

Roll No. ....

Total Pages : 03

002401

May 2025

B.Tech. (Civil) (Fourth Semester)

Engineering Geology (PCC-CED204)

Time : 3 Hours]

[Maximum Marks : 75

**Note :** It is compulsory to answer all the questions (1.5 marks each) of Part A in short. Answer any *four* questions from Part B in detail. Different sub-parts of a question are to be attempted adjacent to each other.

### Part-A

1. (a) What are the different types of rocks and how are they classified ?
- (b) What factors determine the engineering properties of rocks ?
- (c) How do weathering and erosion affect rock formation and stability ?
- (d) What are the key physical properties of minerals that affect their use in construction ?

- (e) What is alkali-aggregate reaction and how does it affect concrete structures ?
- (f) What are pozzolanic materials ?
- (g) What are the causes of landslides ?
- (h) How are earthquakes classified ?
- (i) What are the seismic zones of India ?
- (j) What are the engineering properties of building stones and how are they tested ?

1.5×10=15

### Part-B

- 2. (a) What is the importance of geological knowledge in the planning and execution of civil engineering projects ? 10
- (b) What factors determine the suitability of rocks as engineering materials ? 5
- 3. (a) What is weathering and how does it affect the physical properties of rocks ? 5
- (b) What is stratification in rocks and how does it affect the behavior of rock masses in engineering ? 10

- 4. What are the primary physical properties of minerals and why are they important in engineering ? 15
- 5. (a) What are outcrops and how do they relate to topography in geological studies ? 5
- (b) What are folds and faults and how do they affect the engineering behavior of rock masses ? 10
- 6. (a) What are joints in rocks and how do they affect the behavior of rock masses in engineering projects ? 10
- (b) What are pozzolanic materials and how do they improve the properties of concrete ? 5
- 7. How do rock-forming minerals influence the strength and durability of rocks ? Explain in detail. 15