

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT

(Autonomous Institute under Visvesvaraya Technological University, Belagavi)

USN

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

Course Code

2	2	C	V	3	3
---	---	---	---	---	---

Third Semester B.E. Degree Examinations, January 2025

ENGINEERING GEOLOGY

Duration: 3 hrs

Max. Marks: 100

Note: 1. Answer any FIVE full questions choosing ONE full Question from each Module.

2. Missing data, if any, may be suitably assumed

<u>Q. No</u>	<u>Question</u>	<u>Marks</u>	<u>(RBTL:CO:PI)</u>
<u>Module-1</u>			
1.	a. What is geology? Discuss the importance of geological concepts in civil engineering practice.	08	(2 :1 : 1.2.1)
	b. Explain the types and causes of Volcanic eruption.	12	(2 :1 : 1.2.1)
(OR)			
2.	a. What is a cyclone? Explain the causes of cyclone.	08	(2 :1 : 1.2.1)
	b. Explain the types and effects of an earthquake.	12	(2 :1 : 1.2.1)
<u>Module-2</u>			
3.	a. Explain the following properties with respect to minerals: (i) Hardness (ii) Lustre (iii) Colour (iv) Streak (v) Specific gravity	10	(2 :2 : 1.2.1)
	b. Write the physical properties of following minerals: (i) Flint (ii) Calcite (iii) Mica (iv) Talc (v) pyrite	10	(2 :2 : 1.2.1)
(OR)			
4.	a. What are igneous rocks? Explain different forms of igneous rocks with a neat sketch.	10	(2 :2 : 1.2.1)
	b. Write the descriptions of the rocks: (i) Granite (ii) sandstone (iii) Slate (iv) Amyloidial Basalt	10	(2 :2 : 1.2.1)
<u>Module-3</u>			
5.	a. What is soil? With a neat labelled diagram explain soil profile.	10	(2 :3 : 1.2.1)
	b. Define weathering. Explain the different types of weathering.	10	(2 :3 : 1.2.1)
(OR)			
6.	a. Explain the different soil minerals and soil structures.	10	(2 :3 : 1.2.1)
	b. Explain the classification of soil by Grain size.	10	(2 :3 : 1.2.1)
<u>Module-4</u>			
7.	a. Explain Dip and strike, out crop with neat sketch.	06	(2 :4 : 1.2.1)
	b. Mention the engineering consideration of fold, fault and unconformities.	06	(2 :4 : 1.2.1)

- c. What are tunnels? Explain important geological factors taken into account while tunnelling. 08 (2 :4 : 1.2.1)

(OR)

8. a. Explain the importance of faults in civil engineering structures. 06 (2 :4 : 1.2.1)
- b. What are unconformities? With a neat labelled diagram Explain types of unconformities. 06 (2 :4 : 1.2.1)
- c. A sandstone bed dips 45^0 towards East and having width of outcrop is 250 m. Calculate its true thickness and vertical thickness geometrically and mathematically. 08 (2 :4 : 1.2.1)

Module-5

9. a. Briefly explain hydrological cycle. 06 (2 :5 : 1.2.1)
- b. Define aquifer. Explain types of aquifers with neat sketch. 06 (2 :5 : 1.2.1)
- c. Explain artificial recharge of ground water by various methods. 08 (2 :5 : 1.2.1)

(OR)

- 10 a. What are the factors affecting the coefficient of permeability. 06 (2 :5 : 1.2.1)
- b. Discuss the application of GPS in civil engineering projects. 06 (2 :5 : 1.2.1)
- c. Explain in detail ground water exploration by electric resistivity method. 08 (2 :5 : 1.2.1)

** ** *