

**B.E. CONSTRUCTION ENGINEERING SECOND YEAR FIRST SEMESTER – 2023**

**Subject: ENGINEERING GEOLOGY**

**Time: 3 Hrs**

**Full Marks: 70**

**Attempt Question No. 1 and any six (6) from the rest.**

1. Write short notes on: 5 x 2
  - a) Wave Ripple and Current ripple marks in rock
  - b) Vesicular structures
  - c) Epicenter and Hypocenter of Earthquake
  - d) Roapy lava and Block lava
  - e) Interlocking and Clastic Texture
  
2. How can the interior structure of the Earth be revealed from the seismological study? What are the different layers present with in the earth? 4 + 6
  
3. With the help of block diagrams briefly describe the different plate boundaries in the earth? Write major supporting evidences for the continental drift theory? 6 + 4
  
4. What is a mineral? How it is different from a rock? What is a mineraloid? Why are the silicate minerals more common in crust? Is the mineral-cleavage related to crystal structure? Justify your answer. 2 + 1 + 1 + 2 + 4
  
5. What is fold? With the help of suitable diagram define fold axis, fold axial plane, transverse profile, hinge line, inflection line, extrados and intrados surface. What are anticlinal and synclinal folds? Define foliation with suitable sketch? 2 + 3 + 3 + 2
  
6. What are the types of graded bedding? How would you determine paleo-current direction from the trough cross-stratification in sedimentary rock? Explain your answer with sketches. Is current ripple a good indicator of top-bottom criteria? Justify your answer. 3 + 5 + 2
  
7. What are the possible hazards associated with earthquake? How an earthquake can be predicted temporally? 5 + 5
  
8. What is a shear zone? Do you expect shear zones at microscopic scale? How would you identify shear zone in rock? What are the suitable kinematic indicators of shear sense? 2 + 1 + 4 + 3
  
9. What are the major controlling parameters of a mass-wasting event? What are the different kinds of slope movements? Write the classification of landslide on the basis of water content and velocity. 3 + 3 + 4
  
10. Describe briefly the principal types of dams. What types of geological investigations are carried out in tunneling projects? 2 + 2 + 1 + 3 + 2