

1. Which type of steam generator is characterized by its operation above the critical pressure of water?

- a) Conventional boiler
- b) High-pressure boiler
- c) Lamont boiler
- d) Velox boiler

Answer: b) High-pressure boiler

Explanation: High-pressure boilers operate above the critical pressure of water, typically above 221 bar. This allows for greater energy efficiency and performance compared to conventional boilers.

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2. The Benson boiler is known for its:

- a) Low water consumption
- b) Complex design
- c) Use of natural circulation
- d) Slow steam production

Answer: a) Low water consumption

Explanation: The Benson boiler is renowned for its low water consumption due to its once-through steam generation process, where water is converted to steam in a single pass through the boiler tubes, resulting in high efficiency and reduced water usage.

3. Which steam generator utilizes a closed-loop cycle with no direct contact between steam and water?

- a) Loeffler boiler
- b) Velox boiler
- c) Lamont boiler
- d) Benson boiler

Answer: a) Loeffler boiler

Explanation: The Loeffler boiler operates on the principle of a closed-loop cycle, where steam is generated by mixing feedwater with superheated steam outside the boiler drum. This design prevents direct contact between steam and water.

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4. The efficiency of a boiler is calculated by:

- a) Energy input/output ratio
- b) Steam pressure
- c) Steam temperature
- d) Fuel consumption

Answer: a) Energy input/output ratio

Explanation: Boiler efficiency is determined by the ratio of energy output (steam production)

to energy input (fuel consumption), typically expressed as a percentage.

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5. Super critical boilers operate at pressures:

- a) Below atmospheric pressure
- b) Above critical pressure of water
- c) Below 100 bar
- d) Equal to atmospheric pressure

Answer: b) Above critical pressure of water

Explanation: Super critical boilers operate above the critical pressure of water, typically above 221 bar, resulting in enhanced efficiency and performance.

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6. Boiler draught is used to:

- a) Control steam temperature
- b) Control combustion airflow
- c) Increase water level in the boiler
- d) Decrease boiler pressure

Answer: b) Control combustion airflow

Explanation: Boiler draught, achieved through natural or forced means, regulates the airflow

into the combustion chamber, ensuring optimal combustion conditions for efficient fuel utilization.

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7. Which boiler code provides guidelines for the design, construction, and inspection of power boilers?

- a) ASME Boiler and Pressure Vessel Code
- b) ISO 9001
- c) European Pressure Equipment Directive (PED)
- d) ASTM Standards

Answer: a) ASME Boiler and Pressure Vessel Code

Explanation: The ASME Boiler and Pressure Vessel Code sets standards for the design, construction, and inspection of power boilers, ensuring safety and quality in boiler manufacturing and operation.

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8. Equivalent evaporation of a boiler is a measure of its:

- a) Steam pressure
- b) Steam temperature
- c) Steam quality
- d) Steam output compared to the evaporation of water

Answer: d) Steam output compared to the evaporation of water

Explanation: Equivalent evaporation represents the amount of steam produced by a boiler per unit mass of fuel burned, compared to the evaporation of water under standard conditions.

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9. Which type of boiler is known for its rapid steam production and compact design?

- a) Lamont boiler
- b) Velox boiler
- c) Benson boiler
- d) Loeffler boiler

Answer: b) Velox boiler

Explanation: The Velox boiler is recognized for its rapid steam generation and compact design, achieved through a combination of forced circulation and combustion processes.

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10. Fuel and ash handling in boilers primarily involves:

- a) Monitoring steam pressure
- b) Storing fuel in the combustion chamber
- c) Transportation and storage of fuel and ash
- d) Controlling boiler temperature

Answer: c) Transportation and storage of fuel and ash

Explanation: Fuel and ash handling in boilers encompasses the processes of transporting, storing, and managing fuel (such as coal or biomass) for combustion, as well as handling and disposing of resulting ash residues.

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