

e. 5 3 15 13 2 14 6 10 1 8 4 7 9 11 12;

f. 13 12 11 7 14 8 5 15 1 10 4 2 3 9 6;

g. 13 1 15 7 14 8 5 10 12 11 4 2 3 9 6;

h. 13 1 10 7 14 8 5 15 12 11 4 2 3 9 6;

i. 5 13 11 3 2 14 6 10 1 8 4 7 9 15 12.

Selectați răspunsul corect:

2 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

The initial population in memetic algorithms

Selectați răspunsul corect:

- A. Is such that all the individuals are the same
- B. Only consists in real-valued vectors
- C. Only consists in permutations
- D. Can use already known good solutions ✔
- E. Only consists in binary strings

3 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

11 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

Consider v=[0,1,1,0,0,1,0] an individual from the space of binary vectors. The associated fitness function computes the sum of bits that constitute the vector representation. Choose the correct statements from the following: a. v has 7 neighbors at Hamming distance 1. b. there is at least one neighbor (binary vector at distance 1 from v) with a higher fitness value than v; c. there is at least one neighbor (binary vector at distance 1 from v) with a lower fitness value than v; d. there is no neighbor (binary vector at distance 1 from v) with the same fitness value as v; e. there is at least one neighbor (binary vector at distance 1 from v) with the same fitness value as v.

Selectați răspunsul corect:

- a. a, b, c
- b. b, c, d ✗
- c. a, b, d

08:48 91%

3 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

In EAs, the genotypes are

Selectați răspunsul corect:

- A. not used
- B. none of the other answers
- C. the fittest individuals
- D. the phenotype representation in an evolutionary context ✔
- E. the most unfit individuals

4 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

In GAs, the termination condition 1. Could miss 2. Includes the control of the number

08:48 91%

Întrebare cu flag

Let X=[9, 4, 2, 1, 7, 5, 3, 10, 8, 6] and Y=[4, 2, 5, 1, 7, 9, 3, 10, 8, 6] be a pair of parent permutations. Which one of the following couple of permutations results in case of applying the CX procedure?

Selectați răspunsul corect:

- A. C1=X, C2=Y ✔
- B. C1=[8 7 10 5 1 9 3 4 2 6], C2=[2 9 1 8 3 6 7 5 10 4]
- C. C1=[6 8 7 10 5 1 9 3 4 2], C2=[9 1 8 3 6 7 5 10 4 2]
- D. C1=[6 7 8 10 5 1 9 3 4 2], C2=[9 8 1 3 6 7 5 10 4 2]
- E. C1=[2 6 7 8 10 5 1 9 3 4], C2=[2 8 1 3 6 7 5 10 4 9]

6 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

Let X = [9, 6, 4, 5, 3, 1, 2, 7, 10, 8], Y = [10, 3, 7, 6, 9, 2, 5, 4, 1, 8] be a pair of parent permutations. Which one of the following couple of permutations results in case of applying the CX procedure?

Selectați răspunsul corect:

- A. C1=[6 7 8 10 5 1 9 3 4 2], C2=[9 8 1 3 6 7 5 10 4 2]
- B. C1=[8 7 10 5 1 9 3 4 2 6], C2=[2 9 1 8 3 6 7 5 10 4]
- C. C1=[6 8 7 10 5 1 9 3 4 2], C2=[9 1 8 3 6 7 5 10 4 2]
- D. C1=X, C2=Y
- E. C1 = [9 6 7 5 3 1 2 4 10 8], C2 = [10 3 4 6 9 2 5 7 1 8] ✔

08:48 91%

4 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

In GAs, the termination condition 1. Could miss 2. Includes the control of the number of simulated generations 3. Always uses random factors 4. May include the population variability control 5. Improves the average quality of the current population 6. Guarantees a better population in case it uses age factor 7. Does not depend on the chromosome encoding 8. Depends on the chromosome representation

Selectați răspunsul corect:

- A. 2, 3, 4, 5
- B. 1, 4, 7, 8
- C. 1, 5, 8
- D. 3, 5, 6
- E. 2, 4, 7 ✔

5 întrebare

Corect

Marcat 1,00 din 1,00

În cadrul unui algoritm din clasa strategiilor evolutive, reprezentarea cromozomilor: 1. Poate fi oricare dintre: șiruri binare, șiruri de numere întregi, șiruri de numere reale, permutări; 2. Poate fi numai de tip șiruri de numere întregi sau reale; 3. Poate fi numai de tip șiruri de numere reale; 4. Nu influențează tipul de recombinare folosit (discretă / intermediară); 5. Se alege în funcție de problema care se rezolvă; 6. Influențează tipul de recombinare folosit; 7. Are influență asupra mecanismului de selecție a generației următoare; 8. Conține atît descrierea individului candidat cît și parametrii care controlează evoluția sa, 9. Este influențată de tipul de mutație.

Selectați răspunsul corect:

- a. 3, 4, 8
- b. 3, 4, 8, 9
- c. 2, 4, 5, 8
- d. 2, 4, 5, 6

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e. a, c, d

2 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let f:D={-2,-1,0,1,2,3} -> [0,5] be a function to be maximized. The simplest (less complex) method to compute a global maximum point involves:

Selectați răspunsul corect:

- A. the use of "Divide et Impera" method
- B. the use of hill climbing technique
- C. none of the other answers
- D. the use of backtracking technique
- E. the evaluation of each element in D and the selection of the best one ✔

3 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

The mating po[redacted]s used to

E. the genotype representation

8 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let X=[6 1 8 10 5 7 9 3 4 2] and Y=[9 8 7 3 6 1 5 10 4 2] be a pair of parent permutations. Which one of the following couple of permutations results in case of applying the CX procedure?

Selectați răspunsul corect:

- A. C1=[2 6 7 8 10 5 1 9 3 4], C2=[2 8 1 3 6 7 5 10 4 9]
- B. C1=Y, C2=X
- C. C1=[6 7 8 10 5 1 9 3 4 2], C2=[9 8 1 3 6 7 5 10 4 2]
- D. C1=[6 8 7 10 5 1 9 3 4 2], C2=[9 1 8 3 6 7 5 10 4 2] ✔
- E. C1=[8 7 10 5 1 9 3 4 2 6], C2=[2 9 1 8 3 6 7 5 10 4]

9 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

4 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let X = [4, 5, 3, 8, 6, 10, 9, 7, 1, 2], Y = [8, 9, 7, 3, 1, 2, 6, 10, 5, 4] be a pair of parent permutations. The children resulted by applying the PMX procedure are C1 = [8, 9, 7, 3, 6, 10, 1, 2, 5, 4], C2 = [4, 5, 3, 8, 1, 2, 9, 7, 6, 10]. Which of the following pairs of positions produced C1 and C2?

Selectați răspunsul corect:

- A. (5,6) ✔
- B. (4, 6)
- C. (5, 7)
- D. (2, 6)
- E. (1, 4)

D. d and e

E. c and e

6 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

In EAs, the main aim of the fitness function is

Selectați răspunsul corect:

A. to form the basis for crossover

B. to end the search process ✖

C. to form the basis for selection

D. to form the basis for mutation

E. none of the other answers

7 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

In GAs, the crossover operator depends on

Selectați răspunsul corect:

A. the end of the search process

C. 3, 4, 7, 9 ✗

D. 1, 3, 5, 7

E. 2, 3, 5, 9

19 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

In EAs, the mutation operates

Selectați răspunsul corect:

A. none of the other answers

B. only on the fittest individuals

C. after the crossover procedure ✓

D. only on the most unfit individuals

E. after the search is over

20 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

D. to form the basis for mutation

E. none of the other answers

7 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

In GAs, the crossover operator depends on

Selectați răspunsul corect:

A. the end of the search process

B. the population size

C. none of the other answers

D. the phenotype representation

E. the genotype representation ✔

8 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let X=[6 1 8 10 5 7 9 3 4 2] and Y=[9 8 7 3 6 1 5 10 4 2] be a pair of parent permutations. Which one of the following couple of permutations resul in case of applying the CX procedure?

D. the use of backtracking technique

E. the evaluation of each element in D and the selection of the best one ✓

3 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

The mating pool selection in GAs: 1. Is used to solve only constrained problems 2. Is applied once, after the initial population generation 3. Is applied immediately an evaluated current population is available 4. Is always based on a selection probability distribution 5. Is applied on mutated offspring multiset 6. Can be implemented based on a selection probability distribution 7. Is an iterative process 8. Is applied on current population 9. Is applied once 10. Generally uses the age factor to select individuals 11. Is applied immediately before each mutation procedure 12. Is applied on offspring multiset

Selectați răspunsul corect:

A. 2, 5, 8, 12

B. 1, 2, 4, 5

C. 4, 6, 7, 8 ✗

D. 3, 6, 7, 8

E. 3, 6, 8, 12

E. (1, 4)

5 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let P be a dim-size population. The quality of P is given by: a. the number of distinct individuals, regardless of the representation length; b. the number of distinct individuals, regardless of their qualities; c. the number of distinct fitness values in P; d. the parity of dim; e. the uniqueness of P.

Selectați răspunsul corect:

- A. c ✔
- B. a and c
- C. a and e
- D. d and e
- E. c and e

6 întrebare

Incorect

10 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

Tournament selection with 3 participants has the following consequences: a. selects one parent / member of next generation; b. randomly selects 3 individuals from the set it is applied on; c. selects the best individual from the 3 individuals randomly considered from the multiset it is applied on; d. randomly selects an individual; e. creates a selection pressure proportional to 3.

