

CBCS SCHEME



USN

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

BCV303

Third Semester B.E/B.Tech. Degree Examination, June/July 2024 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.

Module – 1			M	L	C
1	a.	With neat sketch, explain internal structure of earth based on different discontinuities and add a note on its composition.	10	L2	CO2
	b.	Discuss the following terms : i) Focus and Epicenter ii) P and S waves.	4	L1	CO2
	c.	Define plate tectonics. Describe plate boundaries with their land forms.	6	L2	CO1
OR					
2	a.	Define land slide. Discuss its impact and preventive measures.	10	L2	CO1
	b.	Explain seismic zones of India as per Indian standard code and give safety measures on seismic resistant structure.	10	L3	CO2
Module – 2					
3	a.	Explain requirement of good building stones with suitable rock examples.	4	L2	CO3
	b.	Define mineral and rock. Explain 'light dependent' properties of minerals with an example.	8	L2	CO3
	c.	Differentiate between texture and structure in rocks and discuss textures in igneous rocks.	8	L3	CO2
OR					
4	a.	Briefly explain how igneous, sedimentary and metamorphic rocks are formed and enumerate their broad classification with suitable example.	6	L1	CO2
	b.	Discuss physical/geological and engineering properties along with their uses as building material for the following : i) Granite ii) Quartzite.	6	L3	CO3
	c.	Write the physical properties and industrial uses of two minerals each in the following group : i) Carbonate ii) Oxide.	8	L2	CO3
Module – 3					
5	a.	Define soil and its formation. Explain soil profile.	6	L2	CO2
	b.	Discuss chemical weathering and add a note on effect of weathering on monumental rocks.	8	L2	CO2
	c.	Define insitu and drifted soil. Enumerate the types of residual soil.	6	L3	CO3

OR

6	a.	With neat trilinear diagram explain soil texture and describe engineering classification of soil based on grain size.	10	L3	CO2
	b.	Explain mechanical and biological weathering.	10	L2	CO2

Module – 4

7	a.	Discuss the formation of folds and faults and a note on their engineering significance.	6	L2	CO2
	b.	Define dam and explain its types. Discuss selection of dam site, in folded and faulted rocks.	8	L3	CO3
	c.	A bed of limestone has a maximum dip of 30° along $N15^\circ E$. Find the amount of apparent dip along $N30^\circ W$. State the strike.	6	L3	CO3

OR

8	a.	Define dip, strike and outcrop with neat sketch explain recognition of any two geological structures in field.	10	L3	CO2
	b.	Three boreholes are sunk at three points of an equilateral triangle whose sides are 240 meters each. P is West of Q and R is North of midpoint between PQ, Boreholes P, Q and R reach the upper surface of a rich coal seam at 30 μ t, 70 μ t and 90 μ t depths respectively. i) Determine the attitude (Dip and strike) of the coal seam ii) One more borehole is proposed at S exactly at the centre of the triangle. Determine at what depth the new borehole 'S' reaches the upper bedding plane of the coal seam.	10	L4	CO3

Module – 5

9	a.	Define Aquifer and explain its types.	6	L2	CO4
	b.	Explain electric resistivity method and its applications in civil engineering and add a note on components, accessories of resistivity meter.	10	L3	CO4
	c.	Give a brief account on occurrence of ground water in igneous rocks.	4	L2	CO4

OR

10	a.	Define permissibility and explain factors affecting permeability.	6	L2	CO4
	b.	Explain seismic method, its types and application in civil engineering projects.	10	L3	CO4
	c.	Explain any two sedimentary rocks suitable for ground water occurrence.	4	L2	CO4
