

**6/H—26 (viii) (Syllabus-2015)**

**2 0 1 8**

**( April )**

**GEOLOGY**

**( Honours )**

**[ Applied Geology (Exploration Mining and Engineering Geology) ]**

**( GELH-604 )**

**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**

**( Exploration Techniques )**

1. (a) Define sampling. List the common sampling methods employed in geological studies. Explain any two of them.

2+2+4=8

- (b) List the types of drilling. Explain any one of them in detail.

2+4=6

( 2 )

2. Write short notes on any *four* of the following :  $3\frac{1}{2} \times 4$

- (a) Reconnaissance survey
- (b) Drill bit
- (c) Geological prospecting
- (d) Role of drilling in geological exploration
- (e) Directional drilling

UNIT—II

( Geochemical Exploration and Geophysical Methods )

3. (a) Discuss the concept of geophysical exploration. Write a note on the applications of geophysical methods of exploration.  $3+$
- (b) Explain the principle of seismic reflection survey.

4. Write short notes on any *four* of the following :  $3\frac{1}{2} \times 4$

- (a) Geochemical anomaly
- (b) Primary leakage hole
- (c) Pathfinder elements
- (d) Electrical surveys
- (e) Correction factors in gravity survey

( 3 )

UNIT—III

( Mining Geology )

5. (a) Explain the room-and-pillar method of coal mining. 8
- (b) What is a shaft in mining operations? What are the functions of a shaft? Write briefly on the types of shafts.  $1+3+2=6$

6. Write short notes on any *four* of the following :  $3\frac{1}{2} \times 4 = 14$

- (a) Raise and winze
- (b) Stope
- (c) Mine development
- (d) Advantages of surface mining
- (e) Level

UNIT—IV

( Engineering Geology )

7. (a) Explain how structural attitude of rocks affect dam stability. Draw suitable sketches. 8
- (b) Explain the ways and means of mitigation of landslides. 6

( Turn Over )

8. Write short notes on any *four* of the following : 3½×4½

- (a) Role of lithology in tunnel construction
- (b) Mechanics of slides
- (c) Tunnelling in folds
- (d) Grouting
- (e) Alignment of highways

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