Selectați răspunsul corect:

- a. c, e ✖
- b. a, c, e
- c. none of the other answers
- d. b, c
- e. d, e

11 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

e. d, e

11 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

Consider f:[0,1]-> R, $f(x)=(1.000.000 + x)^2$ as the objective function in a maximization problem. A method that can compute the global maximum of f: a. involves evaluation of all elements in a population; b. must use an algorithm from the class of evolutionary strategies; c. generally uses hill climbing method; d. may use a classical evolutionary algorithm, based on populations, with real number representation; e. any of mentioned methods is suitable.

Selectați răspunsul corect:

- a. d
- b. d, e
- c. a, b, e
- d. e ✗
- e. a, d

12 întrebare

E. 2,5,6

22 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

In EAs, the crossover is

Selectați răspunsul corect:

- A. a binary operator ✔
- B. an unary operator
- C. none of the other answers
- D. with arity larger than 9
- E. without arity

23 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let f:[0,1] -> R, f(x)=1.000.000+x*x be a fitness function (to be maximized). A suitable method used to calcula[redacted]point of the

16 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let X = [9, 6, 4, 5, 3, 1, 2, 7, 10, 8], Y = [10, 3, 7, 6, 9, 2, 5, 4, 1, 8] be a pair of parent permutations. Which one of the following couple of permutations results in case of applying the CX procedure?

Selectați răspunsul corect:

- A. C1=[8 7 10 5 1 9 3 4 2 6], C2=[2 9 1 8 3 6 7 5 10 4]
- B. C1=[6 8 7 10 5 1 9 3 4 2], C2=[9 1 8 3 6 7 5 10 4 2]
- C. C1=[6 7 8 10 5 1 9 3 4 2], C2=[9 8 1 3 6 7 5 10 4 2]
- D. C1 = [9 6 7 5 3 1 2 4 10 8], C2 = [10 3 4 6 9 2 5 7 1 8] ✔
- E. C1=X, C2=Y

20 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let f:[0,1] -> R, f(x)=1.000.000+x*x be a fitness function (to be maximized). A suitable method used to calculate a global maximum point of the function f: a. involves the evaluation of each element in [0,1] and the selection of the best one; b. uses only ES-based methods; c. usually uses the hill climbing technique; d. can use a GA with real-valued vector representation; e. uses a GA with permutation representation.

Selectați răspunsul corect:

- A. d ✔
- B. e
- C. a and b
- D. b, c and e
- E. b and d

21 întrebare

Corect

Marcat 1,00 din 1,00

C. 1,5

D. 1

E. 2 ✔

28 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let X=[9, 4, 2, 1, 7, 5, 3, 10, 8, 6] and Y=[4, 2, 5, 1, 7, 9, 3, 10, 8, 6] be a pair of parent permutations. How many cycles results from applying the CX procedure?

Selectați răspunsul corect:

A. 5

B. 7 ✔

C. 4

D. 3

E. 6

29 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

D. b and e

E. b, d and e

15 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

In ESs, chromosomes representation: 1. Can be any of the following: binary strings, integer strings, real-valued vectors, permutations; 2. Can be integer strings or real-valued vectors; 3. Uses only real-valued vectors; 4. Does not influences the recombination operator; 5. Is determined by the particular problem to be solved; 6. Influences the crossover operator; 7. Influences the survivors selection mechanism.

Selectați răspunsul corect:

A. 2, 4, 5

B. 2, 4, 5, 6

C. 1, 7 ✗

D. 1, 3, 4

E. 3, 4

16 întrebare

Corect

e. a, d

12 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

In GAs, the initial population is

Selectați răspunsul corect:

- A. an output data
- B. none of the other answers
- C. randomly generated at the beginning of the search ✔
- D. computed at each iteration
- E. an input parameter

13 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let X=[3, 8, 1, 6, 9, 5, 2, 10, 4, 7] and Y=[6, 7, 5, 10, 4, 2, 9, 3, 1, 8] be a pair of parent permutations. Which one of the following couple of permutation results in case [redacted] procedure ?

d. b, g

e. c, d

27 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let X=[6 1 8 10 5 7 9 3 4 2] be a permutation. If we apply the inversion mutation for (2,7), we can obtain Y: 1. Y=[2 6 7 8 10 5 1 9 3 4] ; 2. Y=[6 9 7 5 10 8 1 3 4 2] ; 3. Y=[7 6 8 10 5 1 9 3 4 2] ; 4. Y=[6 7 10 8 5 9 1 3 4 2] ;5. Y=[6 8 7 5 10 1 9 3 4 2] ; 6. Y=[6 2 8 10 5 1 9 3 4 7]

Selectați răspunsul corect:

A. 5

B. 2, 5

C. 1,5

D. 1

E. 2 ✔

28 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

C. b, c

D. c, e

E. c, d

24 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

In EAs, the variation operators are

Selectați răspunsul corect:

A. parent selection mechanisms

B. survivor selection mechanisms

C. used to generate the initial population ✗

D. none of the other answers

E. the mutation and the recombination

25 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Consider f:D->[0,1], where D is a set with 10 elements, as the objective function in a

08:03 LTE 57
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parcurgere test	
Puncte	20,00/30,00
Notă obținută	**26,67** din 40,00 (**66,67**%)

1 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

Self-adaptation mechanism implemented by algorithms from ES (evolutionary strategies) class: a. is related to the population size; b. is related to the size of mutation steps; c. aims to direct the search towards area(s) with global optimum point(s); d. refines the search in solution space to get a very good approximation of an optimum point; e. refines the search in solution space to find as many as possible optimum points.

Selectați răspunsul corect:

- a. a, e ✗
- b. a, c
- c. a, d, e
- d. b, c, d
- e. a, c, d

2 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

14 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let x be a binary vector of size 10. A neighbor of x is a binary vector y such that the Hamming distance between x and y is 1. The set of neighbors of x: a. contains 10 elements; b. has 2*10 elements; c. contains vectors better than x in terms of fitness; d. has an even number of individuals; e. is with unique keys (distinct vectors).

Selectați răspunsul corect:

- A. a, c and e
- B. a, d and e ✔
- C. b
- D. b and e
- E. b, d and e

15 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

17 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

Let x be a binary vector of size 10 satisfying an admissibility criterion denoted by A. A neighbor of x is a feasible binary vector y such that the Hamming distance between x and y is 1. The set of neighbors of x: a. contains 10 elements; b. contains at most 10 elements; c. contains 10 vectors better than x in terms of fitness; d. has 2*k individuals; e. is with unique keys (distinct vectors).

Selectați răspunsul corect:

- A. b and e
- B. a and e ✖
- C. a and d
- D. d and e
- E. c and e

18 întrebare

Incorect

13 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let X=[3, 8, 1, 6, 9, 5, 2, 10, 4, 7] and Y=[6, 7, 5, 10, 4, 2, 9, 3, 1, 8] be a pair of parent permutations. Which one of the following couple of permutations results in case of applying the CX procedure ?

Selectați răspunsul corect:

- A. C1=[6, 8, 7, 10, 5, 1, 9, 3, 4, 2], C2=[9, 1, 8, 3, 6, 7, 5, 10, 4, 2]
- B. C1 = [4, 7, 1, 6, 9, 5, 2, 10, 3, 8], C2 = [1, 6, 5, 10, 4, 2, 9, 3, 7, 8]
- C. C1 = [8, 7, 4, 6, 9, 5, 2, 10, 3, 1], C2 = [1, 6, 5, 10, 4, 2, 9, 3, 7, 8]
- D. C1=X, C2=Y
- E. C1 = [3, 7, 1, 6, 9, 5, 2, 10, 4, 8], C2 = [6, 8, 5, 10, 4, 2, 9, 3, 1, 7] ✔

14 întrebare

Corect

E. b and d

21 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let X=[6 1 8 10 5 7 9 3 4 2] be a permutation. If we apply the scramble mutation operator for (2,7), we can obtain Y: 1. Y=[2 6 7 8 10 5 1 9 3 4] ; 2. Y=[6 7 8 10 5 1 9 3 4 2] ; 3. Y=[7 6 8 10 5 1 9 3 4 2] ; 4. Y=[6 7 10 8 5 9 1 3 4 2] ;5. Y=[6 9 7 5 10 8 1 3 4 2] ; 6. Y=[6 2 8 10 5 1 9 3 4 7]

Selectați răspunsul corect:

- A. 2, 4, 5 ✔
- B. 1,2,5
- C. 3, 4, 5
- D. 1, 2, 3
- E. 2,5,6

22 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

E. without arity

23 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let f:[0,1] -> R, f(x)=1.000.000+x*x be a fitness function (to be maximized). A suitable method used to calculate a global maximum point of the function f: a. never uses parent selection mechanisms; b. can use the tournament selection or FPS; c. can use the tournament selection or sigma-scaling FPS; d. is always deterministic; e. is always stochastic.

