

UNIT – III : Hydrographs and Unit Hydrographs

1. A hydrograph is a graph between
 - a) Rainfall and area
 - b) Discharge and time
 - c) Evaporation and time
 - d) Infiltration and time**Ans: b**
2. The rising limb of a hydrograph represents
 - a) Increase in discharge
 - b) Decrease in discharge
 - c) Constant discharge
 - d) Base flow**Ans: a**
3. The highest point on a hydrograph is called
 - a) Peak discharge
 - b) Base flow
 - c) Lag time
 - d) Time base**Ans: a**
4. Effective rainfall is
 - a) Total rainfall
 - b) Rainfall contributing to runoff
 - c) Groundwater recharge
 - d) Interception loss**Ans: b**
5. Base flow is mainly contributed by
 - a) Surface runoff
 - b) Groundwater
 - c) Rainfall
 - d) Evaporation**Ans: b**
6. Unit hydrograph theory was proposed by
 - a) Horton
 - b) Sherman
 - c) Darcy
 - d) Penman**Ans: b**
7. A unit hydrograph corresponds to
 - a) 1 cm effective rainfall
 - b) 1 mm rainfall
 - c) Total rainfall
 - d) Annual rainfall**Ans: a**
8. Unit hydrograph assumes
 - a) Linearity
 - b) Non-linearity
 - c) Random behavior
 - d) Variable rainfall excess**Ans: a**

9. S-hydrograph is obtained by
- a) Summation of unit hydrographs
 - b) Rainfall analysis
 - c) Infiltration analysis
 - d) Evaporation analysis

Ans: a

10. Synthetic unit hydrograph is used when
- a) Data are unavailable
 - b) Rainfall is absent
 - c) Runoff is zero
 - d) Basin is urbanized

Ans: a

11. The recession limb of a hydrograph indicates
- a) Increasing discharge
 - b) Decreasing discharge
 - c) Constant flow
 - d) Rainfall intensity

Ans: b

12. The time interval between the centroid of rainfall excess and peak discharge is called
- a) Time of concentration
 - b) Lag time
 - c) Base period
 - d) Duration

Ans: b

13. Hydrograph analysis is primarily used for
- a) Flood estimation
 - b) Soil classification
 - c) Canal lining
 - d) Irrigation scheduling

Ans: a

14. Direct runoff hydrograph excludes
- a) Surface runoff
 - b) Base flow
 - c) Storm runoff
 - d) Effective rainfall

Ans: b

15. Which method is commonly used for base flow separation?
- a) Straight-line method
 - b) Thiessen method
 - c) Penman method
 - d) IDF method

Ans: a

16. The area under a direct runoff hydrograph represents
- a) Rainfall volume
 - b) Runoff volume
 - c) Evaporation loss
 - d) Infiltration loss

Ans: b

17. A unit hydrograph is applicable to
- a) A specific catchment only
 - b) Any catchment
 - c) Rivers only
 - d) Reservoirs only

Ans: a

18. S-hydrograph is also known as
- a) Summation hydrograph
 - b) Synthetic hydrograph
 - c) Storm hydrograph

d) Standard hydrograph

Ans: a

19. Synthetic unit hydrographs are developed using

- a) Catchment characteristics
- b) Rainfall records only
- c) Canal data
- d) Well data

Ans: a

20. The main application of a unit hydrograph is

- a) Flood forecasting
- b) Canal alignment
- c) Well design
- d) Irrigation scheduling

Ans: a

Fill in the Blanks

1. A hydrograph is a plot of discharge versus _____.

Answer: time

2. The rising limb of a hydrograph indicates increasing _____.

Answer: discharge

3. The highest point on a hydrograph is called the _____ discharge.

Answer: peak

4. Effective rainfall contributes directly to _____.

Answer: runoff

5. The groundwater contribution to streamflow is called _____ flow.

Answer: base

6. Separation of base flow is called base flow _____.

Answer: separation

7. A unit hydrograph represents runoff from one unit depth of _____ rainfall.

Answer: effective

8. Unit hydrograph theory was proposed by _____.

Answer: Sherman

9. Unit hydrograph assumes linearity and _____ principles.

Answer: superposition

10. The duration of effective rainfall is constant in a _____ hydrograph.

Answer: unit

11. S-hydrograph is also called _____ hydrograph.

Answer: summation

12. Synthetic unit hydrograph is developed without observed _____ data.

Answer: runoff

13. Hydrograph analysis is used in _____ estimation.

Answer: flood

14. Direct runoff hydrograph excludes _____ flow.

Answer: base

15. Effective rainfall is rainfall remaining after all _____.

Answer: losses

16. Time from rainfall to peak discharge is called _____ time.

Answer: lag

17. The recession limb represents decreasing _____.

Answer: discharge

18. Hydrographs are essential in watershed _____.

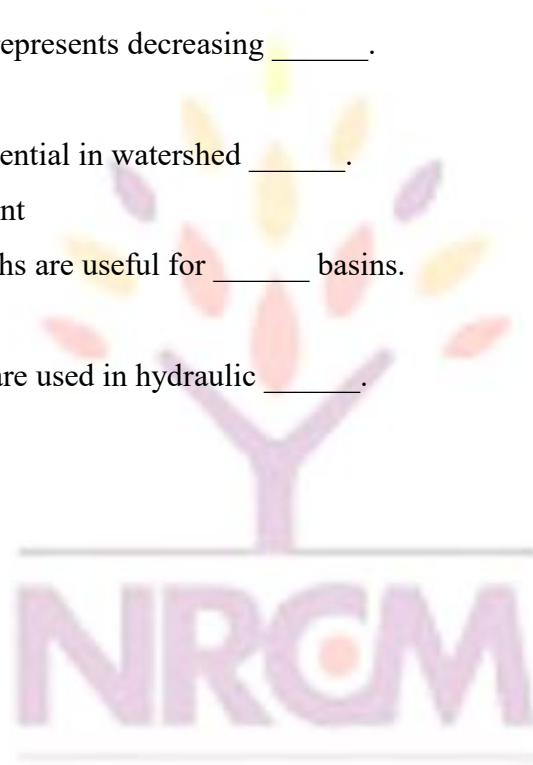
Answer: management

19. Synthetic hydrographs are useful for _____ basins.

Answer: ungauged

20. Flood hydrographs are used in hydraulic _____.

Answer: design



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