

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV/DEC 2025***Sixth Semester**Civil Engineering***AG3601 - Engineering Geology***Regulations - 2021**Duration : 3 Hrs**Maximum : 100 Marks***PART - A (ANSWER ALL QUESTIONS) (Marks 10*2=20)**

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
1.	In what circumstances the coral reefs are formed and which geological process is associated with this formation?	L2	1	2
2.	What is the theory of plate tectonics?	L1	1	2
3.	Discuss the physical properties and uses of hornblende.	L1	2	2
4.	Compare the relative strengths of sandstone and quartzite.	L2	2	2
5.	Draw a neat diagram of recumbent folds.	L2	3	2
6.	How is GSI different from other rock mass classification systems like RMR and RQD-system?	L1	3	2
7.	Classify the various types of aerial photographs.	L2	4	2
8.	How can subsurface logging be enhanced to provide more real-time and high-resolution data for civil engineering projects?	L1	4	2
9.	List out the geological problems occurring after dam construction?	L2	5	2
10.	What policies or building code innovations are needed to prepare megacities for cascading disasters like a tsunami following an offshore earthquake?	L1	5	2

PART - B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a Write in detail about the structure of the earth and its composition with a neat diagram.	L2	1	16
	Or			
	b How can collaboration between hydrogeologists and civil engineers lead to more resilient groundwater-sensitive infrastructure? Explain with a case study.	L2	1	16
12.	a Inspect how coal and petroleum has originated. Give detailed account of their occurrence in India.	L2	2	16
	Or			
	b How would you differentiate between igneous rock, metamorphic rock and sedimentary rock on the basis of structure & texture? Explain.	L2	2	16

13.	a	i	Classify folds in rocks and describe each type in detail.	L3	3	8
		ii	Give an account of the role of folds in the design of dams and tunnels.	L3	3	8
			Or			
	b	i	In what ways can RQD-informed design reduce material usage and improve sustainability in deep excavation projects? Explain.	L3	3	8
		ii	Describe how can RMR variability across a site be used in probabilistic modeling to optimize foundation and slope support design under uncertain conditions?	L3	3	8
14.	a		Identify the uses of remote sensing applications in hydrogeological and mining investigation studies.	L3	4	16
			Or			
	b		Explain in detail about resistivity methods and wenner configuration and also add note on its civil engineering applications.	L3	4	16
15.	a		Lithological and structural aspects are the primary considerations for the selection of suitable sites and design of tunnels. Using appropriate case studies or examples explain the validity of this statement.	L4	5	16
			Or			
	b		Discuss the use of geospatial techniques for disaster management. Enumerate your answer with case studies on landslide mitigation adopted in the Himalayan region.	L4	5	16