Selectați răspunsul corect:

- A. a
- B. c ✔
- C. b, c
- D. c, e
- E. c, d

24 întrebare

Incorect

Marcat 0,00 din 1,00

E. 6

29 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let us consider the following chromosome: {7, 6, 12, 14, 3, 10, 8, 15, 11, 5, 4, 1, 13, 2, 9}. If the result of scramble mutation is: {7, 14, 13, 12, 1, 15, 2, 8, 6, 3, 11, 5, 10, 4, 9 } then the following genes could have been used: 1. 1 and 14; 2. 4 and 15; 3. 3 and 15; 4. 4 and 8; 5. 5 and 15; 6. 1 and 12; 7. 2 and 14; 8. 2 and 13; 9. 1 and 15; 10. 1 and 13; 11. 3 and 13

Selectați răspunsul corect:

- A. 1, 7, 9 ✔
- B. 6
- C. 2
- D. 5, 10
- E. 1, 5, 7, 9

30 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

D. none of the other answers

E. the mutation and the recombination

25 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Consider f:D->[0,1], where D is a set with 10 elements, as the objective function in a maximization problem. The simplest way to compute the global maximum of f is:

Selectați răspunsul corect:

a. use a genetic algorithm

b. there is no way to know the simplest method

c. use hill climbing method

d. compute the value of f for each element in D and select the highest one ✔

e. use divide et impera method

26 întrebare

Incorect

D. 5, 10

E. 1, 5, 7, 9

30 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

The binary representation in GAs

Selectați răspunsul corect:

A. Is the most commonly used representation variant

B. Always leads to optimal algorithms

C. Is not used

D. Does not depend on the problem to solve

E. Is the first encoding used to solve problems in terms of evolutionary computing ✔

Finalizați evaluarea

E. c and e

18 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

In any GA that maximizes a specific fitness function: 1. The survivor selection is exclusively based on age factor: 2. Only constrained problems are addressed; 3. The parent selection is an iterative process; 4. The mutation operator is applied with small probability; 5. The FPS selection is not recommended; 6. The offspring do not contain duplicates; 7. The survivor selection is based on fitness values and/or the age factor; 8. The recombination is seldom used; 9. The problem is to compute a local optimum; 10. The genotype inner structure varies when the translation variants are considered.

Selectați răspunsul corect:

A. 3, 4, 7

B. 1, 2, 3, 4, 7

C. 3, 4, 7, 9 ✗

D. 1, 3, 5, 7

E. 2, 3, 5, 9

26 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

Consider S the space of binary vectors with k elements, and f:S->N the objective function in a maximization problem (N is the set of natural numbers). The global maximum of f could be computed by: a. computing the fitness of every elements in S and selecting the best one, for low values of k; b. using an ES (evolutionary strategy) algorithm, for high values of k; c. applying an ES algorithm, for low values of k; d. applying hill climbing method, for low values of k; e. applying hill climbing method, for high values of k; f. using a classical genetic algorithm, based on populations, for high values of k; g. using a classical genetic algorithm, based on populations, for low values of k.

Selectați răspunsul corect:

- a. b, e
- b. a, f
- c. b, f ✖
- d. b, g
- e. c, d

27 întrebare

9 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let us consider the chromosome defined by the integer valued vector: {3, 10, 8, 15, 11, 5, 4, 9}, each allele belonging to {1,2,...,100}. The result of applying the random resetting operator (gene by gene) could be: 1. {3, 10, 8, 15, 11, 5, 40, 9} 2. {13, 10, 8, 15, 11, 5, 4, 19} 3. {3, 10, 8, 15, 11, 5, 4, 99} 4. {3, 10, 8, 15, 11, 5, 40,999} 5. {3, 10, 8, 15, 11, 15, 4, 9} 6. {0, 10, 8, 15, 11, 5, 40, 9} 7. {3, 10, 8, 15, 1.1, 5, 40, 9} 8. {3, 10, 8, 15, 11, 0, 40, 9}

Selectați răspunsul corect:

- A. 1, 2, 3, 6
- B. 2, 4, 5, 6
- C. 1, 2, 3, 5 ✔
- D. 4, 5, 6, 7
- E. 1, 4, 5, 6

10 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag [redacted]

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135

D. the size

E. the chromosome representation

21 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

In EAs, the mutation is

Selectați răspunsul corect:

A. with arity larger than 9

B. none of the other answers

C. an unary operator ✔

D. a binary operator

E. without arity

22 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

08:54 81%

Marcat 1,00 din 1,00

Întrebare cu flag

Tournament selection with 3 participants has the following consequences: a. selects one parent / member of next generation; b. randomly selects 3 individuals from the set it is applied on; c. selects the best individual from the 3 individuals randomly considered from the multiset it is applied on; d. randomly selects an individual; e. creates a selection pressure proportional to 3.

Selectați răspunsul corect:

- a. a, c, e ✔
- b. c, e
- c. b, c
- d. d, e
- e. none of the other answers

28 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

08:54 81%
135

b. c, e

c. b, c

d. d, e

e. none of the other answers

28 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

A GA maximizes

Selectați răspunsul corect:

A. none of the other answers

B. Linear functions only

C. Exponential functions only

D. Quadratic functions only

E. Fitness functions ✔

29 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

08:53 82%
135

19 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

In GAs, the initial population is

Selectați răspunsul corect:

- A. computed at each iteration
- B. an output data
- C. none of the other answers
- D. randomly generated at the beginning of the search ✔
- E. an input parameter

20 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

In EAs, the main characteristic of populations is

Selectați răspunsul cor

- A. none of the other answers

08:53 82%
135

E. an input parameter

20 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

In EAs, the main characteristic of populations is

Selectați răspunsul corect:

- A. none of the other answers
- B. the diversity ✔
- C. the chromosome structure
- D. the size
- E. the chromosome representation

21 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

In EAs, the mutation is

08:52 82%

Marcat 1,00 din 1,00

Întrebare cu flag

Let X = [9, 6, 4, 5, 3, 1, 2, 7, 10, 8], Y = [10, 3, 7, 6, 9, 2, 5, 4, 1, 8] be a pair of parent permutations. How many cycles results in case of applying the CX procedure?

Selectați răspunsul corect:

- A. 5
- B. 1
- C. 3 ✔
- D. 4
- E. 2

12 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

08:53 82%

23 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let P be a dim-size population. The quality of P is given by: a. the number of distinct individuals, regardless of the representation length; b. the number of distinct individuals, regardless of their qualities; c. the number of distinct fitness values in P; d. the parity of dim; e. the uniqueness of P.

Selectați răspunsul corect:

- A. c and e
- B. a and c
- C. a and e
- D. c ✔
- E. d and e

24 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

08:55 • 81%
135

Let X = [2, 4, 9, 6, 5, 7, 8, 1, 3, 10], Y = [8, 2, 6, 4, 1, 5, 7, 10, 3, 9] be a pair of parent permutations. Which one of the following couple of permutations results in case of applying the PMX procedure, if the crossover positions are (2,6)?

Selectați răspunsul corect:

- A. C1=[6, 7, 8, 10, 5, 1, 9, 3, 4, 2], C2=[9, 8, 1, 3, 6, 7, 5, 10, 4, 2]
- B. C1 = [8, 4, 9, 6, 5, 7, 10, 1, 3, 2], C2 = [9, 2, 6, 4, 1, 5, 8, 7, 10, 3] ✖
- C. C1 = [8, 4, 9, 6, 5, 7, 1, 10, 3, 2], C2 = [9, 2, 6, 4, 1, 5, 8, 7, 3, 10]
- D. C1 = [8, 3, 4, 2, 7, 9, 10, 5, 1, 6], C2 = [1, 4, 5, 9, 8, 7, 2, 3, 6, 10]
- E. C1 = [3, 4, 9, 6, 10, 8, 2], C2 = [10, 2, 6, 4, 1, 5, 8, 7, 3, 9]

08:52 82%

Întrebare cu flag

Let X = [4, 5, 3, 8, 6, 10, 9, 7, 1, 2], Y = [8, 9, 7, 3, 1, 2, 6, 10, 5, 4] be a pair of parent permutations. The children resulted by applying the PMX procedure are C1 = [8, 9, 7, 3, 6, 10, 1, 2, 5, 4], C2 = [4, 5, 3, 8, 1, 2, 9, 7, 6, 10]. Which of the following pairs of positions produced C1 and C2?

Selectați răspunsul corect:

- A. (4, 6)
- B. (2, 6)
- C. (5, 7)
- D. (1, 4)
- E. (5,6) ✔

16 întrebare

Corect

Marcat 1.00 din 1.00

08:52 82%

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let f:[0,1] -> R, f(x)=1.000.000+x*x be a fitness function (to be maximized). A suitable method used to calculate a global maximum point of the function f: a. never uses parent selection mechanisms; b. can use the tournament selection or FPS; c. can use the tournament selection or sigma-scaling FPS; d. is always deterministic; e. is always stochastic.

Selectați răspunsul corect:

- A. b, c
- B. c, d
- C. c, e
- D. a
- E. c ✔

17 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

In EAs, the selection benefits

08:54 81%
135

C. Is such that all the individuals are the same

D. Can use already known good solutions ✔

E. Only consists in real-valued vectors

26 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

In ESs, the self-adaptation property is related to:

Selectați răspunsul corect:

A. Survivors selection

B. Fitness

C. Mating pool selection ✖

D. Probability distribution selection

E. The parameters space

27 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

08:54 82%
135

25 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

The initial population in memetic algorithms

Selectați răspunsul corect:

- A. Only consists in binary strings
- B. Only consists in permutations
- C. Is such that all the individuals are the same
- D. Can use already known good solutions ✔
- E. Only consists in real-valued vectors

26 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

In ESs, the self-adaptation property is related to:

Selectați răspunsul corect:

- A. Survivors selec
- B. Fitness

08:52 82%
135

E. c ✔

17 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

In EAs, the selection benefits

Selectați răspunsul corect:

- A. none of the other answers
- B. the end of the search process
- C. each individual
- D. the most unfit individuals
- E. the fittest individuals ✔

18 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let f:[0,1] -> R, f(x)=1.0( )+x*x be a fitness function (to be maximized). A suitable method use

08:52 82%

Întrebare cu flag

Let X = [9, 6, 4, 5, 3, 1, 2, 7, 10, 8], Y = [10, 3, 7, 6, 9, 2, 5, 4, 1, 8] be a pair of parent permutations. Which one of the following couple of permutations results in case of applying the CX procedure?

