



SAMPLE TEST QUESTIONS BOILER MAKER - ITA WEBSITE

- 1 How many rafters are to be installed at a chord distance of 6 ft. 3 1/8 in. on a 40-ft. diameter tank?
 - A. 20
 - B. 21
 - C. 22
 - D. 23

- 2 What is the working load limit (WLL) of 1/2 in. improved plow steel wire rope?
 - A. 1.0 ton
 - B. 1.5 tons
 - C. 2.0 tons
 - D. 3.0 tons

- 3 What length of plate 16 mm thick is required to form a cylinder with an OD of 2 438 mm?
 - A. 7 560 mm
 - B. 7 607 mm
 - C. 7 627 mm
 - D. 7 657 mm

- 4 What is the mean diameter of a cylinder that is to be rolled to an OD of 74 in. if the material thickness is 3/4 in.?
 - A. 72 1/2 in.
 - B. 73 1/4 in.
 - C. 74 in.
 - D. 74 3/4 in.



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- 5 A bulk storage tank has a mean diameter of 80 ft. and a shell plate thickness of $1\frac{1}{8}$ in. What is the inside radius to which the shell plates would be positioned?
- A. 39 ft. $10\frac{7}{8}$ in.
 - B. 39 ft. $11\frac{7}{16}$ in.
 - C. 40 ft. 0 in.
 - D. 40 ft. $9\frac{1}{16}$ in.
- 6 What is done after installing the floor plates in a dry-bottom precipitator?
- A. Wash, scrub and paint.
 - B. Vacuum test for leaks.
 - C. Test for leaks with water.
 - D. Remove all dogs and scabs.
- 7 What is done to temporarily suspend the steam drum on a bottom-supported boiler until the tack tubes are installed and expanded?
- A. Suspend it from a crane.
 - B. Lash it to the mud drum.
 - C. Lash it to the structural steel.
 - D. Hold it up from the mud drum by columns.
- 8 The scale on a drawing is 1 in. = 1 ft. What is the length of the line on the drawing that represents an object with a dimension size of 18 in.?
- A. $1\frac{1}{2}$ in.
 - B. 18 in.
 - C. 36 in.
 - D. 216 in.



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- 9 Which instrument is used with a micrometer to determine precise ID measurements?
- A. Flexible rule.
 - B. Depth gauge.
 - C. Inside micrometer.
 - D. Telescoping gauge.
- 10 What is the offset between cans when fitting circumferential seams on penstock sections with a 3/4 in. difference in diameter?
- A. 1/8 in.
 - B. 1/4 in.
 - C. 3/8 in.
 - D. 3/4 in.
- 11 Given **no** direct crane access, what is the best method for landing and securing an 8 ft. by 8 ft. platform complete with grating and handrails?
- A. Transfer load to local rigging and bolt up.
 - B. Transfer load to finger bars and bolt up.
 - C. Make accessible bolts, transfer load and bolt up.
 - D. Make accessible bolts and transfer load to tirror.
- 12 What is used to move a light tray section along a high line assembly in a large diameter vessel?
- A. Tag line.
 - B. Chainfall.
 - C. Come-along.
 - D. 4-ton air tugger.



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- 13 What is the welding sequence for scroll case sections?
- A. Stress relieve, weld exterior complete, back gouge, weld interior complete.
 - B. Stress relieve, weld interior complete, back gouge, weld exterior complete.
 - C. Preheat, weld exterior complete, back gouge, weld interior complete.
 - D. Preheat, weld interior complete, back gouge, weld exterior complete.
- 14 What is inspected on an integral scaffold before starting penstock maintenance?
- A. Scaffold clip weld integrity, decking, and explosion-proof lighting.
 - B. Scaffold clip weld integrity, decking, toeboard, midrails, and handrails.
 - C. Decking, toeboard, midrails, and scaffold frame.
 - D. Decking, scaffold frame, and fixed ladders.
- 15 What should be used to lift a completed 50 ft. stack section that is 10 ft. in diameter and constructed from 3/4 in. plate onto a structural support 100 ft. above the ground?
- A. 30 ton boom truck.
 - B. 35 ton rough terrain crane.
 - C. 50 ton hydraulic crane.
 - D. 50 ton lattice boom crane.
- 16 What does the symbol \varnothing mean on a drawing?
- A. Circle.
 - B. Radius.
 - C. Diameter.
 - D. Circumference.



