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
            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* 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 Hydraullic
Fracturing ? Also name the chemicals that are used in the
fracturing process.   **15**

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 Bieraumer's theory for vertical loading of tunnel. **15**

8. Explain the basic design and principle of Tunnel in Rocks. **15**