Selectați răspunsul corect:

A. C1 = [9 6 7 5 3 1 2 4 10 8], C2 = [10 3 4 6 9 2 5 7 1 8]

B. C1=[6 7 8 10 5 1 9 3 4 2], C2=[9 8 1 3 6 7 5 10 4 2]

C. C1=X, C2=Y

D. C1=[8 7 10 5 1 9 3 4 2 6], C2=[2 9 1 8 3 6 7 5 10 4]

E. C1=[6 8 7 10 5 1 9 3 4 2], C2=[9 1 8 3 6 7 5 10 4 2]

08:53 82%
135

22 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

In EAs, the crossover is

Selectați răspunsul corect:

- A. a binary operator ✔
- B. without arity
- C. with arity larger than 9
- D. an unary operator
- E. none of the other answers

23 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let P be a dim-size population. The quality of P is given by: a. the number of distinct individuals, regardless of the representation length; b. the

08:54 • 81%
135

Marcat 1,00 din 1,00

Întrebare cu flag

Tournament selection with 3 participants has the following consequences: a. selects one parent / member of next generation; b. randomly selects 3 individuals from the set it is applied on; c. selects the best individual from the 3 individuals randomly considered from the multiset it is applied on; d. randomly selects an individual; e. creates a selection pressure proportional to 3.

Selectați răspunsul corect:

- a. a, c, e ✔
- b. c, e
- c. b, c
- d. d, e
- e. none of the other answers

28 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

08:52 82%

10 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let X=[9, 4, 2, 1, 7, 5, 3, 10, 8, 6] and Y=[4, 2, 5, 1, 7, 9, 3, 10, 8, 6] be a pair of parent permutations. Which one of the following couple of permutations results in case of applying the CX procedure?

Selectați răspunsul corect:

- A. C1=[8 7 10 5 1 9 3 4 2 6], C2=[2 9 1 8 3 6 7 5 10 4]
- B. C1=[6 7 8 10 5 1 9 3 4 2], C2=[9 8 1 3 6 7 5 10 4 2]
- C. C1=[2 6 7 8 10 5 1 9 3 4], C2=[2 8 1 3 6 7 5 10 4 9]
- D. C1=[6 8 7 10 5 1 9 3 4 2], C2=[9 1 8 3 6 7 5 10 4 2]
- E. C1=X, C2=Y ✔

11 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

08:52 82%
135

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

In ESs, chromosomes representation: 1. Can be any of the following: binary strings, integer strings, real-valued vectors, permutations; 2. Can be integer strings or real-valued vectors; 3. Uses only real-valued vectors; 4. Does not influences the recombination operator; 5. Is determined by the particular problem to be solved; 6. Influences the crossover operator; 7. Influences the survivors selection mechanism.

Selectați răspunsul corect:

- A. 1, 3, 4
- B. 3, 4 ✔
- C. 2, 4, 5, 6
- D. 2, 4, 5
- E. 1, 7

10 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

08:50 83%

2 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

The Evolutionary Computing is

Selectați răspunsul corect:

- A. A concept that confutes the natural evolution theory
- B. A concept that proves the theory of relativity.
- C. Similar to sorting algorithms
- D. None of the other answers ✔
- E. Similar to the direct search methods

3 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

In GAs, the crossover operator depends on

Selectați răspunsul corect:

- A. none of the oth swers
- B. the population size

08:52 82%
online.ase.ro
135

In GAs, the binary representation 1. Is effective when the solution is a vector of logical values 2. Should be used by every algorithm 3. Should not be used 4. Cannot be used to solve optimization problems 5. Influences the class of variation operators used to develop the algorithm 6. Imposes the use of roulette wheel mechanism 7. Is effective only for solving constrained problems

Selectați răspunsul corect:

- A. 1, 5
- B. 1, 3, 5
- C. 2, 4, 6
- D. 2, 3, 6
- E. 1, 4, 5 ✖

9 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

08:54 • 81%

29 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

The fitness function: 1. Measures the quality of the evolutionary algorithms (EAs); 2. Measures the quality of each genotype; 3. Evaluates the complexity of EAs; 4. Should be maximized; 5. Established whether a child is feasible; 6. Selects the parents; 7. Selects the survivors; 8. Is of stochastic type; 9. Measures the quality of each current population; 10. Measures the quality of each current population versus its corresponding predecessor; 11. Depends on the particular problem to be solved

Selectați răspunsul corect:

- A. 2, 4, 10 ✖
- B. 1, 3
- C. 6, 7, 8
- D. 9, 10
- E. 2, 4, 11

30 întrebare

Incorect

Marcat 0,00 din 1,00

08:53 82%
135

18 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let f:[0,1] -> R, f(x)=1.000.000+x*x be a fitness function (to be maximized). A suitable method used to calculate a global maximum point of the function f: a. involves the evaluation of each element in [0,1] and the selection of the best one; b. uses only ES-based methods; c. usually uses the hill climbing technique; d. can use a GA with real-valued vector representation; e. uses a GA with permutation representation.

Selectați răspunsul corect:

- A. d ✔
- B. b and d
- C. a and b
- D. b, c and e
- E. e

19 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

08:50 83%

1 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

The binary representation in GAs

Selectați răspunsul corect:

- A. Is not allowed
- B. Does not use chromosomes having more than two identical alleles
- C. Does not involve mutation
- D. Does not involve recombination
- E. Uses specific variation operators ✔

2 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

The Evolutionary Computing is

Selectați răspunsul corect:

- A. A concept that confutes the natural evolution theory

08:51 82%

5 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Let X=[9, 4, 2, 1, 7, 5, 3, 10, 8, 6] and Y=[4, 2, 5, 1, 7, 9, 3, 10, 8, 6] be a pair of parent permutations. How many cycles results from applying the CX procedure?

Selectați răspunsul corect:

- A. 3
- B. 5
- C. 6
- D. 4
- E. 7 ✔

6 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

08:54 82%

Marcat 0,00 din 1,00

Întrebare cu flag

Consider v=[0,1,1,0,0,1,0] an individual from the space of binary vectors. The associated fitness function computes the sum of bits that constitute the vector representation. Choose the correct statements from the following: a. v has 7 neighbors at Hamming distance 1. b. there is at least one neighbor (binary vector at distance 1 from v) with a higher fitness value than v; c. there is at least one neighbor (binary vector at distance 1 from v) with a lower fitness value than v; d. there is no neighbor (binary vector at distance 1 from v) with the same fitness value as v; e. there is at least one neighbor (binary vector at distance 1 from v) with the same fitness value as v.

Selectați răspunsul corect:

- a. a, b, c
- b. a, b, d ✖
- c. b, c, d
- d. a, b, c, d
- e. e

25 întrebare

Corect

Marcat 1,00 din 1,00

08:51 • 83%

3 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

In GAs, the crossover operator depends on

Selectați răspunsul corect:

- A. none of the other answers
- B. the population size
- C. the genotype representation
- D. the end of the search process
- E. the phenotype representation ✖

4 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Consider S the space of binary vectors with k elements, and f:S->N the objective function in a maximization problem (N is the set of natural numbers). The global m um of f could be computed by: a. computing the fitness of every elements in S and selecting the best one, for low

08:52 82%

In GAs, the mutation: 1. Is used only in constrained problems 2. Is applied immediately a children population is available 3. Selects only a half of individuals to change them 4. Uses two distinct offspring multisets 5. Is always non-uniform 6. Is applied only once, after the initial population generation 7. The mutation probability is 1 8. Is applied once per algorithm 9. Uses the current population to compute new individuals 10. Is applied iteratively 11. Is the most commonly used variation operator 12.Is applied on pairs of chromosomes 13. Is of stochastic type

Selectați răspunsul corect:

- A. 10,11,13
- B. 2, 10, 13 ✔
- C. 6, 9, 10, 11
- D. 2, 10, 11
- E. 2, 8, 10

15 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

08:51 82%

Întrebare cu flag

The initial population of every EA: 1. Is generated before the evolution process (consisting in selection, variation and evaluation) 2. Is generated once 3. Is generated at the beginning of each loop of the evolution process (consisting in selection, variation and evaluation) 4. Is randomly generated 5. Is generated using the normal probability distribution 6. Is generated in a deterministic manner 7. Is a finite set of candidate solutions

Selectați răspunsul corect:

- A. 1, 4, 5
- B. 1, 2, 4, 5, 6
- C. 2, 5, 7
- D. 5, 7
- E. 1, 2, 4, 7 ✔

8 întrebare

Incorect

Marcat 0,00 din 1,00

Întrebare cu flag

In GAs, the binary repre ion 1. Is effective when the solution is a vector of logical values 2. Should

08:51 82%

Let v=[0,1,1,0,0,1,0] be a binary vector. The fitness function is defined on the 7-length binary vectors set and, for each chromosome, computes the sum of its components. Select the correct statement(s): a. v has seven neighbors (Hamming distance 1); b. there exists at least one neighbor (Hamming distance 1) having the fitness value above the quality of v; c. there exists at least one neighbor (Hamming distance 1) having the fitness value below the quality of v; d. there exists at least one neighbor (Hamming distance 1) with the same fitness value as the quality of v; e. none of the other answers.

Selectați răspunsul corect:

- A. a, d, c and e
- B. a, b and d
- C. a, c and d ✖
- D. a, b and c
- E. e

08:51 82%

4 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

Consider S the space of binary vectors with k elements, and f:S->N the objective function in a maximization problem (N is the set of natural numbers). The global maximum of f could be computed by: a. computing the fitness of every elements in S and selecting the best one, for low values of k; b. using an ES (evolutionary strategy) algorithm, for high values of k; c. applying an ES algorithm, for low values of k; d. applying hill climbing method, for low values of k; e. applying hill climbing method, for high values of k; f. using a classical genetic algorithm, based on populations, for high values of k; g. using a classical genetic algorithm, based on populations, for low values of k.

