

**INSTITUTE OF AERONAUTICAL ENGINEERING**

(Autonomous)

Dundigal-500043, Hyderabad

B.Tech III SEMESTER END EXAMINATIONS (REGULAR) - FEBRUARY 2022

Regulation:UG-20

ENGINEERING GEOLOGY**Time: 3 Hours****(CE)****Max Marks: 70****Answer ALL questions in Module I and II****Answer ONE out of two questions in Modules III, IV and V**

NOTE: Provision is given to answer TWO questions from among one of the Modules III / IV / V

All Questions Carry Equal Marks**All parts of the question must be answered in one place only****MODULE – I**

1. (a) Explain the physical factors in the process of weathering. Differentiate physical and chemical weathering. [7M]
- (b) Elucidate the process associated with river, wind and sea and describe its engineering significance. [7M]

MODULE – II

2. (a) List out the classification of silicate minerals with respect to its chemical composition. Explain in detail. [7M]
- (b) Write petrographic characteristics of sedimentary rocks:
i) Conglomerate ii) Basalt iii) Limestone iv) Sandstone v) Shale [7M]

MODULE – III

3. (a) Explain the process of water cycle with a neat diagram. Enlist the types of ground water. [7M]
- (b) How landslides are caused? Mention various measures through which they can be prevented. [7M]
4. (a) Write about strike and dip and outcrop of a rock. Explain the morphology of a fold. [7M]
- (b) Classify and describe the different types of faults in rocks and explain how they are recognized in the field. [7M]

MODULE – IV

5. (a) What are the purposes of dams? Explain the various types of dams with examples. [7M]
- (b) Explain the geological considerations for successful construction of dams in view of rocks, structures and ground water point of view with sketches. [7M].
6. (a) What are the major considerations of a reservoir? Briefly explain about water tightness and influencing factors of reservoirs. [7M]
- (b) Describe the seismic wave refraction method for two layer case with horizontal interface. [7M]

MODULE – V

7. (a) Explain the geologic conditions for the construction of tunnels in sedimentary terrains. [7M]
(b) Describe the purpose of tunneling and effects of tunneling on the ground. [7M]
8. (a) Write about diversion tunnels, pressure tunnels and underground mining. Distinguish pressure tunnels and diversion tunnels. [7M]
(b) Describe the effects on inclined beds of tilted strata at the tunnel site. [7M]

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