PG Even Semester Exam, May 2025

Earth Science

4th Semester

COURSE NO. ESCC-653

[Engineering Geology and Geo-hazards]

Full Marks : 70
Pass Marks : 28

Time : 3 hours

The figures in the margin indicate full marks for the questions

Answer five questions, taking one from each Unit

UNIT-I

1. Discuss the critical role of engineering geology in the civil construction and mining industry 14
2. Write short notes on the following: 7+7=14
   a. Engineering properties of rock
   b. Discuss in detail the different stages of geological investigation for civil engineering projects

UNIT-II

3. What is a dam? Explain its key components with a neat sketch. Classify dams based on design, materials, and purpose, providing suitable examples for each category. 2+4+8=14

4. Write Short note on the following: 7+7=14
   a. Geotechnical investigations for tunnel alignments.
   b. Geological considerations for evaluation of reservoir sites.

UNIT-III

5. Discuss in detail environmental geologic mapping. Also, provide an explanatory note on environmental changes caused by natural and anthropogenic factors. 7+7=14

6. Explanatory note on the following. 7+7=14
   a. Environment impact analysis of highway.
   b. Environment impact assessment methods (EIA).

UNIT-IV

7. Write a short note on the slope instability for landslide. What are the different causes for triggering landslide? Write a note on the classification of landslide. 4+5+5=14

8. a. Write a descriptive note on the different types of floods. 8
   b. Write short note on the following: 3x2=6
      i. Category of flood by disaster management team.
      ii. Flood plain zoning.

UNIT-V

9. Write a descriptive note on causes and prediction of earthquake. 8+6=14

10. a. Enumerate different geological conditions which influence earthquake. 7
    b. Write a note on seismicity and seismic hazard. 7

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