Selectați răspunsul corect:

- a. a, f ✔
- b. b, g
- c. c, d
- d. b, e
- e. b, f

5 întrebare

08:52 82%

12 întrebare

Corect

Marcat 1,00 din 1,00

Întrebare cu flag

The crossover procedure in GAs: 1. Is applied only once 2. Is applied immediately after each parents selection procedure 3. Is implemented without taking into account a specific probability 4. Is applied immediately before each mutation procedure 5. Is applied immediately before each parents selection procedure 6. Uses the mating pool 7. Is used to solve only unconstrained problems 8. Is applied with large probability 9. Is applied with small probability 10. Is an iterative procedure 11. Is applied once, after the first mating pool selection procedure 12. Is of deterministic type 13. Is usually stochastic

Selectați răspunsul corect:

- A. 2, 4, 6, 8, 10, 12
- B. 2, 4, 6, 8, 10
- C. 1, 3, 5, 7, 9, 13
- D. 2, 4, 6, 8, 10, 13 ✔
- E. 2, 4, 8, 10, 13

13 întrebare

Consider the 2-D Laplace equation $\nabla^2 \phi = 0$ in a domain $0 \le x \le 1$, $0 \le y \le 1$ with the boundary conditions $\phi(x,0) = 0$, $\phi(x,1) = 0$, $\phi(0,y) = 0$, $\phi(1,y) = 1$. Let ϕ_1 and ϕ_2 be two solutions satisfying the above boundary conditions. Which of the following statements is/are true?

Select one or more:
- $\phi_1 + \phi_2$ satisfies the boundary conditions
- $\phi_1 - \phi_2$ satisfies the boundary conditions
- $\phi_1 \phi_2$ satisfies the boundary conditions
- ϕ_1 / ϕ_2 satisfies the boundary conditions

Let $\{\phi_1, \phi_2, \phi_3, \phi_4\}$ be a set of orthonormal functions. Which of the following statements is/are true?

Select one or more:
- $\{\phi_1, \phi_2, \phi_3, \phi_4\}$ is a complete set
- $\{\phi_1, \phi_2, \phi_3, \phi_4\}$ is a linearly independent set
- $\{\phi_1, \phi_2, \phi_3, \phi_4\}$ is a linearly dependent set
- $\{\phi_1, \phi_2, \phi_3, \phi_4\}$ is a set of basis vectors

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In the Gauss Seidel method, the iterations are terminated when the maximum change in any variable between two successive iterations is less than 0.01. The number of equal decimals in the solution at the termination of Gauss Seidel is

Select one or more:
- 1
- 2
- 3
- 4

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The integral representation of Bessel's function of the first kind of order zero is given by

Select one or more:
- $J_0(x) = \frac{1}{\pi}\int_0^{\pi} \cos(x\sin\theta)\, d\theta$
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- $\phi_1 \phi_2$ satisfies the boundary conditions
- ϕ_1 / ϕ_2 satisfies the boundary conditions

In the Gauss Seidel method, the iterations are terminated when the maximum change in any variable between two successive iterations is less than 0.01. The number of equal decimals in the solution at the termination of Gauss Seidel is

Select one or more:
- 1
- 2
- 3
- 4

Consider the 2-D Laplace equation $\nabla^2 \phi = 0$ in a domain $0 \le x \le 1$, $0 \le y \le 1$ with the boundary conditions $\phi(x,0) = 0$, $\phi(x,1) = 0$, $\phi(0,y) = 0$, $\phi(1,y) = 1$. Let ϕ_1 and ϕ_2 be two solutions satisfying the above boundary conditions. Which of the following statements is/are true?

Select one or more:
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- 4

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- $\phi_1 + \phi_2$ satisfies the boundary conditions
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- $\phi_1 \phi_2$ satisfies the boundary conditions
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Select one or more:
- $\phi_1 + \phi_2$ satisfies the boundary conditions
- $\phi_1 - \phi_2$ satisfies the boundary conditions
- $\phi_1 \phi_2$ satisfies the boundary conditions
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- 1
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- 4

Consider the 2-D Laplace equation $\nabla^2 \phi = 0$ in a domain $0 \le x \le 1$, $0 \le y \le 1$ with the boundary conditions $\phi(x,0) = 0$, $\phi(x,1) = 0$, $\phi(0,y) = 0$, $\phi(1,y) = 1$. Let ϕ_1 and ϕ_2 be two solutions satisfying the above boundary conditions. Which of the following statements is/are true?

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Select one or more:
- 1
- 2
- 3
- 4

Finish Attempt

Navigation Tools

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

Finish Attempt

Question **1**

Incorrect

Mark 0.00 out of 1.00

Flag question

Consider v=[0,1,1,0,0,1,0] an individual from the space of binary vectors. The associated fitness function computes the sum of bits that constitute the vector representation. Choose the correct statements from the following: a. v has 7 neighbors at Hamming distance 1. b. there is at least one neighbor (binary vector at distance 1 from v) with a higher fitness value than v; c. there is at least one neighbor (binary vector at distance 1 from v) with a lower fitness value than v; d. there is no neighbor (binary vector at distance 1 from v) with the same fitness value as v; e. there is at least one neighbor (binary vector at distance 1 from v) with the same fitness value as v.

Select one:

- a. e
- b. a, b, c, d
- c. a, b, c
- d. a, b, d
- e. b, c, d ✖

Question **2**

Incorrect

Question **2**

Incorrect

Mark 0.00 out of 1.00

Flag question

Consider a binary vector x with k elements. A neighbor of x is a binary vector with k components, with the Hamming distance to the vector x being 1. The set of neighbors of x: a. has k elements; b. has 10 elements; c. consists of vectors with a better quality than x; d. has an even number of individuals; e. does not contain doubles.

Select one:

- a. b, d, e ✗
- b. b
- c. a, e
- d. a, c, e
- e. b, e

Question **3**

Correct

Mark 1.00 out of 1.00

Flag question

Tournament selection with 3 participants has the following consequences: a. selects one parent / member of next generation; b. randomly selects 3

Question **3**

Correct

Mark 1.00 out of 1.00

Flag question

Tournament selection with 3 participants has the following consequences: a. selects one parent / member of next generation; b. randomly selects 3 individuals from the set it is applied on; c. selects the best individual from the 3 individuals randomly considered from the multiset it is applied on; d. randomly selects an individual; e. creates a selection pressure proportional to 3.

Select one:

- a. c, e
- b. none of the other answers
- c. a, c, e ✔
- d. b, c
- e. d, e

Question **4**

Incorrect

Mark 0.00 out of 1.00

Flag question

Let f:D=[0,1] → [0,5] be a function to be

Question **4**

Incorrect

Mark 0.00 out of 1.00

Flag question

Let f:D=[0,1] -> [0,5] be a function to be maximized. A method that compute a global maximum point involves:

Select one:

- A. stochastic and population-based search
- B. any search method
- C. the use of hill climbing technique
- D. the use of backtracking method
- E. the evaluation of each element in D and the selection of the best one ✖

Question **5**

Correct

Mark 1.00 out of 1.00

Flag question

Let X=[9, 3, 2, 5, 6, 8, 1, 7, 10, 4] and Y=[2, 8, 4, 5, 10, 3, 7, 6, 9, 1] be a pair of parent permutations. Which one of the following couple of permutations results in case of applying the OCX procedure, if the

Question **5**

Correct

Mark 1.00 out of 1.00

Flag question

Let X=[9, 3, 2, 5, 6, 8, 1, 7, 10, 4] and Y=[2, 8, 4, 5, 10, 3, 7, 6, 9, 1] be a pair of parent permutations. Which one of the following couple of permutations results in case of applying the OCX procedure, if the crossover points are (3,6) ?

Select one:

- A. C1=[6 7 8 10 5 1 9 3 4 2], C2=[9 8 1 3 6 7 5 10 4 2]
- B. C1 = [4 10 2 5 6 8 3 1 9 7], C2 = [2 6 4 5 10 3 8 9 7 1]
- C. C1=[2 6 7 8 10 5 1 9 3 4], C2=[2 8 1 3 6 7 5 10 4 9]
- D. C1 = [4 10 2 5 6 8 3 7 9 1], C2 = [2 6 4 5 10 3 8 1 7 9] ✔
- E. C1=[8 7 10 5 1 9 3 4 2 6], C2=[2 9 1 8 3 6 7 5 10 4]

Question **6**

Incorrect

Mark 0.00 out of 1.00

Flag question

Question **6**

Incorrect

Mark 0.00 out of 1.00

Flag question

Consider S the space of binary vectors with k elements, and f:S->N the objective function in a maximization problem (N is the set of natural numbers). The global maximum of f could be computed by: a. computing the fitness of every elements in S and selecting the best one, for low values of k; b. using an ES (evolutionary strategy) algorithm, for high values of k; c. applying an ES algorithm, for low values of k; d. applying hill climbing method, for low values of k; e. applying hill climbing method, for high values of k; f. using a classical genetic algorithm, based on populations, for high values of k; g. using a classical genetic algorithm, based on populations, for low values of k.

Select one:

- a. c, d
- b. b, e ✖
- c. b, g
- d. b, f
- e. a, f

Question **7**

Incorrect

Question **7**

Incorrect

Mark 0.00 out of 1.00

Flag question

Consider a population P with dim individuals. A genetic algorithm using P as current population generally ends when: a. P has many different individuals, no matter the size of representations b. P has many different individuals, no matter their quality; c. P has many individuals with different fitness values; d. P has many individuals with similar qualities; e. P has an even number of individuals; f. P has a small number of different individuals; g. the highest fitness value of individuals in P has not changed over the recent generations.

