2014

(6th Semester)

GEOLOGY

TENTH PAPER

(Geochemistry and Exploration Geology)

(PART : A—OBJECTIVE)

(*Marks* : 20)

The figures in the margin indicate full marks for the questions

SECTION—A

(*Marks* : 5)

1. Put a Tick (✓) mark against the correct answer in the brackets provided : 1×5=5

(a) The upper limit of the trace element concentration is termed as

(i) background value ( )

(ii) threshold value ( )

(iii) clarke value ( )

(iv) None of the above ( )

(b) Two ions of similar charge undergo diadocic replacement in

(i) camouflage ( )

(ii) admission ( )

(iii) capture ( )

(iv) All of the above ( )

(c) pH stands for

(i) redox potential of a system ( )

(ii) relative acidity or alkalinity of a system ( )

(iii) electrical heating potential of a system ( )

(iv) None of the above ( )

(d) The scale of a Survey of India toposheet is

(i) 1 : 100000 ( )

(ii) 1 : 250000 ( )

(iii) 1 : 50000 ( )

(iv) 1 : 10000 ( )

(e) For ground water prospecting, the best suitable method is

(i) electrical resistivity ( )

(ii) radioactivity ( )

(iii) magnetic prospecting ( )

(iv) None of the above ( )

SECTION—B

(*Marks* : 15)

2. Write notes on the following in the space provided : 3×5=15

(a) MORB

(b) Background value

(c) Representative fraction (RF)

(d) Seismic reflection

(e) Clarke value

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GEOLOGY

TENTH PAPER

(Geochemistry and Exploration Geology)

Full Marks : 55

Time : 2 hours

(PART : B—DESCRIPTIVE)

(*Marks* : 35)

The figures in the margin indicate full marks for the questions

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

UNIT—I

1. Write notes on any *two* of the following : 3½×2=7

   (a) Hypothesis of Goldschmidt

   (b) Hypothesis of Kunn and Rittman

   (c) Hypothesis of Arthur Holmes

2. Write a descriptive note on 'geochemical evolution of the earth'. 7

UNIT—II

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

   (a) Trace elements

   (b) Pathfinder elements

4. Define 'trace elements'. Describe the rules of 'diadocic replacement'. 7

UNIT—III

5. Define a thematic map. Comment on its utility in the geological studies with suitable examples. 1+6=7

6. Write notes on the following : 1½+1½+2+2=7

   (a) Orientation of map

   (b) Map scale

   (c) Toposheet numbering

   (d) Grid sampling

UNIT—IV

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

   (a) Phases of exploration geochemistry

   (b) Primary and secondary dispersion

8. Write notes on any *two* of the following : $3\frac{1}{2}\times2=7$

(a) Assay map

(b) Anomaly map

(c) Generation of geochemical profile

UNIT—V

9. Describe, in detail, about the gravity method in geophysical exploration. 7

10. Write notes on any *two* of the following : $3\frac{1}{2}\times2=7$

(a) Physical parameters used in exploration

(b) Radioactivity survey method

(c) Magnetic survey method

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