

REVISED COURSE

(3 Hours)

Total Marks : 80

- N.B.** 1. Question No. 1 is **compulsory**
 2. Attempt any **Three** questions out of remaining **Five** questions.
 3. Draw neat **labelled diagrams** wherever necessary.
 4. All the parts of a question should be **grouped together**.
 5. Figures to the **right** indicate marks

- Q.1a Name the following - 5
 (i) Two minerals which possess good cleavage
 (ii) Two non silicate minerals
 (iii) Two minerals with high specific gravity
 (iv) A mineral with cherry red streak and ore of iron
 (v) Name the minerals which occur in fibrous form and bladed form
- Q.1b Define the following terms- 5
 (i) Solifluction
 (ii) Engineering Geology
 (iii) Volcanic Bomb
 (iv) Mesa
 (v) Aquiclude
- Q.1c Draw diagram for the following - 5
 (i) Crater
 (ii) Gravity Dam
 (iii) Phacolith
 (iv) Conglomerate
 (v) Box fold
- Q.1d Give reasons for the following - 5
 (i) Movement of tectonic plates
 (ii) High seismicity in the northern part of India
 (iii) Clay is not a good aquifer despite having high porosity
 (iv) Development of columnar joints in basalt
 (v) Development of caves (karst topography and sink hole) in limestone
- Q.2(a) What are glaciers? Describe various landforms created by glaciers. 10
 (b) What are the plate boundaries? Describe divergent plate boundaries, in which part of the earth do you expect them? Give examples. 6
 (c) Briefly explain layered structure of the earth by giving thickness of each layer. 4
- Q.3(a) Give classification of Igneous rocks. 5
 (b) What is texture? Explain any two textures of igneous rocks. 5
 (c) Name structures of sedimentary rocks and describe any two in detail. 5
 (d) Name the agents of metamorphism and describe dynamothermal metamorphism? 5

Turn Over

- Q.4(a) What are Faults? Describe various types of faults and comment on their engineering consideration. 10
- (b) Describe any two laws of stratigraphy. 5
- (c) An ore body of pyrite is exposed on a horizontal ground and dipping southward. The width of the outcrop is 300 m. A borehole sunk from the upper bedding plane touches the lower bedding plane at a depth of 250 m. Determine its true thickness and amount of Inclination. 5
- Q.5(a) What are the conditions required for any rock to be an aquifer, describe confined and Unconfined aquifer. 6
- (b) Describe the favourable geological structures for dam. 6
- (c) What is RQD? Calculate the RQD from given data and comment on the suitability of Rock for foundation based on your result. 8
Total length of the core is 2m-

Sample No	Length of the core in cms.	Nature of the lower end of the core sample	Sample No	Length of the core in cms.	Nature of the lower end of the core sample
1	12	N	11	15	N
2	7	N	12	16	M
3	11	N	13	7	N
4	10	N	14	11	N
5	6	M	15	9	M
6	3	N	16	5	N
7	13	N	17	9	N
8	12	N	18	12	N
9	6	M	19	6	N
10	17	N	20	9	N

- Q.6 Differentiate between any 5 of the following- 5X4=20
- (i) Tunnel axis parallel to dip and tunnel axis parallel to strike
- (ii) Angular unconformity and Disconformity
- (iii) Flowing well and non flowing well
- (iv) Mechanical weathering and chemical weathering
- (v) Overturned and recumbent fold
- (vi) Central eruption and fissure eruption
- (vii) Primary and secondary structures in rock
- (viii) Electrical resistivity and seismic method of geophysical exploration