Select one:

- a. e, g, f
- b. a, b, c ✖
- c. b, e
- d. d, e, g
- e. d, f, g

Question **8**

Correct

Mark 1.00 out of 1.00

Flag question

Question **8**

Correct

Mark 1.00 out of 1.00

Flag question

A GA maximizes

Select one:

- A. Linear functions only
- B. Exponential functions only
- C. Quadratic functions only
- D. Fitness functions ✔
- E. none of the other answers

Question **9**

Incorrect

Mark 0.00 out of 1.00

Flag question

Self-adaptation mechanism implemented by algorithms from ES (evolutionary strategies) class: a. is related to the population size; b. is related to the size of mutation steps; c. aims to direct the search towards area(s) with global optimum point(s); d. refines the search in solution space to get a very good approximation of an optimum point; e. refines the search in solution space to find as many as possible optimum points.

Question **9**

Incorrect

Mark 0.00 out of 1.00

Flag question

Self-adaptation mechanism implemented by algorithms from ES (evolutionary strategies) class: a. is related to the population size; b. is related to the size of mutation steps; c. aims to direct the search towards area(s) with global optimum point(s); d. refines the search in solution space to get a very good approximation of an optimum point; e. refines the search in solution space to find as many as possible optimum points.

Select one:

- a. a, c ✖
- b. a, c, d
- c. b, c, d
- d. a, d, e
- e. a, e

Question **10**

Correct

Mark 1.00 out of 1.00

Flag question

Let us consider the following chromosome: {7, 6, 1

Question **10**

Correct

Mark 1.00 out of 1.00

Flag question

Let us consider the following chromosome: {7, 6, 12, 14, 3, 10, 8, 15, 11, 5, 4, 1, 13, 2, 9}. If the result of scramble mutation is: {7, 14, 13, 12, 1, 15, 2, 8, 6, 3, 11, 5, 10, 4, 9 } then the following genes could have been used: 1. 1 and 14; 2. 4 and 15; 3. 3 and 15; 4. 4 and 8; 5. 5 and 15; 6. 1 and 12; 7. 2 and 14; 8. 2 and 13; 9. 1 and 15; 10. 1 and 13; 11. 3 and 13

Select one:

- A. 6
- B. 1, 7, 9 ✔
- C. 1, 5, 7, 9
- D. 5, 10
- E. 2

Question **11**

Correct

Mark 1.00 out of 1.00

Flag question

Let X = [1, 4, 5, 8, 7, 9, 2, 3, 6, 10], Y = [9, 3, 4, 2, 8, 7, 10, 5, 1, 6] be a pair of parent permutations. Which one of the following couple of permutations results

Question **11**

Correct

Mark 1.00 out of 1.00

Flag question

Let X = [1, 4, 5, 8, 7, 9, 2, 3, 6, 10], Y = [9, 3, 4, 2, 8, 7, 10, 5, 1, 6] be a pair of parent permutations. Which one of the following couple of permutations results in case of applying the PMX procedure, if the crossover positions are (5,6)?

Select one:

- A. C1 = [1, 6, 8, 3, 4, 2, 7, 9, 10, 5], C2 = [9, 8, 1, 4, 5, 7, 2, 3, 6, 10]
- B. C1 = [8, 3, 4, 2, 7, 9, 10, 5, 1, 6], C2 = [1, 4, 5, 9, 8, 7, 2, 3, 6, 10] ✔
- C. C1 = [3, 8, 4, 2, 7, 9, 10, 5, 1, 6], C2 = [10, 4, 5, 9, 8, 7, 2, 3, 6, 1]
- D. C1 = [3, 4, 9, 6, 5, 7, 1, 10, 8, 2], C2 = [10, 2, 6, 4, 1, 5, 8, 7, 3, 9]
- E. C1 = [8, 3, 4, 7, 9, 10, 5, 1, 6, 2], C2 = [1, 4, 5, 7, 2, 3, 6, 10, 8 ,9]

Question **12**

Correct

Mark 1.00 out of 1.00

Flag question

Let X=[6 1 8 10 5 7 9 3 4 2] and Y=[9 8 7 3 6 1 5 10 4 2] be a pair of parent permutations. Which one of the following couple of permutations results in case of applying the CX procedure?

Select one:

- A. C1=[6 7 8 10 5 1 9 3 4 2], C2=[9 8 1 3 6 7 5 10 4 2]
- B. C1=[8 7 10 5 1 9 3 4 2 6], C2=[2 9 1 8 3 6 7 5 10 4]
- C. C1=[2 6 7 8 10 5 1 9 3 4], C2=[2 8 1 3 6 7 5 10 4 9]
- D. C1=Y, C2=X
- E. C1=[6 8 7 10 5 1 9 3 4 2], C2=[9 1 8 3 6 7 5 10 4 2] ✔

Question **13**

Correct

Mark 1.00 out of 1.00

Flag question

Question **13**

Correct

Mark 1.00 out of 1.00

Flag question

Let x be a binary vector of size 10. A neighbor of x is a binary vector y such that the Hamming distance between x and y is 1. The set of neighbors of x: a. contains 10 elements; b. has 2*10 elements; c. contains vectors better than x in terms of fitness; d. has an even number of individuals; e. is with unique keys (distinct vectors).

Select one:

- A. a, d and e ✔
- B. b, d and e
- C. b and e
- D. b
- E. a, c and e

Question **14**

Correct

Mark 1.00 out of 1.00

Flag question

Let f:D={-2,-1,0,1,2,3} -> [0,5] be a function to be maximized. The simplest (less complex) method to

Question **14**

Correct

Mark 1.00 out of 1.00

Flag question

Let f:D={-2,-1,0,1,2,3} -> [0,5] be a function to be maximized. The simplest (less complex) method to compute a global maximum point involves:

Select one:

- A. the evaluation of each element in D and the selection of the best one ✔
- B. the use of “Divide et Impera” method
- C. the use of backtracking technique
- D. the use of hill climbing technique
- E. none of the other answers

Question **15**

Correct

Mark 1.00 out of 1.00

Flag question

Question **15**

Correct

Mark 1.00 out of 1.00

Flag question

Let v=[0,1,1,0,0,1,0] be a binary vector. The fitness function is defined on the 7-length binary vectors set and, for each chromosome, computes the sum of its components. Select the correct statement(s): a. v has seven neighbors (Hamming distance 1); b. there exists at least one neighbor (Hamming distance 1) having the fitness value above the quality of v; c. there exists at least one neighbor (Hamming distance 1) having the fitness value below the quality of v; d. there exists at least one neighbor (Hamming distance 1) with the same fitness value as the quality of v; e. none of the other answers.

Let v=[0,1,1,0,0,1,0] be a binary vector. The fitness function is defined on the 7-length binary vectors set and, for each chromosome, computes the sum of its components. Select the correct statement(s): a. v has seven neighbors (Hamming distance 1); b. there exists at least one neighbor (Hamming distance 1) having the fitness value above the quality of v; c. there exists at least one neighbor (Hamming distance 1) having the fitness value below the quality of v; d. there exists at least one neighbor (Hamming distance 1) with the same fitness value as the quality of v; e. none of the other answers.

Select one:

- A. a, c and d
- B. a, d, c and e
- C. a, b and d
- D. e
- E. a, b and c ✔

Question **16**

Correct

Mark 1.00 out of 1.00

Flag question

Let X=[6 1 8 10 5 7 9 3 4 2] be a permutation. If we apply the scramble mutation operator for (2,7), we can obtain Y: 1. Y=[2 6 7 8 10 5 1 9 3 4] ; 2. Y=[6 7 8 10 5 1 9 3 4 2] ; 3. Y=[7 6 8 10 5 1 9 3 4 2] ; 4. Y=[6 7 10 8 5 9 1 3 4 2] ;5. Y=[6 9 7 5 10 8 1 3 4 2] ; 6. Y= [6 2 8 10 5 1 9 3 4 7]

Select one:

- A. 2,5,6
- B. 3, 4, 5
- C. 2, 4, 5 ✔
- D. 1, 2, 3
- E. 1,2,5

Question **17**

Correct

Mark 1.00 out of 1.00

Flag question

The binary representation in GAs

Select one:

- A. Does not involve recombination

Question **17**

Correct

Mark 1.00 out of 1.00

Flag question

The binary representation in GAs

Select one:

- A. Does not involve recombination
- B. Uses specific variation operators ✔
- C. Does not involve mutation
- D. Is not allowed
- E. Does not use chromosomes having more than two identical alleles

Question **18**

Incorrect

Mark 0.00 out of 1.00

Flag question

The mutation procedure in GAs: 1. Is not stochastic 2. Is considered only when the genetic diversity degree is below a certain threshold 3. Is applied on the current population 4. Produce non-feasible offspring 5. Always produces feasible offspring 6. Is used to solve only constrained problems 7. Is used to solve only unconstrained problems 8. Is applied immediately before each survivor selection

Question **18**

Incorrect

Mark 0.00 out of 1.00

Flag question

The mutation procedure in GAs: 1. Is not stochastic 2. Is considered only when the genetic diversity degree is below a certain threshold 3. Is applied on the current population 4. Produce non-feasible offspring 5. Always produces feasible offspring 6. Is used to solve only constrained problems 7. Is used to solve only unconstrained problems 8. Is applied immediately before each survivor selection procedure 9. Is applied on mating pool 10. Is applied with small probability 11. Is applied once, after the initial population generation 12. Is applied on offspring multiset

Select one:

- A. 3, 5, 7, 12 ✖
- B. 4, 8, 10, 12
- C. 1, 4, 5, 8
- D. 2, 4, 5, 6, 7
- E. 8, 10, 12

Question **19**

Incorrect

Mark 0.00 out of 1.00

Flag question

Question **19**

Incorrect

Mark 0.00 out of 1.00

Flag question

In GAs, the crossover operator depends on

Select one:

- A. the genotype representation
- B. none of the other answers
- C. the phenotype representation ✗
- D. the population size
- E. the end of the search process

Question **20**

Correct

Mark 1.00 out of 1.00

Flag question

The Evolutionary Computing is

Select one:

- A. A concept that proves the theory of relativity.
- B. None of the other answers ✓
- C. Similar to the direct search methods

Question **20**

Correct

Mark 1.00 out of 1.00

Flag question

The Evolutionary Computing is

Select one:

- A. A concept that proves the theory of relativity.
- B. None of the other answers ✔
- C. Similar to the direct search methods
- D. A concept that confutes the natural evolution theory
- E. Similar to sorting algorithms

Question **21**

Correct

Mark 1.00 out of 1.00

Flag question

In every GA, the genotype representation: 1. Can be any of the following: binary, integer, real valued vectors and permutation 2. Is either integer representation or real valued vectors representation 3. Is the real valued vectors representation 4. Does not affect the recombination type 5. Depends on th given problem 6. Affects the recombination type 7.

