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3 (Sem-6/CBCS) GGY HE 2

2025

## GEOGRAPHY

(Honours Elective)

Paper : GGY-HE-6026

(Hydrology)

Full Marks : 60

Time : Three hours

**The figures in the margin indicate full marks for the questions.**

1. Answer the following questions as directed :

1×7=7

- (a) Define overland flow.
- (b) What are the units of measuring water discharge ?
- (c) Give an example of a braided river.
- (d) What do you mean by flood frequency ?

- (e) Hygrometer is used for estimating —
- (i) water vapour content of the air
  - (ii) water content of soil
  - (iii) capillary potential of soil water
  - (iv) specific gravity of a liquid
- (Choose the correct option)

- (f) Define ground water.
- (g) What is a catchment area?

2. Answer the following questions very briefly :  
2×4=8

- (a) What is evapotranspiration?
- (b) What do you mean by Unit Hydrograph?
- (c) What is the difference between baseflow and surface runoff?
- (d) Define water budget.

3. Answer **any three** of the following questions :  
5×3=15

- (a) Distinguish between long profile and cross profile of a river.

- (b) Discuss briefly the types of flow in a river.
- (c) Explain briefly the importance of system concept in an open channel.
- (d) Define precipitation. What are the different forms of precipitation? Explain.
- (e) Describe briefly the erosional activity of a river.

4. Discuss in detail the meaning and scope of hydrology. 10

**Or**

Describe the importance of groundwater on surface runoff.

5. What is river basin hydrology? Illustrate your answer with suitable diagrams. 10

**Or**

Discuss in detail the factors responsible for the streamflow variation in a channel.

6. Discuss the mechanism of flood plain formation with special reference to the Brahmaputra Valley. 10

Or

What is runoff hydrograph ? Write in detail the factors controlling the shape of a hydrograph.  $3+7=10$

Or

Describe the importance of groundwater on surface runoff.

Or

Discuss in detail the factors responsible for the streamflow variation in a channel.

Discuss the mechanism of flood plain formation with special reference to the Brahmaputra Valley.