

**GRADE I  
WWTP OPERATOR  
EXAMINATION INFORMATION**

The Grade I examination contains questions regarding the following subjects: basic safety practices, hazards encountered during wastewater treatment plant operations, sampling and simple analysis of wastewater constituents, operation and maintenance procedures in preliminary and primary treatment unit processes, anaerobic sludge digestion and disinfection.

It also includes specific questions on the operation and maintenance of wastewater stabilization ponds and state regulations regarding the classification of wastewater treatment plants and operator certification.

The Grade I examination also contains mathematical questions. Examinees may be asked to calculate a variety of problems including chlorine demand/residual, overflow rates, removal efficiency (% removal), pumping rate, solids concentration, detention time, hydraulic or organic loading rates and volume or surface area. The examinee should be familiar with typical calculations related to the subject matter listed in paragraph 1.

Examinees are given 2 ½ hours to complete the examination. The question format is as follows:

45 True/False Questions	@	1 point each
25 Multiple Choice Questions	@	2 points each
10 Math Problems	@	4 points each

**TOTAL POINTS 135**

**Passing Score:** To pass, you must achieve:

- (a) a minimum total score of 94.5 points (70 percent), AND
- (b) a score of at least 20 points (50 percent) on the ten Math Questions.

**GRADE II  
WWTP OPERATOR  
EXAMINATION INFORMATION**

The Grade II examination contains questions regarding the following subjects: basic safety practices, hazards encountered during wastewater treatment plant operations, sampling and simple analysis of wastewater constituents, and operation and maintenance procedures in preliminary and primary treatment unit processes, anaerobic sludge digestion and disinfection.

It also includes specific questions on the operation and maintenance of wastewater stabilization ponds and state regulations regarding the classification of wastewater treatment plants and operator certification.

In addition, the Grade II examination includes questions on secondary unit processes (e.g. trickling filters, activated sludge), sludge handling, evaluation of wastewater unit processes as well as overall plant performance and basic supervision responsibilities.

The Grade II examination also contains mathematical questions. Examinees may be asked to calculate a variety of problems including hydraulic or organic loading rate, SVI index, removal efficiency (% removal), activated sludge F/M ratio, activated sludge MCRT, pumping rate, sludge pumping rate, detention time, chlorine residual/demand, flow velocity, volume or surface area, overflow rate and nitrification. The examinee should be familiar with typical calculations related to the subject matter listed in paragraph 1.

Examinees are given 2 ½ hours to complete the examination. The question format is as follows:

50 True/False Questions	@	1 point each
30 Multiple Choice Questions	@	2 points each
10 Math Problems	@	4 points each

**TOTAL POINTS 150**

**Passing Score:** To pass, you must achieve:

(a) a minimum total score of 105 points (70 percent), AND  
a score of at least 20 points (50 percent) on the ten Math Questions.

**GRADE III  
WWTP OPERATOR  
EXAMINATION INFORMATION**

The Grade III examination contains questions regarding the following subjects: basic safety practices, hazards encountered during wastewater treatment plant operations, sampling and simple analysis of wastewater constituents, and operation and maintenance procedures in preliminary and primary treatment unit processes, anaerobic sludge digestion and disinfection.

It also includes specific questions on the operation and maintenance of wastewater stabilization ponds and state regulations regarding the classification of wastewater treatment plants and operator certification.

Other questions may deal with secondary unit processes (e.g. trickling filters, activated sludge), sludge handling, evaluation of wastewater unit processes as well as overall plant performance and basic supervision.

In addition, the Grade III examination includes questions on process control, activated sludge process modifications and tertiary treatment.

The Grade III examination also contains mathematical questions. Examinees may be asked to calculate a variety of problems including efficiency and loading of solid thickening processes, disinfectant usage, digester loading, pumping efficiency, standard BOD test, hydraulic or organic loading rate, activated sludge wasting rate, MLVSS and MLSS, sludge pumping rate, nitrogenous BOD calculation, F/M ratio and polymer usage. The examinee should be familiar with typical calculations related to the subject matter listed in paragraph 1.