Question **21**

Correct

Mark 1.00 out of 1.00

Flag question

In every GA, the genotype representation: 1. Can be any of the following: binary, integer, real valued vectors and permutation 2. Is either integer representation or real valued vectors representation 3. Is the real valued vectors representation 4. Does not affect the recombination type 5. Depends on the given problem 6. Affects the recombination type 7. Affects the mutation operator 8. Affects the selections

Select one:

- A. 1, 5, 6, 8
- B. 4, 5, 6, 7
- C. 4, 5, 6, 7, 8
- D. 1, 5, 6, 7 ✔
- E. 1, 3, 4, 6

Question **22**

Correct

Mark 1.00 out of 1.00

Flag question

The initial population in memetic algorithms

Question **22**

Correct

Mark 1.00 out of 1.00

Flag question

The initial population in memetic algorithms

Select one:

- A. Can use already known good solutions ✔
- B. Only consists in binary strings
- C. Only consists in permutations
- D. Only consists in real-valued vectors
- E. Is such that all the individuals are the same

Question **23**

Incorrect

Mark 0.00 out of 1.00

Flag question

The survivor selection in GA 1. Is always deterministic 2. Can be deterministic or stochastic 3. Always uses random factors 4. The selected individuals are not necessary feasible 5. Improves the average quality of the current population 6. Guarantees a better population in case it uses age factor 7. Is applied at the beginning of each iteration 8. Is applied on the offspring multi set 9. Is applied to replace the current population

Question **23**

Incorrect

Mark 0.00 out of 1.00

Flag question

The survivor selection in GA 1. Is always deterministic 2. Can be deterministic or stochastic 3. Always uses random factors 4. The selected individuals are not necessary feasible 5. Improves the average quality of the current population 6. Guarantees a better population in case it uses age factor 7. Is applied at the beginning of each iteration 8. Is applied on the offspring multi set 9. Is applied to replace the current population

Select one:

- A. 3, 7 ✖
- B. 2, 5
- C. 2, 9
- D. 1, 6
- E. 4, 8

Question **24**

Correct

Mark 1.00 out of 1.00

Flag question

Question **24**

Correct

Mark 1.00 out of 1.00

Flag question

Let X=[3, 8, 1, 6, 9, 5, 2, 10, 4, 7] and Y=[6, 7, 5, 10, 4, 2, 9, 3, 1, 8] be a pair of parent permutations. How many cycles results in case of applying the CX procedure ?

Select one:

- A. 2
- B. 1
- C. 3 ✔
- D. 4
- E. 5

Question **25**

Incorrect

Mark 0.00 out of 1.00

Flag question

Question **25**

Incorrect

Mark 0.00 out of 1.00

Flag question

In EAs, the mutation operates

Select one:

- A. after the search is over
- B. only on the fittest individuals
- C. none of the other answers
- D. only on the most unfit individuals ✗
- E. after the crossover procedure

Question **26**

Correct

Mark 1.00 out of 1.00

Flag question

A GA is a search method

Select one:

- A. of binary type
- B. that processes populations ✓
- C. none of the other answers

Question **26**

Correct

Mark 1.00 out of 1.00

Flag question

A GA is a search method

Select one:

- A. of binary type
- B. that processes populations ✔
- C. none of the other answers
- D. that is based on only one individual at each iteration
- E. of backtracking type

Question **27**

Correct

Mark 1.00 out of 1.00

Flag question

The mating pool selection in GAs: 1. Is used to solve only constrained problems 2. Is applied once, after the initial population generation 3. Is applied immediately an evaluated current population is available 4. Is always based on a selection probability distribution 5. Is applied on mutated offspring multiset 6. Can be implemented based on a selection probability distribution 7. Is an iterative

Question **27**

Correct

Mark 1.00 out of 1.00

Flag question

The mating pool selection in GAs: 1. Is used to solve only constrained problems 2. Is applied once, after the initial population generation 3. Is applied immediately an evaluated current population is available 4. Is always based on a selection probability distribution 5. Is applied on mutated offspring multiset 6. Can be implemented based on a selection probability distribution 7. Is an iterative process 8. Is applied on current population 9. Is applied once 10. Generally uses the age factor to select individuals 11. Is applied immediately before each mutation procedure 12. Is applied on offspring multiset

Select one:

- A. 3, 6, 7, 8 ✔
- B. 3, 6, 8, 12
- C. 2, 5, 8, 12
- D. 1, 2, 4, 5
- E. 4, 6, 7, 8

Question **28**

Incorrect

Mark 0.00 out of 1.00

Question **28**

Incorrect

Mark 0.00 out of 1.00

Flag question

In GAs, the termination condition 1. Could miss 2. Includes the control of the number of simulated generations 3. Always uses random factors 4. May include the population variability control 5. Improves the average quality of the current population 6. Guarantees a better population in case it uses age factor 7. Does not depend on the chromosome encoding 8. Depends on the chromosome representation

Select one:

- A. 3, 5, 6
- B. 1, 4, 7, 8
- C. 2, 4, 7
- D. 1, 5, 8
- E. 2, 3, 4, 5 ✖

Question **29**

Correct

Mark 1.00 out of 1.00

Flag question

Which one of the following operators is used by GA

Question **29**

Correct

Mark 1.00 out of 1.00

Flag question

Which one of the following operators is used by GAs in case of real valued vectors representation? 1. Not operator; 2. Fuzzy not operator; 3. Pseudo-random resetting; 4. Deterministic resetting; 5. Uniform mutation; 6. Non-uniform mutation with a given distribution probability; 7. Local mutation; 8. Scramble mutation; 9. Insertion mutation; 10. Quick mutation; 11. Swap mutation; 12. Global mutation; 13. Inversion mutation; 14. One-point crossover; 15. N-points crossover; 16. Uniform crossover; 17. Root crossover; 18. Simple arithmetic recombination; 19. Single arithmetic recombination; 20. Maximal crossover; 21. Whole arithmetic recombination 22. Partially mapped crossover; 23. Order crossover; 24. Edge crossover; 25. Cycle crossover.

Select one:

- A. 3, 4, 5, 6, 7,12, 18, 19, 20
- B. 5, 6, 14, 15, 16, 18, 19, 21 ✔
- C. All of the above mentioned operators
- D. 2, 7, 10, 12,17
- E. 1, 3, 4, 7, 10, 13, 16, 17, 20

Question **30**

08:40:00

Question **30**

Correct

Mark 1.00 out of 1.00

Flag question

In GAs, the initial population is

Select one:

- A. none of the other answers
- B. randomly generated at the beginning of the search ✔
- C. an output data
- D. computed at each iteration
- E. an input parameter

Finish review

← Presentation: Review

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09:02:16

online.ase.ro/mod/quiz/reviev

Programare evolutivă și algoritmi genetici, Tip-C, Sem-2, Zi (2022-2023)

Started on	Tuesday, 30 May 2023, 8:10 AM
State	Finished
Completed on	Tuesday, 30 May 2023, 8:34 AM
Time taken	24 mins 29 secs
Marks	19.00/30.00
Grade	**25.33** out of 40.00 (**63.33**%)

Question **1**

Incorrect

Mark 0.00 out of 1.00

Flag question

Consider v=[0,1,1,0,0,1,0] an individual from the space of binary vectors. The associated fitness function computes the sum of bits that constitute the vector representation. Choose the correct statements from the following: a. v has 7 neighbors at Hamming distance 1. b. there is at least one neighbor (binary vector at distance 1 from v) with a higher fitness value than v; c. there is at least one neighbor (binary vector at distance 1 from v) with a

Programme evaluation & algorithms (Sem 2), Sem 2, 2020-21

Started on Monday, 15 February 2021, 10:00 AM
State Finished
Completed on Monday, 15 February 2021, 10:27 AM
Time taken 27 mins
Marks 10.00/10.00
Grade 10.00 out of 10.00

Question **1**
Correct
Mark 1.00 out of 1.00

Consider T(n-1)T(n-2), where n is a unit with 10 digits and the sum of digits is equal to the computational complexity. The algorithm may be represented as a tree. Which of the following represents the global maximum? n = 2?

