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S. No. of Question Paper : 6171

Unique Paper Code : 219501

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Name of the Paper : GEHT 501 : Hydrogeology

Name of the Course : B.Sc. (Hons.) Geology

Semester : V

Duration : 3 Hours

Maximum Marks : 75

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt any *five* questions.

All questions carry equal marks.

1. Explain the following :

(a) Vertical distribution of groundwater

(b) Geological formations as aquifer.

2. State whether the following statements are true *or* false. If false, give the correct one :

(a) An open well may become dry if a borehole is drilled very close to it and pumped continuously

P.T.O.

- (b) Perched water table may lie below the groundwater table
- (c) Quartzite does not have primary porosity, but if fractured can yield water because fractures increase porosity and permeability
- (d) The larger shape of cone of depression exhibit high hydraulic conductivity of aquifer
- (e) The top of the hilllocks are more favourable for groundwater reservoir than the valley regions.

3. Explain the following :

- (a) Isotropic and Anisotropic aquifer
- (b) Specific yield and Specific retention
- (c) Aquifuge and Aquitard.

4. Write short notes on :

- (a) Constant head permeameter
- (b) Storativity
- (c) Transmissivity
- (d) Surface runoff.

5. (a) Discuss Darcy's law and comment on its validity.

- (b) Briefly discuss about hydrological cycle.

6. Write notes on the following :

(a) Steady State Radial flow to a pumping well in an unconfined aquifer

(b) Discuss about Hill and Piper trilinear plot for graphic representation of groundwater quality data.

7. (a) Explain the types of aquifers.

(b) Describe Ghyben-Herzberg relation between fresh and saline water in coastal aquifers.

8. Describe surface and subsurface groundwater exploration methods.