

WASTEWATER TREATMENT PLANT OPERATOR EXAMINATION
GRADE 3 STUDY GUIDE

The following is a general outline to serve as a study guide in preparing for the Grade 3 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 give the approximate relative value of that area on the exam.

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|---|--|
| I. General Knowledge approx. 5% | II. Preliminary & Primary Treatment approx. 6% |
| A. Wastewater Characteristics | A. Troubleshooting |
| B. Mathematics | B. Operating Parameters |
| C. Overall Treatment | C. Calculations |
| | |
| III. Secondary Treatment (Activated Sludge) approx. 28% | IV. Solids Handling approx. 15% |
| A. Process Concepts and Characteristics | A. Solids Handling Equipment |
| B. Process Control | B. Dewatering Methods; Type, Applications |
| C. Testing | C. Calculations |
| D. Operating Parameters | |
| E. Calculations | |
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| V. Disinfection approx. 9% | VI. Laboratory approx. 13% |
| A. Theory | A. Sampling |
| B. Calculations | B. Laboratory Practices |
| | C. Calculations |
| | D. Test Procedures |
| VII. Maintenance approx. 9% | |
| A. Pumps | |
| B. Tools and Equipment | VIII. Safety approx. 5% |
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| IX. Records and Management approx. 10% | |
| A. Cost of Operation | |
| B. Personnel | |
| C. Overall Management | |

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 Federation Manuals Nos. 1, 4, 11, 16, 18, 20

The New York Manual

ABC Guide to the ABC Testing Services for Wastewater Collection 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 3
Sample Questions

1. Diseases possibly spread by wastewater discharges include all but ONE of the following. Select the one NOT associated with wastewater discharges:
 - A. Typhoid
 - B. Cholera
 - C. Polio
 - D. Dysentery
 - E. Hepatitis (Jaundice)

2. What should be done first if a problem develops in a mechanically cleaned screen?
 - A. Reach in with you hand and fix the equipment.
 - B. Attempt to fix the screen with the proper tools.
 - C. Immediately identify the problem and then turn off the power.
 - D. Turn off the electrical power to the screen.
 - E. Find someone to help in case you get in trouble.

3. A one-cylinder reciprocating sludge pump with a 6 inch bore and a 3 inch stork, pumps 60 cycles/min. The pump must be operated how many minutes to pump 2000 gallons of sludge?
 - A. 15 minutes
 - B. 30 minutes
 - C. 60 minutes
 - D. 90 minutes
 - E. 120 minutes

4. Estimate the detention time in a sedimentation tank 90 feet long, 30 feet wide, and 144 inches deep, if the flow is 3.0 M.G.D.? Select the closest answer:
 - A. 15 hours
 - B. 1.5 hours
 - C. 2.0 hours
 - D. 2.4 hours
 - E. 2.8 hours

Answers: 1) C 2) D 3)D 4)C