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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**
- Define Streak of mineral.
 - Genetically classify rocks into three major rock groups.
 - Define Dip and strike of a bed.
 - Enlist the different earthquake zones of India
 - Show parts of fold with neat sketch.
 - Name the important clay minerals.
 - Enlist the index properties of soil.

SECTION B

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

SECTION C

- 3. Attempt any one part of the following:** **7 x 1 = 7**
- Explain about the various structures found in sedimentary rocks with neat sketch.
 - 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**
- Classify the various types of faults with neat sketches
 - Write a detailed note on various types of joints and its causes
- 5. Attempt any one part of the following:** **7 x 1 = 7**
- What do you understand by earthquake? Discuss the causes and classification of earthquake
 - 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**
- “Type of rocks present greatly influences the site selection of dam”. Evaluate the statement critically
 - 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**
- Discuss the merits and demerits of Direct Shear Test.
 - Discuss and classify the soil as per IS classification system.