2019

(April)

GEOLOGY

(Elective/Honours)

(Petrology)

(GELH-201)

Marks : 56

Time : 3 hours

The figures in the margin indicate full marks for the questions

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

GROUP—A

(Igneous Petrology)

UNIT—I

1. *(a)* What are igneous rocks? Describe the different modes of occurance of igneous rocks. 2+6=8

   (b) List any four different forms of igneous intrusive bodies. Briefly write on vesicular structure and columnar jointing. 2+4=6

(Turn Over)

2. *(a)* Give the classification of igneous rocks on the basis of

   (i) Chemical composition of the rocks 3

   (ii) Mineralogical composition of the rocks 2

   (b) Describe Bowen's reaction series. 9

UNIT—II

3. *(a)* What is texture? On what basis is texture described? 1+2=3

   (b) Discuss the various types of inequigranular textures found in igneous rocks. 7

   (c) How is a reaction rim formed? Describe spherulitic structures. 1+3=4

4. Give the plutonic or volcanic equivalent of the following rocks and write petrographic notes on any three of them : 2+(4×3)=14

   (a) Granite

   (b) Granodiorite

   (c) Diorite

   (d) Trachyte

(Continued)

GROUP—B

(Sedimentary and Metamorphic Petrology)

UNIT—III

5. *(a)* Define diagenesis. Give the genetic classification of sedimentary rocks. 2+8=10

   (b) List the mechanical structures observed in sedimentary rocks. 4

6. Write notes on any four of the following : 3½×4=14

   (a) Breccia

   (b) Sandstone maturity

   (c) Components of limestone

   (d) Solution structures

   (e) Transportation of sediments

UNIT—IV

7. *(a)* Describe the various features developed in rocks. What happens to a rock when it is subjected due to metamorphism? Discuss different types of metamorphism. 4+6=10

   (b) Briefly write on granoblastic texture and porphyroblastic texture. 2+2=4

(Turn Over)

8. Write notes on any *four* of the following : 3½×4=14

(a) Schistose structure

(b) Phyllite

(c) Marble

(d) Khondalite

(e) Concept of grades of metamorphism

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