

Basavarajeswari Group of Institutions  
**BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
(Autonomous Institute under Visvesvaraya Technological University, Belagavi)

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Course Code 

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Third Semester B.E. Degree Examinations, September 2024

**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>(RBTLCO:PI)</u>
<b><u>Module-1</u></b>			
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 effects of an earthquake.	12	(2 : 1 : 1.2.1)
<b>(OR)</b>			
2.	a. What is a landslide? Explain the causes of landslides.	10	(2 : 1 : 1.2.1)
	b. Explain the causes of Tsunami and effects of Cyclones.	10	(2 : 1 : 1.2.1)
<b><u>Module-2</u></b>			
3.	a. Discuss Mineral Hardness, Luster, Colour, Streak and Specific Gravity.	10	(2 : 2 : 1.2.1)
	b. Write the physical properties of following minerals. (i) Rock crystal (ii) Orthoclase (iii) Biotite mica (iv) Hematite	10	(2 : 2 : 1.2.1)
<b>(OR)</b>			
4.	a. What are Sedimentary rocks? With neat sketch explain structures of sedimentary rocks.	10	(2 : 2 : 1.2.1)
	b. Write the descriptions of the following rocks: (i) Dunite (ii) Limestone (iii) Slate (iv) Vesicular Basalt	10	(2 : 2 : 1.2.1)
<b><u>Module-3</u></b>			
5.	a. What is soil? With a neat sketch soil profile.	10	(2 : 3 : 1.2.1)
	b. Define weathering. Explain the types of weathering.	10	(2 : 3 : 1.2.1)
<b>(OR)</b>			
6.	a. Explain the different soil minerals with neat sketch.	10	(2 : 3 : 1.2.1)
	b. Explain the classification of soil by grain size.	10	(2 : 3 : 1.2.1)
<b><u>Module-4</u></b>			
7.	a. Mention the engineering consideration of Fold, Fault and Unconformities.	06	(2 : 4 : 1.2.1)

**Note: (RBTLC - Revised Bloom's Taxonomy Level: CO - Course Outcome: PI - Performance Indicator)**

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|-----------|---|-----------|-----------------------|
| <b>b.</b> | Explain the importance of folds in civil engineering structures.                            | <b>06</b> | <b>(2 :4 : 1.2.1)</b> |
| <b>c.</b> | What are Tunnels? Explain important geological factors taken into account while tunnelling. | <b>08</b> | <b>(2 :4 : 1.2.1)</b> |

**(OR)**

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|-----------|---|-----------|-----------------------|
| <b>8.</b> | <b>a.</b> With neat sketch, explain dip and strike.   | <b>06</b> | <b>(2 :4 : 1.2.1)</b> |
|           | <b>b.</b> What are joints? With a neat labelled diagram, explain types of joints.                             | <b>06</b> | <b>(2 :4 : 1.2.1)</b> |
|           | <b>c.</b> What is dam? Explain geological consideration in selecting a suitable site for construction of dam. | <b>08</b> | <b>(2 :4 : 1.2.1)</b> |

### **Module-5**

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

**(OR)**

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|-----------|--|-----------|-----------------------|
| <b>10</b> | <b>a.</b> What are the factors affecting the coefficient of permeability.          | <b>06</b> | <b>(2 :5 : 1.2.1)</b> |
|           | <b>b.</b> Discuss the application of GPS in civil engineering projects.            | <b>07</b> | <b>(2 :5 : 1.2.1)</b> |
|           | <b>c.</b> Explain in detail ground water exploration by seismic refraction method. | <b>07</b> | <b>(2 :5 : 1.2.1)</b> |

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