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(February)

GEOLOGY

(Elective/Honours)

(General Geology and Crystallography and Mineralogy)

(GELH–101)

Marks : 56

Time : 3 hours

The figures in the margin indicate full marks for the questions

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

UNIT—I

(General Geology)

1. *(a)* How does the continental crust differ from the oceanic crust?   2

   (b) Describe the interior of the earth on the basis of evidences from seismic records with the help of suitable diagrams.   9+3=12

2. *(a)* Discuss the erosional work of a river and write an explanatory note on the formation of oxbow lakes with suitable figures.   4+4=8

   (b) Describe briefly the products of volcanic eruption.   6

UNIT—II

(Crystallography)

3. *(a)* Describe with the help of neat sketches, the axial characteristics of the different crystal systems.   9

   (b) What are the different types of forms developed in the normal class of the orthorhombic system?   5

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

   (a) Space lattice

   (b) Symmetry elements of the normal class of isometric system

   (c) Composition plane

   (d) Hemimorphic crystal

   (e) Parameters of a crystal face

   (f) Ionic bonding

UNIT—III

(Mineral Optics)

5. *(a)* Define a mineral.   2

     (b) Describe lustre, hardness and habit of minerals in detail.   12

6. Write notes on any *four* of the following :

                         3½×4=14

     (a) Phyllosilicates

     (b) Double refraction

     (c) Framework silicates

     (d) Polarization of light

     (e) Uniaxial and biaxial minerals

     (f) Interference colour

UNIT—IV

(Descriptive Mineralogy)

7. How are pyroxenes classified into groups on the basis of crystal structure? Name four important members and describe their physical and optical properties.   2+(3×4)=14

8. Discuss the physical and optical properties of the following (any *four*) :   3½×4=14

     (a) Nepheline

     (b) Quartz

     (c) Hornblende

     (d) Biotite

     (e) Plagioclase feldspars

     (f) Olivine group

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