1. What does IUH stand for in hydrology?

a) Intermittent Unit Hydrograph
b) Instantaneous Unit Hydrograph
c) Indirect Unit Hydraulics
d) Infiltration Utilization Hypothesis

Answer: b) Instantaneous Unit Hydrograph

Explanation: The Instantaneous Unit Hydrograph (IUH) is a fundamental concept in hydrology used to represent the runoff response of a watershed to a unit input of rainfall occurring at any given time.

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2. Which method is commonly used for flood routing in hydrological studies?

a) Reservoir routing
b) ISD method
c) Puls method
d) Gumbel’s method

Answer: a) Reservoir routing

Explanation: Reservoir routing is a commonly used method for flood routing, which involves predicting the flow through a reservoir during a flood event.

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3. What does ISD stand for in hydrology?

a) Instantaneous Storage Discharge
b) Indirect Sediment Deposition
c) Internal Stream Discharge
d) Indirect Storage Drainage

Answer: a) Instantaneous Storage Discharge

Explanation: ISD (Instantaneous Storage Discharge) method is used in hydrology to model the relationship between storage and discharge in a reservoir.

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4. Which method is used for channel routing based on the Muskingham approach?

a) ISD method
b) Puls method
c) Empirical method
d) Muskingham method

Answer: d) Muskingham method

Explanation: The Muskingham method is commonly used for channel routing, which predicts

the flow rate and water level in a river or channel over time.

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5. What is the primary purpose of using Gumbel’s distribution in hydrology?

a) Flood routing
b) Reservoir sedimentation
c) Frequency analysis
d) IUH derivation

Answer: c) Frequency analysis

Explanation: Gumbel’s distribution is frequently used in hydrology for frequency analysis, particularly in estimating extreme events such as floods or droughts.

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6. What is the main cause of reservoir sedimentation?

a) Erosion
b) Algal growth
c) Urbanization
d) Industrial pollution

Answer: a) Erosion

Explanation: Erosion, primarily due to soil erosion from upstream catchment areas, is the main cause of reservoir sedimentation.

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7. Which factor does NOT affect reservoir sedimentation?

a) Climate
b) Land use
c) Reservoir depth
d) Population density

Answer: d) Population density

Explanation: Population density is not directly related to reservoir sedimentation. Factors like climate, land use, and reservoir depth have more significant impacts.

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8. What is the aim of empirical and rational formulas in the context of design floods?

a) To estimate sediment deposition
b) To calculate reservoir capacity
c) To determine flood magnitudes
d) To model channel routing

Answer: c) To determine flood magnitudes

Explanation: Empirical and rational formulas are used to estimate flood magnitudes, aiding in the design of hydraulic structures and flood management.

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9. In frequency analysis, what does Gumbel’s distribution help determine?

a) Reservoir capacity
b) Flood recurrence intervals
c) Sediment transport rates
d) IUH parameters

Answer: b) Flood recurrence intervals

Explanation: Gumbel’s distribution is applied in frequency analysis to estimate flood recurrence intervals, helping in flood risk assessment and management.

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10. Which method is NOT commonly used for reservoir sedimentation control?

a) Afforestation
b) Dredging
c) Desalination

d) Soil conservation

Answer: c) Desalination

Explanation: Desalination is not a method used for reservoir sedimentation control. Afforestation, dredging, and soil conservation are more commonly employed techniques.

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11. What does the IUH represent in hydrological analysis?

a) Rainfall intensity
b) Runoff response
c) Reservoir capacity
d) Sedimentation rate

Answer: b) Runoff response

Explanation: The IUH (Instantaneous Unit Hydrograph) represents the runoff response of a watershed to a unit input of rainfall, aiding in hydrological analysis.

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12. Which method is used to predict the flow through a reservoir during a flood event?

a) ISD method

b) Empirical method
c) Reservoir routing
d) Rational formula

Answer: c) Reservoir routing

Explanation: Reservoir routing is specifically used to predict the flow through a reservoir during a flood event, considering factors like inflow, outflow, and storage.

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13. What does the Muskingham method primarily focus on in hydrological modeling?

a) Flood frequency analysis
b) Reservoir sedimentation
c) Channel routing
d) IUH derivation

Answer: c) Channel routing

Explanation: The Muskingham method is primarily focused on channel routing, predicting flow rates and water levels in rivers or channels over time.

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14. Which factor is NOT typically considered in frequency analysis for hydrological events?

a) Precipitation patterns
b) Catchment area
c) Reservoir depth
d) Streamflow

Answer: c) Reservoir depth

Explanation: Reservoir depth is not typically considered in frequency analysis for hydrological events. Factors like precipitation patterns, catchment area, and streamflow are more relevant.

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15. What is the primary function of the puls method in hydrology?

a) Flood routing
b) Sedimentation control
c) IUH derivation
d) Reservoir capacity estimation

Answer: a) Flood routing

Explanation: The puls method in hydrology is primarily used for flood routing, predicting the movement of floodwaters through river channels and reservoirs.