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INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)
(Dundigal-500043, Hyderabad)

B.Tech III SEMESTER END EXAMINATIONS (REGULAR / SUPPLEMENTARY) - FEBRUARY 2023

Regulation:UG20

ENGINEERING GEOLOGY

(CIVIL ENGINEERING)

Time: 3 Hours

Max Marks: 70

Answer ALL questions in Module I and II

Answer ONE out of two questions in Modules III, IV and V

All Questions Carry Equal Marks

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

MODULE – I

- (a) Describe the scope of geology in civil engineering. Mention various branches pertaining to geology.
[BL: Understand| CO: 1|Marks: 7]
- (b) Write about weathering and elaborate its types. Differentiate between physical and chemical weathering with examples.
[BL: Understand| CO: 1|Marks: 7]

MODULE – II

- (a) List out the various physical properties of minerals and explain in detail about the hardness of a mineral.
[BL: Understand| CO: 2|Marks: 7]
- (b) Classify silicate minerals with respect to its chemical composition. Describe the composition of the crust and its dominant minerals.
[BL: Understand| CO: 2|Marks: 7]

MODULE – III

- (a) How landslides are caused and mention various measures through which they can be prevented?
[BL: Understand| CO: 3|Marks: 7]
- (b) Discuss about strike and dip of a rock. Explain the process of water cycle with a neat diagram.
[BL: Understand| CO: 3|Marks: 7]
- (a) Outline the civil engineering considerations in seismic areas with reference to building construction.
[BL: Understand| CO: 4|Marks: 7]
- (b) Write the causes and effects of earthquakes. Enumerate some of Indian earthquakes and explore their possible mode of origin.
[BL: Understand| CO: 4|Marks: 7]

MODULE – IV

- (a) What is electric resistivity method and seismic refraction method? List out their importance.
[BL: Understand| CO: 5|Marks: 7]
- (b) Mention the factors contributing for the success of a reservoir. Explain the principle and working model of gravity and magnetic methods.
[BL: Understand| CO: 5|Marks: 7]
- (a) Elucidate the geological considerations relating to the construction of gravity and arch type of concrete dam.
[BL: Understand| CO: 5|Marks: 7]

- (b) Distinguish between dam and reservoir. Describe geological factors influencing water tightness and life of reservoirs. [BL: Understand| CO: 5|Marks: 7]

MODULE – V

7. (a) Describe the geologic conditions for the construction of tunnels in sedimentary terrains. [BL: Understand| CO: 6|Marks: 7]
- (b) What are the factors influencing the selection of site for tunnels? Explain the importance of geological structures for successful tunneling. [BL: Understand| CO: 6|Marks: 7]
8. (a) Summarize the deteriorating effects produced in the ground during the excavation of tunnels. [BL: Understand| CO: 6|Marks: 7]
- (b) List the effects of tunneling on the ground. Describe the tunneling in rocks and significance of subsidence over old mines. [BL: Understand| CO: 6|Marks: 7]

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