Select one:
- one divide of means method
- one n-power algorithm
- one MS dividing method
- one Fibonacci algorithm with "n" element in a set of numbers, where "n" is the highest one
- one DAG way to traverse the simplest method

Question **2**
Correct
Mark 1.00 out of 1.00

Consider T(n-1)T(n-2), where n is a unit with 10 digits and the sum of digits is equal to the computational complexity. The algorithm may be represented as a tree. Which of the following represents the global minimum? n = 2?

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Question **3**
Correct
Mark 1.00 out of 1.00

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Question **4**
Correct
Mark 1.00 out of 1.00

Consider T(n-1)T(n-2), where n is a unit with 10 digits and the sum of digits is equal to the computational complexity. The algorithm may be represented as a tree. Which of the following represents the local minimum? n = 2?

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Question **5**
Correct
Mark 1.00 out of 1.00

Consider T(n-1)T(n-2), where n is a unit with 10 digits and the sum of digits is equal to the computational complexity. The algorithm may be represented as a tree. Which of the following represents the global minimum? n = 2?

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Question **6**
Correct
Mark 1.00 out of 1.00

Consider T(n-1)T(n-2), where n is a unit with 10 digits and the sum of digits is equal to the computational complexity. The algorithm may be represented as a tree. Which of the following represents the global minimum? n = 2?

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Question **7**
Correct
Mark 1.00 out of 1.00

Consider T(n-1)T(n-2), where n is a unit with 10 digits and the sum of digits is equal to the computational complexity. The algorithm may be represented as a tree. Which of the following represents the local minimum? n = 2?

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Question **8**
Correct
Mark 1.00 out of 1.00

Consider T(n-1)T(n-2), where n is a unit with 10 digits and the sum of digits is equal to the computational complexity. The algorithm may be represented as a tree. Which of the following represents the local maximum? n = 2?

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- one Fibonacci algorithm with "n" element in a set of numbers, where "n" is the highest one
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Question **9**
Correct
Mark 1.00 out of 1.00

Consider T(n-1)T(n-2), where n is a unit with 10 digits and the sum of digits is equal to the computational complexity. The algorithm may be represented as a tree. Which of the following represents the global maximum? n = 2?

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Question **10**
Correct
Mark 1.00 out of 1.00

Consider T(n-1)T(n-2), where n is a unit with 10 digits and the sum of digits is equal to the computational complexity. The algorithm may be represented as a tree. Which of the following represents the global minimum? n = 2?

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Question **11**
Correct
Mark 1.00 out of 1.00

Consider T(n-1)T(n-2), where n is a unit with 10 digits and the sum of digits is equal to the computational complexity. The algorithm may be represented as a tree. Which of the following represents the local minimum? n = 2?

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Question **12**
Correct
Mark 1.00 out of 1.00

Consider T(n-1)T(n-2), where n is a unit with 10 digits and the sum of digits is equal to the computational complexity. The algorithm may be represented as a tree. Which of the following represents the local maximum? n = 2?

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Question **13**
Correct
Mark 1.00 out of 1.00

Consider T(n-1)T(n-2), where n is a unit with 10 digits and the sum of digits is equal to the computational complexity. The algorithm may be represented as a tree. Which of the following represents the global maximum? n = 2?

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Question **14**
Correct
Mark 1.00 out of 1.00

Consider T(n-1)T(n-2), where n is a unit with 10 digits and the sum of digits is equal to the computational complexity. The algorithm may be represented as a tree. Which of the following represents the global minimum? n = 2?

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Question **15**
Correct
Mark 1.00 out of 1.00

Consider T(n-1)T(n-2), where n is a unit with 10 digits and the sum of digits is equal to the computational complexity. The algorithm may be represented as a tree. Which of the following represents the local minimum? n = 2?

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Question **16**
Correct
Mark 1.00 out of 1.00

Consider T(n-1)T(n-2), where n is a unit with 10 digits and the sum of digits is equal to the computational complexity. The algorithm may be represented as a tree. Which of the following represents the local maximum? n = 2?

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Question **17**
Correct
Mark 1.00 out of 1.00

Consider T(n-1)T(n-2), where n is a unit with 10 digits and the sum of digits is equal to the computational complexity. The algorithm may be represented as a tree. Which of the following represents the global minimum? n = 2?

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Question **18**
Correct
Mark 1.00 out of 1.00

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Question **19**
Correct
Mark 1.00 out of 1.00

Consider T(n-1)T(n-2), where n is a unit with 10 digits and the sum of digits is equal to the computational complexity. The algorithm may be represented as a tree. Which of the following represents the local maximum? n = 2?

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Question **20**
Correct
Mark 1.00 out of 1.00

Consider T(n-1)T(n-2), where n is a unit with 10 digits and the sum of digits is equal to the computational complexity. The algorithm may be represented as a tree. Which of the following represents the global maximum? n = 2?

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Question **21**
Correct
Mark 1.00 out of 1.00

Consider T(n-1)T(n-2), where n is a unit with 10 digits and the sum of digits is equal to the computational complexity. The algorithm may be represented as a tree. Which of the following represents the global minimum? n = 2?

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Question **22**
Correct
Mark 1.00 out of 1.00

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Question **23**
Correct
Mark 1.00 out of 1.00

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Question **24**
Correct
Mark 1.00 out of 1.00

Consider T(n-1)T(n-2), where n is a unit with 10 digits and the sum of digits is equal to the computational complexity. The algorithm may be represented as a tree. Which of the following represents the global maximum? n = 2?

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Question **25**
Correct
Mark 1.00 out of 1.00

Consider T(n-1)T(n-2), where n is a unit with 10 digits and the sum of digits is equal to the computational complexity. The algorithm may be represented as a tree. Which of the following represents the global minimum? n = 2?

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Question **26**
Correct
Mark 1.00 out of 1.00

Consider T(n-1)T(n-2), where n is a unit with 10 digits and the sum of digits is equal to the computational complexity. The algorithm may be represented as a tree. Which of the following represents the local minimum? n = 2?

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Question **27**
Correct
Mark 1.00 out of 1.00

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Question **28**
Correct
Mark 1.00 out of 1.00

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Correct
Mark 1.00 out of 1.00

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Question **30**
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Mark 1.00 out of 1.00

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Question **31**
Correct
Mark 1.00 out of 1.00

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Question **32**
Correct
Mark 1.00 out of 1.00

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Question **33**
Correct
Mark 1.00 out of 1.00

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Question **34**
Correct
Mark 1.00 out of 1.00

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Question **35**
Correct
Mark 1.00 out of 1.00

Consider T(n-1)T(n-2), where n is a unit with 10 digits and the sum of digits is equal to the computational complexity. The algorithm may be represented as a tree. Which of the following represents the local maximum? n = 2?

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Question **36**
Correct
Mark 1.00 out of 1.00

Consider T(n-1)T(n-2), where n is a unit with 10 digits and the sum of digits is equal to the computational complexity. The algorithm may be represented as a tree. Which of the following represents the global maximum? n = 2?

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Question **37**
Correct
Mark 1.00 out of 1.00

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Question **38**
Correct
Mark 1.00 out of 1.00

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Question **39**
Correct
Mark 1.00 out of 1.00

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Question **40**
Correct
Mark 1.00 out of 1.00

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Question **41**
Correct
Mark 1.00 out of 1.00

Consider T(n-1)T(n-2), where n is a unit with 10 digits and the sum of digits is equal to the computational complexity. The algorithm may be represented as a tree. Which of the following represents the global minimum? n = 2?

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Question **42**
Correct
Mark 1.00 out of 1.00

Consider T(n-1)T(n-2), where n is a unit with 10 digits and the sum of digits is equal to the computational complexity. The algorithm may be represented as a tree. Which of the following represents the local minimum? n = 2?

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Question **43**
Correct
Mark 1.00 out of 1.00

Consider T(n-1)T(n-2), where n is a unit with 10 digits and the sum of digits is equal to the computational complexity. The algorithm may be represented as a tree. Which of the following represents the local maximum? n = 2?

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Question **44**
Correct
Mark 1.00 out of 1.00

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Question **45**
Correct
Mark 1.00 out of 1.00

Consider T(n-1)T(n-2), where n is a unit with 10 digits and the sum of digits is equal to the computational complexity. The algorithm may be represented as a tree. Which of the following represents the global minimum? n = 2?

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Question **46**
Correct
Mark 1.00 out of 1.00

Consider T(n-1)T(n-2), where n is a unit with 10 digits and the sum of digits is equal to the computational complexity. The algorithm may be represented as a tree. Which of the following represents the local minimum? n = 2?

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Question **47**
Correct
Mark 1.00 out of 1.00

Consider T(n-1)T(n-2), where n is a unit with 10 digits and the sum of digits is equal to the computational complexity. The algorithm may be represented as a tree. Which of the following represents the local maximum? n = 2?

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Question **48**
Correct
Mark 1.00 out of 1.00

Consider T(n-1)T(n-2), where n is a unit with 10 digits and the sum of digits is equal to the computational complexity. The algorithm may be represented as a tree. Which of the following represents the global maximum? n = 2?

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Question **49**
Correct
Mark 1.00 out of 1.00

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Question **50**
Correct
Mark 1.00 out of 1.00

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Question **51**
Correct
Mark 1.00 out of 1.00

Consider T(n-1)T(n-2), where n is a unit with 10 digits and the sum of digits is equal to the computational complexity. The algorithm may be represented as a tree. Which of the following represents the local maximum? n = 2?

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- one MS dividing method
- one Fibonacci algorithm with "n" element in a set of numbers, where "n" is the highest one
- one DAG way to traverse the simplest method

Question **52**
Correct
Mark 1.00 out of 1.00

Consider T(n-1)T(n-2), where n is a unit with 10 digits and the sum of digits is equal to the computational complexity. The algorithm may be represented as a tree. Which of the following represents the global maximum? n = 2?

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