USN | | | | | | | | | | | BCV303
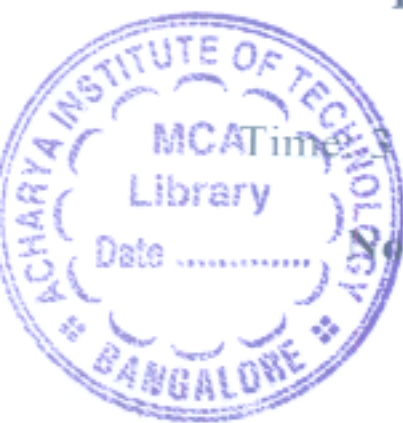
Third Semester B.E/B.Tech. Degree Examination, June/July 2025
Engineering Geology

Time: 3 hrs.   Max. Marks:100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.
3. Draw neat sketches wherever necessary.

			M	L	C
		Module – 1			
1	a.	With a neat labeled diagram, explain the earth's internal dynamics.	10	L2	CO1
	b.	What is Seismic Waves? Explain the types of characteristics of seismic waves with neat sketches.	10	L3	CO1
		OR			
2	a.	Define Landslide. Explain the types of landslides and its remedial measures.	10	L3	CO1
	b.	What is Tsunami? How it causes and explain their mitigation measures of management?	10	L3	CO1
		Module – 2			
3	a.	Define Mineral. Describe in detail the physical properties of mineral and their engineering uses.	10	L3	CO2
	b.	Explain the classification of different groups of rocks with examples.	10	L3	CO2
		OR			
4	a.	Add a note on the following group of minerals : i) Industrial minerals ii) Rock forming minerals	10	L3	CO2
	b.	Make list out of requirement of good building stones and explain in brief.	10	L3	CO2
		Module – 3			
5	a.	Define Weathering of rock. Explain the types of rock weathering.	12	L3	CO3
	b.	What is Soil? Explain the soil profile with neat sketch.	8	L3	CO3
		OR			
6	a.	Write four processes which are responsible for chemical weathering of rocks.	10	L3	CO3
	b.	Give an outline of the different classification and types of soils available in India.	6	L3	CO3
	c.	Explain in brief the soil structure.	4	L3	CO3

Module – 4

7	a.	Give a brief account of geological considerations to be considered in selecting a suitable sites for the construction of proposed dam and reservoir site.	12	L3	CO3
	b.	A coal seam is exposed on horizontal ground. It dips $30°$ towards west. Its width of out crop is 360m. Determine its true thickness and vertical thickness by using graphical method and mathematical methods, with procedure (scale – 1 cm = 100m).	8	L3	CO3

OR

8	a.	What is Fold? Name the different types of folds with neat sketches.	10	L3	CO3
	b.	Three boreholes are sunk at 3 points of an equilateral triangle whose sides are 480m each. P is west of Q and R is north of midpoint PQ. Boreholes PQ and R reach the upper surface of a rich sandstone bed at 100m , 220m and 260m depth respectively. i) Determine the altitude (Dip and Strike) of the sandstone bed. ii) Another bore hole is sunk at S, midpoint of QR. Determine at what depth the borehole S reaches the same sandstone bed. (Note : Scale – 1cm = 100m ; 1 gradient = 1cm).	10	L3	CO3

Module – 5

9	a.	Explain the water bearing properties of Igneous , Sedimentary and metamorphic rocks.	10	L3	CO4
	b.	How do you consider rock as aquifers? With a neat sketch, explain briefly the types of aquifers.	10	L3	CO4

OR

10	a.	Outline the functions of Electrical resistivity meter with neat sketch.	10	L3	CO4
	b.	Discuss the seismic studies. Explain briefly the Refraction method and Reflection method.	10	L3	CO4

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