1. Which component of a hydrological computation involves analyzing the relationship between rainfall and runoff?
a) Power duration curves
b) Mass curves
c) Rainfall-runoff analysis
d) Storage capacity

Answer: c) Rainfall-runoff analysis

Rainfall-runoff analysis involves studying how rainfall events lead to the generation of runoff, which is essential for understanding the water availability for hydroelectric power generation.

2. What do power duration curves represent in hydrology?
a) Flow rate over time
b) Energy output over time
c) Rainfall intensity over time
d) Storage capacity over time

Answer: b) Energy output over time

Power duration curves depict the relationship between the available power from a hydroelectric facility and the duration for which that power is available. It helps in understanding the variability and reliability of power generation.

3. Which curve is used to analyze the distribution of water inflow over a specific period for a hydroelectric project?
a) Power duration curve
b) Mass curve

c) Flow duration curve
d) Storage capacity curve

Answer: b) Mass curve

A mass curve shows the cumulative inflow of water over a period, helping in assessing the water resource availability and planning for hydroelectric power generation accordingly.

4. Which component is NOT typically found in a hydroelectric power station?
a) Dam
b) Spillway
c) Wind turbines
d) Penstock

Answer: c) Wind turbines

Hydroelectric power stations utilize water flow to generate electricity, and components like dams, spillways, and penstocks are integral to their operation. Wind turbines are not part of hydroelectric power generation infrastructure.

5. Which component of a hydro station regulates water flow and prevents overtopping of the dam during high water levels?
a) Intake system
b) Spillway
c) Penstock
d) Reservoir

Answer: b) Spillway

The spillway in a hydro station controls the release of excess water from the reservoir, preventing overtopping of the dam and ensuring safety.

6. What is the purpose of a balancing reservoir in a hydroelectric power station?
a) To regulate water flow
b) To store excess water
c) To balance power output
d) To prevent sedimentation

Answer: c) To balance power output

A balancing reservoir helps in maintaining a steady power output by regulating the flow of water, especially during periods of fluctuating demand or water availability.

7. Which type of hydro station is suitable for harnessing energy from small water streams or rivers in remote areas?
a) Micro hydro
b) Macro hydro
c) Mega hydro
d) Pico hydro

Answer: a) Micro hydro

Micro hydro stations are designed for small-scale hydroelectric power generation, often in remote areas, utilizing small water streams or rivers to produce electricity.

8. Which factor is crucial in the selection of hydraulic turbines for hydroelectric power stations?

a) Environmental impact
b) Cost-effectiveness
c) Water flow rate
d) Turbine color

Answer: c) Water flow rate

The selection of hydraulic turbines depends significantly on the water flow rate available at the site, as different types of turbines are suitable for varying flow conditions.

9. What is a key consideration in selecting a site for a hydroelectric power station?
a) Proximity to urban areas
b) Availability of wind energy
c) Water availability
d) Soil fertility

Answer: c) Water availability

The availability and reliability of water flow at a site are critical factors in determining its suitability for hydroelectric power generation.

10. Which component of a hydro station is responsible for conveying water from the reservoir to the turbines?
a) Spillway
b) Intake system
c) Headworks
d) Penstock

Answer: d) Penstock

The penstock is a pipeline or conduit that carries water from the reservoir to the turbines, where the kinetic energy of flowing water is converted into mechanical energy to generate electricity.

11. Which type of hydroelectric station is typically built on a large scale, often involving extensive infrastructure and reservoir creation?
a) Micro hydro
b) Pico hydro
c) Macro hydro
d) Mini hydro

Answer: c) Macro hydro

Macro hydro stations are large-scale hydroelectric projects that involve significant infrastructure, including dams and reservoirs, to harness the power of large rivers or water bodies.

12. What is the primary function of the headworks in a hydroelectric power station?
a) To regulate water flow
b) To store excess water
c) To control sedimentation
d) To facilitate water intake

Answer: d) To facilitate water intake

The headworks in a hydro station include structures such as intake gates or screens, which

facilitate the intake of water from the reservoir or river for power generation.

13. Which type of hydroelectric station is suitable for harnessing energy from very small water streams or irrigation canals?
a) Micro hydro
b) Pico hydro
c) Mini hydro
d) Macro hydro

Answer: b) Pico hydro

Pico hydro stations are designed for extremely small-scale hydroelectric power generation, suitable for harnessing energy from very small water streams or irrigation canals.

14. Which factor is NOT typically considered in the selection of a site for a hydroelectric power station?
a) Geological stability
b) Vegetation density
c) Water flow variability
d) Wind speed

Answer: d) Wind speed

While wind speed may be important for wind power generation, it is not a significant factor in selecting sites for hydroelectric power stations.

15. Which component of a hydro station is responsible for regulating the flow of water to the turbines based on electricity demand?

a) Penstock
b) Spillway
c) Intake system
d) Control system

Answer: d) Control system

The control system in a hydro station regulates the flow of water to the turbines based on electricity demand, ensuring efficient operation and synchronization with the grid.

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