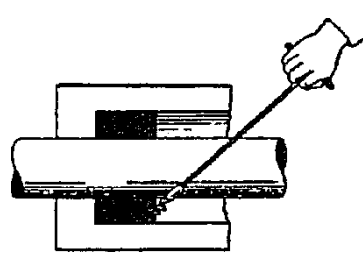


Steam fitting/Pipefitting IP Red Seal Practice Exam

1. If on initial system start-up, the pressure gauge on the boiler rises too quickly, you can suspect that:
 - a. the expansion tank is waterlogged
 - b. the pressure gauge is faulty
 - c. the pressure reducing valve is faulty
 - d. the pressure relief valve is faulty
2. Who is responsible for writing up deficiency lists?
 - a. the pipefitter
 - b. the manufacturer
 - c. the draftsman
 - d. the engineer
3. After changing an isolation valve on a fuel system, you should:
 - a. purge out the system
 - b. test the system for leaks
 - c. both (a) and (b) are correct
 - d. none of the above are correct
4. Which type of fitting is most easily dismantled for repair and maintenance procedures?
 - a. butt welded
 - b. socket welded
 - c. flanged
 - d. threaded
5. If the circulating pump is not running but the radiators are still hot, you can suspect that the problem is:
 - a. the boiler thermostat
 - b. the triple aquastat
 - c. the flow control valve
 - d. the pump switch
6. A gasket installed in a 600 psi steam line has blown. If the gasket is not replaced as soon as possible, the flange faces will eventually:
 - a. break
 - b. wiredraw
 - c. become brittle
 - d. lose their rated capacity
7. What should you do if you notice that the packing gland of a small hand valve is leaking?
 - a. advise the maintenance supervisor of the area so that he can put it on his deficiency list
 - b. advise the operator of the area so that he can adjust the flow pattern through the valve to compensate for the loss of fluid
 - c. tighten it up as tight as possible so that it does not get loose again
 - d. snug it up just until it stops leaking
8. If a boiler feed water pump packing is leaking, you should:
 - a. adjust the packing nuts immediately
 - b. adjust the packing nuts only after the pump has been shutdown
 - c. advise the maintenance supervisor that the pump will have to be replaced
 - d. ignore the situation because boiler feed water pump packing always leak

9. When dismantling a piping system in an older building special precaution must be taken to avoid inhaling:
- vermiculite
 - fibre glass
 - asbestos
 - titanium
10. If a circuit in a hot water heating system persistently air locks, it may a good idea to:
- install a manual air vent
 - install-an automatic air vent
 - change the piping arrangement
 - convert the system to operate with steam
11. Packing glands on circulating pumps should be:
- torqued in to manufacturer's specifications before starting the pump
 - injected with a high pressure sealant to prevent shaft leakage
 - removed, soaked in water, and replaced prior to starting the pump
 - first tightened finger tight, then adjusted under operating conditions
12. The tool being used in the illustration on the right is properly referred to as:
- a flexible packing puller
 - a Phillips screwdriver
 - a temperature sensing probe
 - a flexible screwdriver
- 
13. "An elaborate program designed to prevent breakdown or to detect minor problems that, untreated, can lead to breakdown" would be a good definition of the term:
- preventative maintenance
 - troubleshooting
 - diagnostics
 - second guessing
14. A thermodynamic steam trap is operating with an inlet pressure of 110 psig and an outlet pressure of 80 psig. The failure of condensate to pass through this steam trap would most likely be caused by:
- debris under the disc
 - excessive backpressure
 - insufficient pressure at the trap inlet
 - installation of the trap in a vertical position
15. When opening intermittent blow down valves, you should:
- open the quick opening valve first
 - open the slow opening valve first
 - open both valves simultaneously
 - it makes no difference which valve is opened first
16. Which tool should you use if you want to remove the setscrew on a pump shaft?
- a straight blade screwdriver
 - a Robertson screwdriver
 - a Phillips screwdriver
 - an Allen wrench

