

SEMESTER III

MAJOR COURSE – MJ 4 STRUCTURAL GEOLOGY & GEOMORPHOLOGY MODEL QUESTION PAPER – SET 3

Full Marks: 75 Time: 3 Hours

GROUP A

Q1. Choose the correct answer. (5 × 1 = 5)

1. Which representation primarily shows elevation by contours? (a) Geological section (b) Topographic map (c) Structural formula (d) Stereonet
2. Differential stress may produce: (a) Folds and faults (b) Only weathering (c) Only dunes (d) Only beaches
3. A fold with limbs dipping away from the axial region is generally a/an: (a) Syncline (b) Anticline (c) Trough (d) Graben
4. A thrust fault is characterized by: (a) Low-angle reverse movement (b) Downward hanging-wall movement (c) Wind deposition (d) Erosion
5. Which landform is strongly associated with coastal wave erosion? (a) Moraine (b) Sea cliff (c) Yardang (d) Drumlin

Q2. Answer any ONE. (5 marks)

- (a) Explain the concept of dip and strike and their significance in structural geology.
- (b) Write a short note on the geomorphic significance of tectonics.

Q3. Answer any ONE. (5 marks)

- (a) Write a short note on the geomorphic significance of tectonics.
- (b) Explain the concept of dip and strike and their significance in structural geology.

GROUP B

Answer any FOUR questions. Each carries 15 marks. (4 × 15 = 60)

- Q4.** Explain stress, strain and the different types of deformation in rocks. Discuss brittle and ductile behaviour. **(15 marks)**
- Q5.** Describe folds in detail, including fold elements, morphology, classification and methods of recognition. **(15 marks)**
- Q6.** Discuss faults and fault-plane solutions. Explain geological and geomorphological criteria for recognizing faults. **(15 marks)**
- Q7.** Explain foliation, lineation and axial-plane cleavage, emphasizing their tectonic significance. **(15 marks)**
- Q8.** Discuss endogenic and exogenic processes and explain their role in landscape evolution. Include sea-level change. **(15 marks)**
- Q9.** Describe major geomorphic features of large-scale topography, including ocean basins, mountain ranges and the Himalayas. **(15 marks)**
- Q10.** Explain the processes of weathering and mass movement and their associated landforms. **(15 marks)**
- Q11.** Discuss river erosion, transportation and deposition and explain the development of major fluvial landforms. **(15 marks)**
- Q12.** Explain glacial and periglacial processes and landforms. Add a note on the geomorphic work of glaciers. **(15 marks)**
- Q13.** Discuss aeolian and coastal processes and landforms and their importance in landscape development. **(15 marks)**