

Enrollment No.....



Faculty of Engineering  
End Sem (Odd) Examination Dec-2022  
CE3CO03 / CE3CO18 Engineering Geology  
Programme: B. Tech Branch/Specialisation: CE

**Duration: 3 Hrs.****Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

- Q.1 i. The Mohorovicic discontinuity demarcates: **1**  
 (a) The inner core from the outer core  
 (b) The outer core from the mantle  
 (c) The crust from the mantle  
 (d) The upper layer of the crust from the lower layer of the crust
- ii. In a natural soil profile, the rock zone will be: **1**  
 (a) At the surface (b) Somewhere in the middle  
 (c) At the base (d) Absent
- iii. Ore minerals generally have specific gravity \_\_\_\_\_ than the non-metallic minerals: **1**  
 (a) Higher (b) Lower (c) Same (d) None of these
- iv. An interfacial angle is: **1**  
 (a) An external angle between a given face and the extension of the adjoining face  
 (b) An internal angle between two adjoining faces  
 (c) An angle between any twin faces on the same side of a crystal  
 (d) None of these
- v. Plutonic rocks are always formed from the cooling of - **1**  
 (a) The lava under water  
 (b) Magma just below the surface of the earth  
 (c) Lava over the surface of the earth  
 (d) Magma at great depths below the surface of the earth
- vi. Gabbro is a type of: **1**  
 (a) Igneous rock (b) Sedimentary rock  
 (c) Metamorphic rock (d) None of these

P.T.O.

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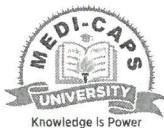
- vii. An exposure of solid rock on the surface of the earth is called- **1**  
 (a) Outcrop (b) Dip  
 (c) Strike (d) None of these
- viii. Plunge is the angle which is determined in a fold with respect to- **1**  
 (a) Axial plane of the fold (b) Axis of the fold  
 (c) Strike of the fold (d) None of these
- ix. An aquifer is a rock formation which is- **1**  
 (a) Porous and not necessarily permeable  
 (b) Porous and essentially permeable  
 (c) Highly porous and impermeable  
 (d) None of these
- x. GPS stands for- **1**  
 (a) Global Processing System (b) Global Positioning System  
 (c) Geographic Positional System (d) Geographic Processing System
- Q.2 i. Write a short note on Nebular Hypothesis. **3**  
 ii. How the soils are formed in nature? Give a detailed classification of soils. **7**
- OR iii. Explain the Internal Structure of the Earth as revealed by the seismological evidence with neat sketches. **7**
- Q.3 i. What is Mohs hardness scale? Also draw the hardness table. **2**  
 ii. Write about the various forms of a crystal and Elements of Symmetry. **8**
- OR iii. Define crystal system and describe the Monoclinic System with axial diagram and mineral example. **8**
- Q.4 i. Write a short note Thermal Metamorphism. **3**  
 ii. Define Sedimentary rock? Explain the classification of Sedimentary rocks. **7**
- OR iii. What is stratigraphy? Describe the Vindhyan System of Indian Stratigraphy in its essential details. **7**
- Q.5 i. Briefly describe the various elements of a fold. **4**  
 ii. Discuss the classification of joints and their significance in civil engineering. **6**

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- OR iii. Explain the process of Faulting and various types of faults. **6**
- Q.6 Attempt any two:
- i. Write a short note on Aquifer and their types. **5**
- ii. What is Remote Sensing? How it acts as a powerful tool for civil engineering work. **5**
- iii. Explain the geological investigation required in tunnelling operations. **5**

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# Scheme of Marking

 <p>Knowledge Is Power</p>	<p style="text-align: center;"><b>Faculty of Engineering</b>  <b>End Sem (Odd) Examination Dec-2022</b>  <b>CE3CO18 Engineering Geology</b></p> <p>Programme: B.Tech.      Branch/Specialisation: CE</p>		
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**Note: The Paper Setter should provide the answer wise splitting of the marks in the scheme below.**

Q.1	i)	The Mohorovicic discontinuity demarcates (c) The crust from the mantle	1
	ii)	In a natural soil profile, the rock zone will be (c) At the base	1
	iii)	Ore minerals generally have specific gravity ___ than the non-metallic minerals (a) Higher	1
	iv)	An interfacial angle is (b) An internal angle between two adjoining faces	1
	v)	Plutonic rocks are always formed from the cooling of (d) Magma at great depths below the surface of the earth.	1
	vi)	Gabbro is a type of (a) Igneous rock	1
	vii)	An exposure of solid rock on the surface of the earth is called (a) Outcrop	1
	viii)	Plunge is the angle which is determined in a fold with respect to (b) Axis of the fold	1
	ix)	An aquifer is a rock formation which is (b) Porous and essentially permeable	1
	x)	GPS stands for (b) Global Positioning System	1
Q.2	i.	Explanation	3
	ii.	Process      3 marks Classification      4 marks	7
	OR	iii.	
		Diagram      2 marks Explanation      5 marks	7
Q.3	i.	Definition      1 marks	2

		Table	1 marks	
	ii.	Forms of crystal Elements of symmetry	4 marks 4 marks	8
OR	iii.	Definition of crystal system Explanation of monoclinic system Axial diagram Mineral examples	2 marks 4 marks 1 marks 1 marks	8
Q.4	i.	Explanation note		3
	ii.	Definition      2 marks Classification      5 marks		7
OR	iii.	Definition      2 marks Distribution      2.5 marks Classification      2.5 marks	<i>Vindhyan system detail</i> <i>5 marks</i>	7
Q.5	i.	Minimum 4 elements	4 marks	4
	ii.	Classification      4 marks Significance      2 marks		6
OR	iii.	Process      2 marks Types      4 marks		6
Q.6	i.	Definition      1 marks Types      4 marks		5
	ii.	Definition      2 marks Explanation      3 marks		5
	iii.	Explanation	<i>5 marks</i>	5

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