PAPER ID-410331

Roll No:

B.TECH
(SEM-VII) THEORY EXAMINATION 2021-22
GEOLOGY AND SOIL MECHANICS

Time: 3 Hours   *Total Marks: 70*

Note: **1.** Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. **Attempt *all* questions in brief.**   2 x 7 = 14
   a. Define Streak of mineral.
   b. Genetically classify rocks into three major rock groups.
   c. Define Dip and strike of a bed.
   d. Enlist the different earthquake zones of India
   e. Show parts of fold with neat sketch.
   f. Name the important clay minerals.
   g. Enlist the index properties of soil.

SECTION B

2. **Attempt any *three* of the following:**   7 x 3 = 21
   a. Classify igneous rock on the basis of its mode of origin.
   b. Illustrate stratification and lamination bedding of rocks.
   c. Landslide may be manmade and natural. Analyse.
   d. Evaluate the importance of geological investigations in civil engineering.
   e. Explain Boussineqs & Westergaards theories for stresses due to applied loads

SECTION C

3. **Attempt any *one* part of the following:**   7 x 1 = 7
   (a) Explain about the various structures found in sedimentary rocks with neat sketch.
   (b) Explain the various engineering properties of importance for use of rocks as construction material

4. **Attempt any *one* part of the following:**   7 x 1 = 7
   (a) Classify the various types of faults with neat sketches
   (b) Write a detailed note on various types of joints and its causes

5. **Attempt any *one* part of the following:**   7 x 1 = 7
   (a) What do you understand by earthquake? Discuss the causes and classification of earthquake
   (b) What are Landslides? Discuss about the types of Landslides, its causes and preventive measures.

6. **Attempt any *one* part of the following:**   7 x 1 = 7
   (a) "Type of rocks present greatly influences the site selection of dam". Evaluate the statement critically
   (b) Evaluate the geological factors which should be taken into account in selecting site for Dams and reservoirs

7. **Attempt any *one* part of the following:**   7 x 1 = 7
   (a) Discuss the merits and demerits of Direct Shear Test.
   (b) Discuss and classify the soil as per IS classification system.