Examinees are given 3 ½ hours to complete the examination. The question format is as follows:

25 True/False Questions	@ 1 point each
20 Multiple Choice Questions	@ 2 points each
6 Multiple Choice Essay Questions	@ 2 points each
10 Multiple Choice Math Problems	@ 2 points each
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97 TOTAL POINTS	

Passing Score: To pass, you must achieve:

- (a) a minimum total score of 68 points (70 percent) AND
- (b) a score of at least 10 points (50 percent) on the Math Questions.

**GRADE IV  
WWTP OPERATOR  
EXAMINATION INFORMATION**

The Grade IV examination contains questions regarding the following subjects: safety practices, hazards encountered during operations, sampling and analysis of wastewater constituents, operation and maintenance procedures in preliminary, primary and secondary treatment unit processes, anaerobic sludge digestion and disinfection.

It also includes operation and maintenance of wastewater stabilization ponds and state regulations regarding the classification of wastewater treatment plants and operator certification. Questions may deal with sludge handling and evaluation of wastewater unit processes as well as overall plant performance.

In addition, the Grade IV examination includes questions on process control, activated sludge process modifications and tertiary treatment, requirements and practices for water reclamation and reuse, supervision/management responsibilities such as energy management, safety program development, operator training and budget development and control.

The Grade IV examination also contains mathematical questions. Examinees may be asked to calculate problems including heat value/gas generation from an anaerobic digester, BOD/nitrogenous BOD calculations, effects of process adjustments/changes, polymer usage/dose, efficiency and loading of solids thickening processes, disinfection options/dose/residual/cost, use/calculation of process control variables, hydraulic or organic loading rates, pumping efficiency/cost, nitrification and effects of plant operations and infiltration and inflow. The examinee should be familiar with typical calculations related to the subject matter listed in paragraph 1.

Examinees are given 4 hours to complete the examination. The question format is as follows:

25 Multiple Choice Questions	@	2 points each
24 Multiple Choice Essay Questions	@	2 points each
15 Multiple Choice Math Problems	@	2 points each
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128 TOTAL POINTS		

Passing Score: To pass, you must achieve:

- (a) a minimum total score of 90 points (70 percent) AND
- (b) a score of at least 15 points (50 percent) on the Math Questions.

**GRADE V  
WWTP OPERATOR  
EXAMINATION INFORMATION**

The Grade V examination contains questions regarding the following subjects: safety practices, hazards encountered during operations, sampling and analysis of wastewater constituents, operation and maintenance procedures in preliminary, primary and secondary treatment unit processes, anaerobic sludge digestion and disinfection.

It also includes operation and maintenance of wastewater stabilization ponds and state regulations regarding the classification of wastewater treatment plants and operator certification. Questions may deal with sludge handling and evaluation of wastewater unit processes as well as overall plant performance.

In addition, the Grade V examination includes questions on process control, activated sludge process modifications and tertiary treatment, requirements and practices for water reclamation and reuse, supervision/management responsibilities such as energy management, safety program development, operator training and budget development and control.

The Grade V examination contains some of the most complex mathematical questions asked at Grades I-IV. Examinees may be asked to calculate problems including heat value/gas generation from an anaerobic digester, BOD/nitrogenous BOD calculations, effects of process adjustments/changes, polymer usage/dose, efficiency and loading of solids thickening processes, disinfection options/dose/residual/cost, use/calculation of process control variables, hydraulic or organic loading rates, pumping efficiency/cost, nitrification and effects of plant operations and infiltration and inflow. The examinee should be familiar with typical calculations related to the subject matter listed in paragraph 1.

Examinees are given 4 hours to complete the examination. The question format is as follows:

25 Multiple Choice Questions	@	2 points each
29 Multiple Choice Essay Problems	@	2 points each
16 Multiple Choice Math Problems	@	2 points each
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140 TOTAL POINTS		

Passing Score: To pass, you must achieve:

- (a) a minimum total score of 98 points (70 percent) AND
- (b) a score of at least 16 points (50 percent) on the Math Questions.