

**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.