

1/EH-26 (i) (Syllabus-2015)

2 0 1 8

(October)

GEOLOGY

(Honours)

(General Geology, 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) Write a brief note on the internal structure of the earth based on evidences from seismic waves. 8
- (b) Describe any two hypotheses on the origin of the earth. 3+3=6
2. (a) Describe the types of erosion by river. Write briefly on any two features associated with running water. 4+4=8

(Turn Over)

(2)

- (b) Write notes on any *two* of the following :
3×2=6

- (i) Hanging valley
- (ii) Sand dunes
- (iii) Plate boundaries

UNIT—II

(Crystallography)

3. (a) Define crystal. Write on the symmetry elements of crystals. List the symmetry elements and forms developed in the normal class of the isometric system.
1+3+4=8

- (b) Write notes on any *two* of the following :
3×2=6

- (i) Miller's indices
- (ii) Twinning
- (iii) Crystallographic axes

4. (a) What is space lattice? Discuss the various types of space lattice.
1+7=8

- (b) What are crystal defects? Describe the different types of defects in a crystal structure.
1+5=6

D9/12

(Continued)

(3)

UNIT—III

(Mineral Optics)

5. (a) Describe lustre and hardness of minerals. Give examples.
3+3=6

- (b) Explain with sketches the structure of inosilicates and phyllosilicates.
4+4=8

6. (a) What is extinction angle of a mineral? Describe any two types of extinction seen in minerals.
2+3=5

- (b) Write notes on any *three* of the following :
3×3=9

- (i) Pleochroism
- (ii) Double refraction
- (iii) Biaxial minerals
- (iv) Interference colour

UNIT—IV

(Descriptive Mineralogy)

7. (a) Describe the physical and optical properties of the pyroxene group.
8

- (b) Write a brief note on aluminosilicates.
6

D9/12

(Turn Over)

8. (a) Name the important members of the mica group of minerals. Describe the physical and optical properties of any two members of the group. $2+6=8$
- (b) Mention the physical and optical properties of any *two* of the following : $3 \times 2 = 6$
- (i) Plagioclase
 - (ii) Hornblende
 - (iii) Nepheline
