CBCS SCHEME

USN | | | | | | | | | | |

15MN64

Sixth Semester B.E. Degree Examination, Dec.2018/Jan.2019
Rock Mechanics

Time: 3 hrs. Max. Marks: 80

Note: Answer any FIVE full questions, choosing one full question from each module.

Module-1

1 Discuss on :
a. Application of Rock mechanics in mining **(08 Marks)**
b. Barton's shear strength of joints. **(08 Marks)**

OR

2 Write short notes on :
a. Description and importance of joints in mining **(08 Marks)**
b. Hemispherical projection of discontinuities **(08 Marks)**

Module-2

3 Explain with a suitable diagram, Mohr's circle of stress in two dimensional stress field? What are its applications and limitations? **(16 Marks)**

OR

4 Discuss on :
a. Elasto-plastic behaviour of rocks **(08 Marks)**
b. Stress-strain relationship (two dimensional) **(08 Marks)**

Module-3

5 Explain with suitable diagrams how uni-axial compressive strength of a rock sample is determined as per ISRM suggested methods. **(16 Marks)**

OR

6 Why tensile strength of rocks is determined indirectly? Explain with a suitable diagram, the procedure to determine the tensile strength of rock. **(16 Marks)**

Module-4

7 Explain with a line diagram, "flat jack" method of insitu stress measurement. What are its limitations? **(16 Marks)**

OR

8 Explain with suitable diagram, Mohr's Griffith theory of rock failure. What are its limitations? **(16 Marks)**

Module-5

9 Explain with suitable figures, the actual behaviour of "Elasico-viscous", "Firmo-viscous" and "perfectly plastic" substances by Rheological models. **(16 Marks)**

OR

10 Explain with suitable diagram the procedure to determine the dynamic elastic constant of a rock. **(16 Marks)**

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