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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(CE) (2011 Onwards) (Sem.-3)
ROCK MECHANICS & ENGINEERING
Subject Code : BTCE-302
Paper ID : [A1114]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

SECTION-A**1. Write briefly :**

- a) What is mechanical weathering?
- b) Describe any three physical properties of Hematite.
- c) With neat sketch, show a plane having $30^{\circ}S$.
- d) Define focus.
- e) Which is the softest substance and what is its hardness?
- f) Differentiate between sample and specimen.
- g) What is Rock bolting?
- h) "*Propagation velocity of longitudinal stress wave in rocks depends upon many factors*". Enumerate any three factors.
- i) Distinguish between Horst and Graben.
- j) Show sketch of Gravity Dam.

SECTION-B

2. Explain the geological work of Glaciers.
3. What are plutonic, hypabyssal and volcanic igneous rocks?
4. How do topographical features control civil engineering projects such as tunnels, high ways and reservoirs?
5. Give an account of different types of folds found in nature.
6. Name types of grouting. Which one is most effective for a ground comprising fractured rocks containing enough sizeable voids?

SECTION-C

7. What are static and dynamic methods for evaluation of elastic constants of rocks? Discuss in brief.
8.
 - a) What are objectives of Rock mass classification?
 - b) Explain why all cracks in the rock mass do not propagate always in their direction of crack initiation.
9. Write short notes :
 - a) Bore Hole Test
 - b) Importance of Engineering Geology.