

WASTEWATER TREATMENT PLANT OPERATOR EXAMINATIONS GRADE 1 STUDY GUIDE OUTLINE

The following is a general outline to serve as a study guide in preparing for the Grade 1 examination. All areas may not be covered on any one exam, nor does the outline necessarily include all topics, which may appear on an exam. The percentage value shown after each major heading gives the approximate relative value of that area on the exam.

- | | |
|---|---|
| I. General Knowledge approx. 13% <ul style="list-style-type: none">A. Wastewater CharacteristicsB. MathematicsC. Overall TreatmentD. Certification Laws and Regulations | II. Preliminary Treatment approx. 10% <ul style="list-style-type: none">A. Design ParametersB. Operating Parameters |
| III. Primary Treatment approx. 10% <ul style="list-style-type: none">A. Design and PurposeB. Operating ParametersC. TroubleshootingE. Calculations | IV. Secondary Treatment approx. 18% <ul style="list-style-type: none">A. TypesB. Operating ParametersC. Calculations |
| V. Solids Handling approx. 10% <ul style="list-style-type: none">A. Anaerobic Digester<ul style="list-style-type: none">1. Operating Parameters2. Problems-recognition and actionB. Vacuum FiltersC. Chemical Usage | VI. Disinfection approx. 12% <ul style="list-style-type: none">A. Purpose and ApplicationB. Factors which Control DisinfectionC. Calculations |
| VII. Maintenance approx. 13% <ul style="list-style-type: none">A. Pumps, PackingB. Seasonal MaintenanceC. Safety | VIII. Laboratory approx. 7% <ul style="list-style-type: none">A. SamplingB. EquipmentC. TerminologyD. Test ProceduresE. Calculations |
| IX. Safety <ul style="list-style-type: none">A. BreathingB. LaboratoryC. Electrical | |

There are several publications available which are useful in preparing for the exam although you will not find it necessary to be familiar with all of them in order to do well on the test.

The Sacramento Course
Standard Methods Latest Edition
Water Pollution Control Federal Manuals Nos. 1, 4, 11, 16, 18, 20
The New York Manual
ABC Study Guide to the ABC Testing Services for Wastewater Collections Systems and Treatment Plant Operations - Volumes 1 and 2
DEM Computer-Assisted Training

These publications can be reviewed in the Office of Water Resources, RIDEM, 235 Promenade Street, Providence, RI (401) 222-6820.

GRADE 1

Sample Questions

1. Chlorine is added to wastewater at a constant rate of 100 pounds in 24 hours. The wastewater flow averages 1.4 MGD. How much chlorine would be used in 6 hours?
 - A. 6 pounds
 - B. 100 pounds
 - C. 37.5 pounds
 - D. 25 pounds
 - E. 30 pounds

2. Effluent Biochemical Oxygen Demand should be in the range of:
 - A. Greater than 30 mg/l
 - B. Less than 30 mg/l
 - C. Approximately 100 mg/l per million gallons
 - D. BOD is rarely present in effluent, as it is broken down to become TSS

3. A tricking filter will not operate effectively if:
 - A. The activated carbon filter become porous
 - B. Ponding occurs
 - C. The distribution arms rotate clockwise
 - D. The RAS rate is insufficient

4. Influent total Suspended Solids have a value of 230 mg/l, the final effluent Total Suspended Solids has a value of 6 mg/l the percent removal is:
 - A. 9.4%
 - B. 99%
 - C. 95%
 - D. 26%
 - E. 97%