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**6 SEM TDC GEO M 7**

**2014**

( May )

**GEOLOGY**

( Major )

Course : 607

**( Hydrogeology and Oceanography )**

Full Marks : 48

Pass Marks : 19

Time : 2 hours

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

**UNIT—25.1**

**( Hydrogeology )**

( Marks : 36 )

1. Choose/Fill in the blanks of the following :

1×3=3

- (a) Water that is formed at the time of consolidation of magma is termed as connate water/vadose water/meteoric water/juvenile water.

- (b) Permeability is measured in units called —.
- (c) The water-yielding capacity of an aquifer is expressed in terms of its —.
2. Write on any *four* of the following :  $2 \times 4 = 8$
- (a) Connate water
  - (b) Aquiclude and aquitard
  - (c) Storage coefficient
  - (d) Influent and effluent streams
  - (e) Piezometric surface
3. Write short notes on any *two* of the following :  $3 \times 2 = 6$
- (a) Relation between specific yield and permeability
  - (b) Absolute porosity and effective porosity
  - (c) Rainwater harvesting
4. State and explain Darcy's law.  $1 + 3 = 4$
5. What is an aquifer? Describe in detail the different types of aquifer with proper diagram.  $1 + 4 = 5$



( 3 )

6. Discuss Ghyben-Herzberg principles for saline water intrusion in coastal aquifer. Write two methods of prevention and control of saline water intrusion. 3+2=5

Or

What are the causes and prevention of fluoride and arsenic in groundwater? 5

7. Describe briefly the hydrogeological methods for exploration of groundwater. 5

Or

Name the different groundwater provinces of India. Describe briefly the hydrogeological characteristics of the Ganga-Brahmaputra Alluvial Province. 2+3=5

UNIT—25.2

( Oceanography )

( Marks : 12 )

8. Choose the correct answer of the following : 1×2=2

(a) Abyssal hills are domes or elongated hills that are not higher than — meters.

(10000/1100/1000)

(b) Flat-topped seamounts are called —.

(Guyot/Abyssal hill/Abyssal plains)

9. Write notes on any *three* of the following :

2×3=6

- (a) Oceanic wave
- (b) Oceanic tide
- (c) Subsurface oceanic current  
(thermohaline circulation)
- (d) Wilson cycle
- (e) Biogenic sediments

10. Describe briefly the methods used for study of submarine topography with suitable diagram.

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Or

Describe briefly the theories of origin of ocean basin.

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