

1. Which condition is necessary for maximum discharge in steam nozzles?

- a) Adiabatic flow
- b) Isentropic flow
- c) Super-saturated flow
- d) Frictionless flow

Answer: b) Isentropic flow

Explanation: Isentropic flow refers to the ideal condition where there is no change in entropy during the flow process. In steam nozzles, achieving isentropic flow is crucial for maximizing discharge and efficiency.

2. What is the effect of friction in steam nozzles?

- a) Increases discharge
- b) Decreases discharge
- c) Has no effect
- d) Causes vaporization

Answer: b) Decreases discharge

Explanation: Friction in steam nozzles leads to energy losses, which ultimately reduces the discharge of steam.

3. What type of flow occurs when steam exits a nozzle at a pressure lower than its saturation pressure?

- a) Superheated flow
- b) Subcooled flow
- c) Super-saturated flow
- d) Saturated flow

Answer: a) Superheated flow

Explanation: Superheated flow occurs when steam exits a nozzle at a pressure lower than its saturation pressure and its temperature is above the saturation temperature corresponding to that pressure.

4. Which type of condenser relies on air circulation for cooling?

- a) Surface condenser
- b) Jet condenser
- c) Evaporative condenser
- d) Shell and tube condenser

Answer: c) Evaporative condenser

Explanation: Evaporative condensers use air circulation and evaporation of water to cool the condensate.

5. How does back pressure affect plant performance in steam condensers?

- a) Increases efficiency
- b) Decreases efficiency
- c) No effect

d) Increases discharge

Answer: b) Decreases efficiency

Explanation: Back pressure in steam condensers reduces the pressure differential across the turbine, leading to decreased efficiency of the power plant.

6. What is the primary effect of air leakage in condensers?

- a) Decreases cooling efficiency
- b) Increases cooling efficiency
- c) Reduces condensate formation
- d) Increases condensate formation

Answer: a) Decreases cooling efficiency

Explanation: Air leakage in condensers disrupts the cooling process by introducing non-condensable gases, which reduces the efficiency of heat transfer.

7. Which type of cooling tower uses water spray to enhance cooling efficiency?

- a) Natural draft cooling tower
- b) Mechanical draft cooling tower
- c) Wet cooling tower
- d) Dry cooling tower

Answer: c) Wet cooling tower

Explanation: Wet cooling towers utilize water spray or film to increase the contact area between air and water, enhancing the cooling efficiency.

8. In which type of cooling tower does air circulate naturally without the use of fans?

- a) Induced draft cooling tower
- b) Forced draft cooling tower
- c) Natural draft cooling tower
- d) Hyperbolic cooling tower

Answer: c) Natural draft cooling tower

Explanation: Natural draft cooling towers rely on the buoyancy effect of warm air rising and cool air sinking to circulate air without the need for fans.

9. What is the purpose of a cooling tower in a power plant?

- a) To increase steam temperature
- b) To decrease turbine efficiency
- c) To cool condensate for reuse
- d) To increase condensation pressure

Answer: c) To cool condensate for reuse

Explanation: Cooling towers cool the condensate from steam back into water for reuse in the power plant's steam cycle.

10. Which type of condenser is more commonly used in power plants due to its compact

design and efficient heat transfer?

- a) Surface condenser
- b) Jet condenser
- c) Evaporative condenser
- d) Shell and tube condenser

Answer: a) Surface condenser

Explanation: Surface condensers are preferred in power plants for their compact design, efficient heat transfer, and ability to handle large quantities of condensate.

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