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Question Paper Code: ACE003



INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

B.Tech III Semester End Examinations (Regular) - December, 2017

Regulation: IARE – R16

ENGINEERING GEOLOGY

(Civil Engineering)

Time: 3 Hours

Max Marks: 70

Answer ONE Question from each Unit

All Questions Carry Equal Marks

All parts of the question must be answered in one place only

UNIT – I

1. (a) Distinguish between weathering and erosion. Give details on the types of mechanical weathering and add a note on its engineering importance. [7M]
- (b) Write a note on the topographic features developed by physical geology agents for erosion and depositional landforms. [7M]
2. (a) Describe the terms : [8M]
 - i. Wedge Action of Ice
 - ii. Exfoliation
 - iii. Denudation and
 - iv. Solution as related to weathering.
- (b) Explain the importance of Geology in Civil Engineering. [6M]

UNIT – II

3. (a) Give out the physical properties, chemical composition and uses of [7M]
 - i. Feldspar
 - ii. Hornblende
 - iii. Bauxite
- (b) Describe the important physical properties useful for the ready identification of minerals. [7M]
4. (a) What approach would you show for the following rocks to identify them by their various geological properties, classification and engineering uses? [7M]
 - i. Granite
 - ii. Basalt
 - iii. Dolerite
- (b) Define secondary or aquatic rocks? Give brief account on the primary structures exhibited by secondary rocks. [7M]

UNIT – III

5. (a) Explain a fault and joint structure and mention the different types of folds associated in the structural geology. [7M]
(b) Discuss the zone of aeration and zone of saturation available in the vertical distribution of groundwater movement. [7M]
6. (a) Identify the causes of landslides and also add a note on their stabilization of slopes. [7M]
(b) Write descriptive on the following notes. [7M]
 i. Water table
 ii. Yield of a well
 iii. Types of groundwater

UNIT – IV

7. (a) Enumerate the geological investigations to be carried out in the selection of dam for construction. [7M]
(b) What is Geophysical investigation? Give details on the principles of geophysical study by radiometric method with its uses. [7M]
8. (a) What are the factors controlling the water tightness of a Reservoir created after Dam construction. [7M]
(b) Describe an Arch dam with a neat figure. When do you go for it? [7M]

UNIT – V

9. (a) Explain the concept and geological investigations to be carried out for overbreak of the proposed tunnel. [7M]
(b) How would you determine the water problems occur at the tunnel site? [7M]
10. (a) Describe the impact of Dipping beds, Folds and Facults in tunneling. [7M]
(b) What is over break? When it occurs? [7M]

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