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- 17 A square plate has an area of $1\,490\text{ cm}^2$. What is the length of each side?
- A. 383 mm
 - B. 386 mm
 - C. 391 mm
 - D. 405 mm
- 18 What must be done when the gravel base for a 40-ft. diameter tank varies by up to $\frac{3}{8}$ in.?
- A. Nozzle orientations/elevations must be realigned on each course to correct the out of level base.
 - B. Horizontal seam gaps must be fitted unevenly to make up the $\frac{3}{8}$ in. variation.
 - C. After the first course, the shell plates must be shot and the base levelled.
 - D. Scaffold clips must be installed after the positioning of the shell plate.
- 19 After a heat exchanger is filled with water, test pressure is difficult to achieve. Assuming there are **no** leaks, what is the reason?
- A. Trapped air.
 - B. Vessel too large.
 - C. Fill hose too large.
 - D. Insufficient pump capacity.



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- 20 The first plate of the second ring on an 80-ft. diameter tank is being erected. When is the load line removed from the plate?
- A. After the butt straps have been tack welded to the shell.
 - B. After the channels or flat bars have been welded in place.
 - C. After the wedges have been installed on both sides and the key plates have been attached to the vertical seam.
 - D. After the shell plate has been set on shims, the wedges have been installed and the strongbacks have been secured.
- 21 Where are curtain frames installed?
- A. Directly below the hot roof in the scrubber.
 - B. Directly below the hot roof in the precipitator.
 - C. Directly below the cold roof in the precipitator.
 - D. Directly above the chain-fed hopper in a wet bottom precipitator.
- 22 What is done to prevent the generating tube from rotating prior to expansion into the drum?
- A. Peen the tube on two sides.
 - B. Clamp the tube to the one next to it.
 - C. Tack weld each tube to the tube sheet.
 - D. Insert hardwood spacers between the tubes.
- 23 What is the centre-to-centre spacing for wire rope clips used on 1-in. diameter rope?
- A. 4 in.
 - B. 6 in.
 - C. 8 in.
 - D. 10 in.



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- 24 What must the hoist operator and the signaler do when using radio communication?
- A. Avoid communicating until the lift status changes.
 - B. Keep in constant communication with each other.
 - C. Keep a clear view of each other while communicating.
 - D. Use abbreviated radio communication to relay messages.
- 25 The thickness of one section of a pressure vessel is 1/4 in. and the thickness of the abutting section is 1/2 in. What must be done?
- A. The thinner section must be built up to meet the thicker at a slope no greater than 1:2.
 - B. The thicker section must be bevelled to meet the thinner at a slope of 1:3.
 - C. The thicker section must be bevelled to meet the thinner at a slope of 1:4.
 - D. The thinner section must be built up to meet the thicker at a slope greater than 1:6.
- 26 Which method would help control distortion in a welded component?
- A. Using larger electrodes and larger weld passes.
 - B. Finishing each weld with lots of weld reinforcement.
 - C. Using lower amperage and small consecutive passes.
 - D. Welding in the same direction and staggering the welds.
- 27 Which type of fire can be put out with a fire extinguisher inscribed with a circle containing the letter C?
- A. Live electrical.
 - B. Combustible metals.
 - C. Gasoline, oil or grease.
 - D. Wood, paper and textiles.



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- 28 What must be done before lifting a load over the side of a mobile crane?
- A. Remove the jib.
 - B. Boom straight up.
 - C. Block the counterweight.
 - D. Fully extend the outriggers.
- 29 What could happen if a hydraulic boom is **not** extended with equal section lengths?
- A. Two-blocking.
 - B. Overloaded longest section.
 - C. Overloaded shortest section.
 - D. Damage to the hydraulic system.
- 30 What is the final ID after expanding a tube with the following dimensions?

Tube hole = 2.35 in. Tube OD = 2.25 in. Tube ID = 2.00 in. 10% reduction for 2 tube wall thicknesses

- A. 2.015 in.
- B. 2.113 in.
- C. 2.125 in.
- D. 2.140 in.