

2026

Geology (Core)

Paper Code : GL-CE-6344

Paper Name : Engineering Geology

Time : 2 hours

Full Marks : 50

The figures in the margin indicate full marks for the questions.

1. Choose the correct option : 1×4=4
- a) Which engineering property of rock refers to the ratio of the volume of voids to the total volume of the rock mass ?
- i) Void ratio ii) Porosity
iii) Degree of saturation iv) Specific gravity
- b) The time a rock mass may remain unsupported in a tunnel is called its -
- i) Bearing capacity ii) Bridging capacity
iii) Shear strength iv) Bearing time
- c) The uniaxial compressive strength of intact rock material is a foundational parameter used for -
- i) RMR ii) RQD
iii) RSR iv) All of the above
- d) When excavation proceeds in a vertical or near vertical direction and is open to the surface only at the top, it is called a ____.
- i) Shaft ii) Drift
iii) Raise iv) Invert
2. Answer the following questions : 2×3=6
- a) What is Reservoir Triggered Seismicity ?

Contd.

- b) What do you understand by the term spillway ?
- c) Write your concept on 'Q' system.
3. Write short notes on **any two** of the following : 5×2=10
- a) Grouting & rock bolting.
- b) Indian standard soil classification system.
- c) Seepage and leakage of Dam.
- d) Rock Mass rating.
4. Answer **any three** of the following : 10×3=30
- a) What are the different types of Dam ? Describe briefly about the Geophysical investigations associated with construction of a Dam. 4+6=10
- b) Discuss the essential geological investigations associated with the construction of tunnels, emphasizing the identification of potential hazard zones. 7+3=10
- c) Describe briefly about the Role of Engineering geologists in planning, design and construction of major man-made structural features. 3+4+3=10
- d) What are intact rocks ? Write a note on Rock aggregates and their significance as construction material. 3+7=10
- e) Write a note on Engineering Properties of Rock. 10
- f) Write notes on : 5+5=10
- i) Liquefaction
- ii) Relation of rock strength with geological structures.

