

Dec.-23-0489

CE-605 (Engineering Geology and Rock Mechanics)

B.Tech. 6th (CBCS)

Time : 3 Hours

Max. Marks : 60

*The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.*

**Note :** Attempt five questions in all selecting one question each from section A, B, C, D and section E is compulsory.

#### SECTION - A

1. (a) Discuss the importance of rocks as a construction material. (6)
- (b) What is weathering and what are the effects of weathering on engineered structures? (4)
2. Explain in detail about the different classification systems of rock. (10)

#### SECTION - B

3. State importance of folds for the engineering projects. (10)
4. What do you understand by term fold? How are they formed. Describe their main characteristics with sketches. (10)

#### SECTION - C

5. Describe the classification system of rock mass proposed by Deer and Miller and Q-system classification. (10)
6. Discuss about the methods for determination of tensile strength test of rock. (10)

#### SECTION - D

7. Explain the behaviour of intact rock under uniaxial compression. Discuss about the test carried out for determining compressive strength of rock mass. (10)
8. Discuss about the methods used for improving the rock quality and stability in dam. (10)

#### SECTION - E (Compulsory)

9. Answer the following:
  - (a) What is rock bolting?
  - (b) Explain formation of plutonic rocks.
  - (c) What is river meandering phenomenon?
  - (d) What is meant by hardness of rock?
  - (e) What is RQD?
  - (f) What is rock mass rating system?
  - (g) Draw the stress-strain curve for rock mass.
  - (h) What is guniting?
  - (i) What is meant by brittleness of rock?
  - (j) Discuss about the scale effect on strength of rock. (10×2=20)