

Code: 23BS1401

**II B.Tech - II Semester – Regular Examinations - MAY 2025****ENGINEERING GEOLOGY  
(CIVIL ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

Note: 1. This question paper contains two Parts A and B.

2. Part-A contains 10 short answer questions. Each Question carries 2 Marks.

3. Part-B contains 5 essay questions with an internal choice from each unit. Each Question carries 10 marks.

4. All parts of Question paper must be answered in one place.

BL – Blooms Level

CO – Course Outcome

**PART – A**

		BL	CO
1. a)	Why is geology essential for assessing the suitability of land for construction projects?	L1	CO1
b)	What are the two main types of weathering?	L1	CO1
c)	Define a mineral and a rock.	L1	CO2
d)	List the physical properties of minerals.	L1	CO2
e)	What are joints in geology?	L1	CO2
f)	What is Outcrop?	L1	CO2
g)	What is the cone of depression?	L1	CO3
h)	How does the scale help in understanding the impact of seismic events?	L2	CO4
i)	What are the geological considerations that need to be taken into account when selecting a dam site?	L1	CO5
j)	What are the primary purposes of tunneling in geological engineering?	L1	CO5

## PART – B

			BL	CO	Max. Marks
UNIT-I					
2	Discuss the main branches of geology and explain their significance in understanding the Earth's processes. How do these branches interrelate and what are their practical applications?		L3	CO1	10 M
OR					
3	a)	What is the process of weathering and how does it affect the physical and chemical properties of rocks?	L2	CO1	5 M
	b)	Investigate how the physical and chemical weathering of rocks contributes to soil formation.	L3	CO1	5 M
UNIT-II					
4	Explain the importance of field studies, laboratory techniques and petrographic methods in the classification and study of minerals and rocks.		L4	CO2	10 M
OR					
5	a)	Discuss the properties of mica and its significance in rocks like schist and gneiss.	L2	CO2	5 M
	b)	Explain the structure, texture and forms of sedimentary rocks such as shale, sandstone and limestone.	L3	CO2	5 M

<b>UNIT-III</b>					
6	a)	Describe the methods used to measure strike and dip in the field.	L2	CO2	5 M
	b)	Discuss how faults are identified and studied in civil engineering. How do engineers assess the risks associated with fault zones?	L3	CO2	5 M
<b>OR</b>					
7		Discuss the significance of understanding folds and faults in civil engineering projects such as dam construction, tunnels and highways. How can the presence of these geological structures impact the safety and stability of engineering projects?	L4	CO2	10 M
<b>UNIT-IV</b>					
8	a)	Describe the various techniques used in groundwater exploration. What are the advantages of each method?	L2	CO3	5 M
	b)	What are the effects of earthquakes on the built environment? Discuss the precautionary measures that should be taken when constructing buildings in seismic areas.	L3	CO4	5 M
<b>OR</b>					
9	a)	Classify landslides and discuss their causes and effects.	L2	CO4	5 M
	b)	Discuss the principles and applications of seismic methods in geophysical studies.	L3	CO4	5 M

UNIT-V						
10	Discuss the different types of dams and their purposes. How do the geological conditions of a site influence the choice of dam type?			L2	CO5	10 M
OR						
11	a)	Describe the role of geological surveys in ensuring the safety and sustainability of a dam and its associated reservoir.	L2	CO5	5 M	
	b)	What is the expected life span of a reservoir? Discuss the geological factors that can contribute to the deterioration or extension of a reservoir's life.	L3	CO5	5 M	