

Roll No.

Total Pages : 02

BT-7/M-20

37050

ROCK MECHANICS

CE-419N/CE-419E

Time : Three Hours]

[Maximum Marks : 75

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit.

Unit I

1. Explain phenomena and theoretical analysis for the failure of brittle rocks. **15**
2. Write short notes on any *three* of the following :
 - (i) Brazilian test
 - (ii) Shear box test
 - (iii) Uniaxial compression strength test
 - (iv) Punch shear test. **15**

Unit II

3. What are the various methods for creating Hydraulic Fracturing ? Also name the chemicals that are used in the fracturing process. **15**

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4. Explain the working of plate load test with the help of neat sketch. Also draw load settlement curves. **15**

Unit III

5. What is the principle of rock bolting ? Discuss different types of rock bolting. **15**
6. Describe any *two* tests that are used to check the quality of natural rocks. **15**

Unit IV

7. Explain Bieraurmer's theory for vertical loading of tunnel. **15**
8. Explain the basic design and principle of Tunnel in Rocks. **15**