Ex/CON/BS/B/Geo/TS/216/2024

B.E. Const. Engg. 2nd Year 1st Semester Exam. 2024
Subject: Engineering Geology

Full Marks: 100 **Time: 3 hours**

Attempt question no. 1 and any 4 form the rest.

1. Write short notes on (**any 4**): 5 x 4

   a) Most destructive seismic waves
   b) Mass wasting in cold climate
   c) Epicenter and Hypocenter of Earthquake
   d) Types of fault based on the relative movement of foot- and hanging- wall
   e) Features for identifying ductile shear zone in rock
   f) Tabular and non-tabular igneous bodies

2. With the help of seismological study how the interior structure of the Earth can be revealed? What are the different layers present with in the earth?

   12 + 8

3. With the help of suitable diagrams briefly describe the different plate boundaries in the earth? Write major supporting evidences for the continental drift theory?

   12 + 8

4. Classify igneous rocks based on their chemical composition. With the help of suitable diagram, briefly discuss the effect of cooling rate on the grain size in igneous rock. Discuss the role of 'Pressure', 'Temperature' and 'Fluid' in metamorphism. Draw P-T diagram showing various metamorphic facies. Write down the sequence of metamorphic facies with increasing grade of metamorphism (high, medium and low).

   4 + 4 + 6 + 3 + 3

5. Describe the processes involved from 'deriving sediments' to 'forming a sedimentary rock'. What is the difference between 'bed' and 'laminae'. Describe various types of 'bedding' with suitable diagrams. Write a short note on 'cross-stratifications' with suitable diagrams.

   10 + 2 + 4 + 4

6. Describe briefly the principal types of dams. What types of geological investigations are carried out in tunneling projects?

   8 + 12

7. What is mineral? Write a short note on Mohs scale of hardness. How does the cleavage, schistosity and foliation in rock differ? Write 6 (six) major physical properties of mineral with examples by which a mineral can be identified in hand specimen.

   4 + 3 + 3 + 10