2015

(5th Semester)

GEOLOGY

EIGHTH (A) PAPER

(Hydrology and Oceanography)

Full Marks : 55

Time : 2½ hours

(PART : B—DESCRIPTIVE)

(*Marks* : 35)

The figures in the margin indicate full marks for the questions

Answer **five** questions, selecting **one** from each Unit

UNIT—I

1. Define aquifer. Describe different types of aquifer with suitable diagrams. 2+5=7

2. Write a descriptive note on hydrological cycle with appropriate diagram. 7

UNIT—II

3. Write short notes on the following : 3½+3½=7

(a) Types of spring

(b) Total dissolved solids (TDS)

4. Describe Darcy's law with mathematical equation. Also mention its validity. 5+2=7

UNIT—III

5. Write descriptive notes on the following : 3½+3½=7

(a) Salinity variations of seawater

(b) Thermohaline circulation

6. Discuss the following : 3½+3½=7

(a) The density of seawater increases as temperature decreases

(b) Causes and types of tide

UNIT—IV

7. Give a descriptive note on the quality of groundwater for irrigation and industrial purposes. 7

8. Write a note on different types of instrument used for measuring precipitation. 7

UNIT—V

9. Elaborate the following : 3½+3½=7

(a) Geophysical exploration for groundwater

(b) Stratigraphic importance of North-East India in terms of economy

10. Write short notes on the following : 3½+3½=7

(a) Anti-waterlogging measures

(b) Geological succession of Mizoram

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(PART : A—OBJECTIVE)

(*Marks* : 20)

The figures in the margin indicate full marks for the questions

SECTION—A

(*Marks* : 5)

1. Choose the correct answer and put its number within the brackets provided : 1×5=5

(a) C^{14} method can be used for dating water sample up to

(i) 12·38 years

(ii) 40000 years

(iii) 1.5 million years

(iv) 30 years [ ]

(b) Mean discharge of first-order spring is

(i) < 10 ml/s

(ii) > 10 m^3/s

(iii) 0·1–1·0 m^3/s

(iv) 0·1–1·0 l/s [ ]

(c) The area which contains valuable resources in the ocean floor is

(i) continental shelf

(ii) continental rise

(iii) continental slope

(iv) abyssal plain [ ]

(d) Which of the following filters has the highest filtration capacity?

(i) Reverse osmosis.

(ii) Activated carbon and charcoal filter.

(iii) Gravity filter

(iv) Fluoride filter [ ]

(e) The largest drainage basin in India is

(i) Brahmaputra

(ii) Ganga

(iii) Godavari

(iv) Indus [ ]

SECTION—B

(*Marks* : 15)

2. Write on the following : 3×5=15

(a) Precipitation and evaporation

(b) Importance of porosity and permeability for an aquifer

(c) Tsunami

(d) Organic and inorganic pollutants in groundwater

(e) Surma group in Mizoram

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