

(REVISED COURSE)

(3 Hours)

[Total marks: 80]

N.B. (1) **Question No 1** is compulsory.

- (2) Attempt any **three** questions out of remaining **five**.
- (3) Draw sketches wherever necessary.
- (4) Figures to the right indicate full marks.

1. (a) Define the following in short (**any five**) (5)
  - (i) Fault plane (ii) Aquifuge (iii) Mohorovicic discontinuity
  - (iv) Mohs' scale of hardness (v) Driekenters s(vi) Strike
- (b) Answer in brief (5)
  - (i) Name a mineral which shows splintery fracture and fibrous form.
  - (ii) Name a rock which is abundant along unconformity.
  - (iii) Mention the difference between rock salt and rock crystal.
  - (iv) How erosion is different from weathering.
  - (v) Name a mineral which is bluish in color and shows bladed form.
- (c) Draw neat labelled diagram of the following. (10)
  - (i) Mural joint and Columnar joint.
  - (ii) Gravity dam.
  - (iii) Plunging fold and its parts.
  - (iv) Dip-slip fault and strike-slip fault.
  - (v) Recumbent fold.
2. Write the difference between the following. (**any five**) (20)
  - (i) Cross bedding and ripple mark.
  - (ii) Overtured fold and isoclinal fold.
  - (iii) Porphyritic texture and poikilitic texture.
  - (iv) Gravity fault and thrust fault.
  - (v) Central type and fissure type of eruptions.
  - (vi) P-wave and S-wave.
3. (a) Describe with diagram any two depositional features each for running water and glacier. (10)
- (b) What is aquifer? Explain different types of aquifer. (5)
- (c) What is unconformity? Explain different types of unconformity with diagram (5)
4. (a) Explain different types of structure found in metamorphic rocks. (10)
- (b) Explain concordant and discordant bodies with example. (5)
- (c) Give an account of electrical resistivity method of subsurface investigation. (5)
5. (a) Explain theory of plate tectonics with suitable diagram. (5)
- (b) Write principle of stratigraphy? Discuss the use of Deccan trap rocks as building stone. (5)
- (c) Define soil creep. Mention the factors that influence landslides. (5)
- (d) Give an account of clastic and non-clastic type of sedimentary rocks with example. (5)

6. (a) On a horizontal tunnel a bed of sandstone is dipping southwards. If the width of outcrop is 240 m and the vertical thickness is 200 m then determine the true thickness and amount of inclination of the sandstone bed. (6)
- (b) Describe various geological considerations for site selection of a tunnel. (8)
- (c) Calculate the core recovery and RQD from the following data. Also mention your opinion. (6)
- Run is 1.5 m

No of samples	Length of sample (in cm)	Nature of joints (lower end of the core)
1	10	N
2	6	N
3	12	N
4	13	N
5	6	N
6	2	M
7	5	M
8	5	M
9	3	N
10	17	M
11	16	N
12	3	M
13	2	M
14	4	N
15	40	N

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