

(3 Hours)

Total Marks :80

- N.B. (1) Question No. 1 is compulsory.
 (2) Attempt any three questions form remaining five questions.
 (3) Draw neat sketches wherever necessary.
 (4) Figures to the right indicate full marks.
 (5) Answer each and every question combined manner in order.
1. (a) Identify the following minerals with the help of physical properties **5**
 (i) Prominent conchoidal fracture, cleavage absent, colour grey, hardness 7
 (ii) Lamellar form, luster pearly, colour white greenish, hardness 1
 (iii) Rhombohedral form, cleavage three sets, hardness 3
 (iv) Barrel shape, colour reddish grayish, hardness 9
 (v) Crystalline form, flesh colour, hardness 6
- (b) Name the following **5**
 (i) Two volcanic rocks
 (ii) S shape river
 (iii) Metamorphism of limestone
 (iv) Rock contains silica percent more than 66
 (v) Discontinuity between crust and mantle
- (c) Write the difference between **10**
 (i) Streak and strike
 (ii) Primary rock and secondary rock
 (iii) Aquifer and Aquifuge
 (iv) Rock forming mineral and ore mineral
 (v) Conglomerate and breccia
2. (a) Describe in detail the geological action of wind with different types of landforms. **10**
 (b) State different types of weathering with examples. **10**
3. (a) Describe parts of fold . Explain various types of fold. **10**
 (b) What is plate tectonics? **5**
 (c) Describe the principles of stratigraphy. **5**
4. (a) Describe various structures of igneous rock. **10**
 (b) Explain metamorphic agents and various types of metamorphism. **10**
5. Write short notes on (any five) **20**
 (i) Angular unconformity and nonconformity
 (ii) Stratification and Lamination
 (iii) Glacial valley and Hanging valley
 (iv) Perched water table
 (v) Porphyritic and poikilitic texture
 (vi) Gneissose structure and schistose structure.
 (vii) Elastic rebound theory
 (viii) Volcanic products

6. (a) Describe various suitable and unsuitable geological structures while construction of dam. **6**
- (b) On a horizontal tunnel a bed of sandstone dips 30° eastwards. Its true thickness is 200 m. Determine its vertical thickness and width of outcrop in the tunnel. **6**
- (c) What is core recovery and RQD? Calculate the same from the given data, Run = 2 m **8**

No of samples	Length of samples (in cm)	Nature of the lower end of the core sample
1	20	N
2	15	N
3	10	N
4	7	M
5	2	M
6	9	N
7	9	N
8	3	N
9	11	N
10	12	N
11	6	M
12	7	M
13	20	N
14	30	N
15	10	N