

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (Civil Engg.) (Sem.-6)

ROCK MECHANICS

Subject Code : PECE-602F-18

M.Code : 79399

Date of Examination : 05-07-22

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS 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 have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Write briefly :

- a) What is the importance of rock mechanics?
- b) Define the theory of brittle failure.
- c) What is bore hole?
- d) Define the term: Bieramer and Kommerel.
- e) Discuss hydraulics fracturing technique.
- f) What do you understand by pressure tunnels in rocks?
- g) What is the use of photoelastic stress meter?
- h) Discuss Relief technique of stress evaluation in field.
- i) What is uniaxial compression strength of rock samples?
- j) Define ultrasonic pulse method.

SECTION-B

2. What do you mean by R.Q.D.? How do we classify rocks on the basis of R.Q.D.
3. What are the various direct and indirect methods of finding tensile strength of rocks?
4. Explain Protodyakanov theory.
5. Explain basic design and principles of tunnels in rocks.
6. Explain Terzaghi's theory related to the pressure on roof of tunnels.

SECTION-C

7. How do we classify rocks on the basis of geological, litho logical and engineering purpose?
8. What do you mean by rock bolting? What is the principle of rock bolting? What are various types of rock bolting?
9. Write short notes on the following laboratory testing of rocks :
 - a) Shear box test
 - b) Punch shear test
 - c) Brazilian test.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.