



Steam Certification Board Sample Test Questions for Written Steam Boiler Operator Examinations

The following are samples of questions for the five classes of steam boiler operator certification. These questions are not the same questions an applicant will find on an examination but only samples. The "Class IV" examination may include test questions relevant to the "Class V" examination. The "Class III" examination may include questions relevant to the "Class IV" and "Class V" examinations. The "Class II" examination may include questions relevant to the "Class III", "Class IV" and "Class V" examinations. The "Class I" examination may include questions relevant to the "Class II", "Class III", "Class IV" and "Class V" examinations.

These and similar questions can be found in the recommended textbooks, codes, ordinances and procedures as listed below.

ASME Boiler & Pressure Vessel Code	Steam – its generation and use
Electric Motor Controls	Ugley's Electrical References
Boiler Operator's Guide	Stationary Engineering
Steam Plant Operation	High Pressure Boilers
Boiler Operator's Workbook	Low Pressure Boilers
Tacoma City Ordinance #26951/Tacoma Municipal Code Chapter 6B.60	
Bates Technical College's "Procedure to Establish Operating Certification for Steam Boiler Operators"	
Washington Administrative Code 296-104-100	

In addition to the multiple choice questions there is at least one drawing required on each examination and on some examination two or three. These drawing could include boilers, feedwater regulators, steam traps, fuel supply systems, pumps, pre-treatment equipment, etc.

Class V Boiler Fireman

1. The most important boiler fitting on a boiler is the:
 - a. Blowdown valve.
 - b. Pressuretrol.
 - c. Feedwater line check valve.
 - d. Safety valve.
2. A ___ blowdown is performed to remove sludge from the boiler.
 - a. Bottom.
 - b. Water column.
 - c. Surface.
 - d. Low water fuel cutoff.
3. A boiler operated at pressures not exceeding 15 psi for steam is classified in the Tacoma City Ordinance #26951 as a:
 - a. Cast iron sectional boiler.
 - b. Small power boiler.
 - c. Power steam boiler.
 - d. Low-pressure steam heating boiler.

4. The water column for a boiler must be located:
 - a. On the right side of the boiler.
 - b. At the normal operating water level.
 - c. On the front of the boiler.
 - d. On the left side of the boiler.

Class IV Boiler Fireman

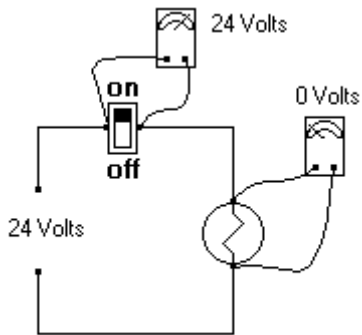
1. A boiler that is priming has:
 - a. Air vented from the drum.
 - b. A low water condition.
 - c. Water carried over with the steam.
 - d. The furnace prepared for ignition.
2. According to Tacoma City Ordinance #26951, whenever a boiler that is required to be tended by a certified boiler operator with a particular class of certificate, is being operated by a person who does not have a boiler operator's certificate, or the boiler operator's certificate is limited to not include the size of boiler being operated, the boiler operator, or the person tending the boiler, shall be issued:
 - a. A civil penalty of \$250 for each an every day of the violation..
 - b. A civil penalty of \$250.
 - c. A civil penalty of \$250 and five (5) days in jail.
 - d. A civil penalty of \$250 and ten (10) days in jail.
3. A steam boiler safety valves must be sized to prevent steam pressure from exceeding the MAWP by:
 - a. 10%.
 - b. 6%.
 - c. 25%
 - d. None of the above.
4. CO in the flue gas of a boiler is an indication of:
 - a. Complete combustion.
 - b. Incomplete combustion.
 - c. Perfect combustion.
 - d. Theoretical Combustion.
5. Fuel oil grades commonly used in boilers are designated by No. ____ for the lightest grade of fuel oil through No. ____ for the heaviest grade of fuel oil.
 - a. 1; 6.
 - b. 6; 1.
 - c. 1; 4.
 - d. 2; 6.

Class III Operating Engineer

1. In a pressure atomizing burner, the atomization of the oil is accomplished by:
 - a. Steam pressure.
 - b. Air pressure.
 - c. A rotating cup.
 - d. A sprayer plate and tip.
2. Steam and water in a closed feedwater heater:
 - a. Mix freely.
 - b. Do not mix.
 - c. Mix in the top section of the heater.
 - d. Mix in the bottom section of the heater.
3. In steam tables, the heat in liquid is the:
 - a. Total heat minus latent heat.
 - b. Boiling point minus 32°F.
 - c. Boiling point plus 32°F.
 - d. Latent heat plus sensible heat.

Class II Operating Engineer

1. Spalling is caused by:
 - a. Temperature changes in the furnace.
 - b. A constant firing rate.
 - c. Maintaining a high furnace temperature.
 - d. Maintaining a low furnace temperature.
2. In the drawing, what does the voltage meters indicate?

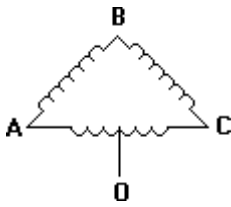


- a. The light bulb is burned out.
- b. The meters are bad.
- c. There is no power at the power supply.
- d. The switch is bad.

3. In a jet condenser:
 - a. Water flows through the tubes while steam surrounds the tubes.
 - b. Steam flows through the tubes while water surrounds the tubes.
 - c. Water and steam mix.
 - d. Condensate can be reclaimed.

Class I Chief Operating Engineer

1.



In the drawing of a delta configured transformer, what would be the proper voltages?

- a. A-B is 240 volts; A-O is 240 volts; B-O is 120 volts.
 - b. B-C is 240 volts; C-O is 120 volts; B-O is 208 volts.
 - c. A-C is 208 volts; C-O is 110 volts; B-C is 240 volts.
 - d. A-O is 120 volts; A-B is 208 volts; B-O is 240 volts.
3. A sentinal valve:
- a. Warns the operator of high backpressure.
 - b. Relieves high backpressure.
 - c. Warns the operator of a loss of vacuum.
 - d. Warns the operator of low backpressure.
4. According to Washington Administrative Code 296-104, all rental boilers used in the state of Washington shall be marked with the serial number of the state of Washington followed by the letter(s):
- a. "W".
 - b. "WA".
 - c. "WR".
 - d. "WS".