

SEMESTER III

MAJOR COURSE – MJ 4 STRUCTURAL GEOLOGY & GEOMORPHOLOGY MODEL QUESTION PAPER – SET 2

Full Marks: 75 Time: 3 Hours

GROUP A

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

1. The horizontal line on an inclined rock surface is called: (a) Dip (b) Strike (c) Plunge (d) Rake
2. Which term describes deformation of a rock caused by applied stress? (a) Strain (b) Density (c) Porosity (d) Weathering
3. A down-folded structure is called: (a) Anticline (b) Syncline (c) Dome (d) Horst
4. A fault in which the hanging wall moves downward is a: (a) Reverse fault (b) Thrust fault (c) Normal fault (d) Strike-slip fault
5. Which process is most closely associated with sand dunes? (a) Glaciation (b) Aeolian action (c) Wave action (d) Karstification

Q2. Answer any ONE. (5 marks)

- (a) Explain stress–strain relationships and the concept of rock deformation.
- (b) Write a short note on outcrop patterns of different geological structures.

Q3. Answer any ONE. (5 marks)

- (a) Write a short note on outcrop patterns of different geological structures.
- (b) Explain stress–strain relationships and the concept of rock deformation.

GROUP B

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

Q4. Explain stress and strain in rocks and discuss the factors controlling rock deformation. (15 marks)

Q5. Discuss fold morphology and the mechanics of folding. Explain buckling and flexural-slip folding. (15 marks)

Q6. Explain the geometric and genetic classification of faults. Discuss criteria used to recognize faults in the field. (15 marks)

Q7. Describe the origin of foliation and lineation and explain their relationship with major structures. (15 marks)

Q8. Discuss the origin of drainage systems and explain how tectonics influences drainage development. (15 marks)

Q9. Describe the major morphological features of the Earth's surface and explain the significance of geomorphic processes. (15 marks)

Q10. Explain weathering processes and associated landforms. Distinguish between physical and chemical weathering. (15 marks)

Q11. Discuss fluvial processes and landforms with suitable diagrams. (15 marks)

Q12. Describe glacial, periglacial and coastal landforms and explain the processes responsible for their formation. (15 marks)

Q13. Write an essay on aeolian processes and landforms. Add a note on long-term landscape development. (15 marks)