17. Before you shut down a hot water heating system in an apartment building for temporary repairs, you should advise:
- the plumbing inspector
 - the gas inspector
 - the owner of the building
 - the building manager
18. Assume that the circuit illustrated above is designed to operate a conveyor belt used to move bales of paper from the loading ramp to the railway car. The operator shifts the directional control valve to allow hydraulic fluid to flow through port "B". As the bales move along the conveyor belt, one of them gets snagged by the railway car door. Which of the following statements would best describe what should happen?
- The pressure relief valve will open and the actuator will stall
 - the flow control valve will sense the excess pressure and automatically open to relieve the excess pressure
 - the directional control valve will sense the resistance and automatically shift position to allow the conveyor belt to reverse its direction
 - the pressure on the paper bale will increase until the bale breaks apart
19. Assume that the circuit illustrated above is designed to operate a conveyor belt used to move bales of paper from the loading ramp to the railway car. The operator determines that the conveyor belt is moving too fast, causing some of the bales to occasionally fall off. The simplest and most cost-effective way to rectify this problem would be to:
- replace the fixed displacement pump with a variable displacement pump
 - replace the finite positioning directional control valve with an infinite positioning directional control valve
 - bypass the excess volume of hydraulic fluid through the pressure relief valve
 - bypass the excess volume of hydraulic fluid through the flow control valve
20. Which trade(s) would be involved in changing a centrifugal pump and motor in a pulp mill?
- the electricians
 - the millwrights
 - the pipefitters
 - all of the above
 - only (a) and (b) are correct
21. If the inlet pressure gauge on a steam trap indicates a reading of 60 psig, and the outlet pressure gauge reads 20 psig, you can suspect that:
- there is extensive backpressure on the steam trap
 - something is plugged under the seat or disc of the steam trap
 - the steam trap has been installed backward
 - a back flow preventer will have to be added to the trapping arrangement
22. If you are required to change the seal on a boiler that can be started from a remote location, you should:
- lock out the power switch located adjacent to the pump
 - lock out the main breaker switch
 - do not lock out either power switch
 - put a tag on both switches
23. Which of the following meters should you use to check a potentially faulty step-down transformer?
- an ammeter
 - a millimeter
 - a multimeter
 - an ohmmeter

24. What is the main cause on a service call to a steam boiler, when water hammering was occurring due to priming of the boiler?
- Boiler water is traveling into the system with the steam.
 - Steam is returning to the boiler through the return main.
 - Both the continuous and intermittent blow-downs are open.
 - Condensate is returning to the boiler under pressure.
25. What is the proper procedure to repair a broken fitting on a hydronic heating system using CPVC pipe?
- Isolate, drain remove joint solvent weld to new spool and fitting and install
 - Drain, isolate remove joint apply primer solvent weld to new spool and fitting and install
 - Isolate, drain remove joint apply primer to new spool and fitting and install
 - Isolate, drain remove joint apply primer solvent weld to new spool and fitting and install
26. Before breaking open the pipe joints for repair, what should be done with the isolation valves on a high pressure steam system?
- Remove the valve handles so the valves can't be operated.
 - Open the valves fully to equalize the pressure with the system.
 - Check that the valves are closed, tagged and locked out.
 - Determine the pressure in the mains ahead of the isolation valves.
27. What should you do when a float and thermostatic trap is backing up condensate. The start-up load is not extra heavy. There is no leakage in the coils of a steam to water heat exchanger connected to the system?
- Check the float orifice for blockage.
 - Check the thermostatic element.
 - Check for dirt or wear on the seat and disc.
 - Check the float's air vent hole for blockage.
28. When the boiler is firing and no water is visible in the sight glass, what is the first action taken?
- Reset the low water cut-off switch.
 - Shut off the fuel supply to the boiler.
 - Shut off the steam supply to the system.
 - Prove that the sight glass is operational.
29. A sump pump in a refinery has become very loud and it is clear that it will need to be removed and replaced. What special hazards must be accounted for before replacing the pump if the pump is located at the bottom of the sump, which is 1metre deep. If the correct pump and materials are available?
- lock out, a confined space entry permit, and a hot permit are required
 - lockout and a confined space entry permit are required.
 - lock out is required.
 - No special hazard precautions are required.
30. Steam piping for a Cast Iron Sectional steam boiler has been replaced with new A105 pipe. Which of the following procedures will be required before the boiler will run properly?
- apply 150 psig test on boiler and system.
 - clean and flush is required.
 - operational boiler start-up is required.
 - flue gas analysis is required.

31. When is it safe to remove the old packing from a valve that is under pressure?
- a. When the valve is completely closed.
 - b. When the valve is back seated.
 - c. When the valve is completely open.
 - d. Never

ANSWER KEY

300

1. A
2. D
3. C
4. C
5. C
6. B
7. D
8. B
9. C
10. B
11. D
12. A
13. A
14. B
15. A
16. D
17. D
18. A
19. D
20. D
21. B
22. B
23. C
24. A
25. D
26. C
27. A
28. B
29. B
30. B
31. D