

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

## **GUJARAT TECHNOLOGICAL UNIVERSITY**

**BE - SEMESTER-III (NEW) EXAMINATION – WINTER 2023**

**Subject Code:3132201**

**Date:18-01-2024**

**Subject Name:Introduction to Mining**

**Time:10:30 AM TO 01:00 PM**

**Total Marks:70**

**Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

**MARKS**

<b>Q.1</b>	(a) Discuss the mineral resources of Gujarat and India.	<b>03</b>
	(b) Describe the various unit operations involved in surface and underground mining.	<b>04</b>
	(c) Explain the various stages in the life of a mine.	<b>07</b>
<b>Q.2</b>	(a) Describe the drillability of rocks.	<b>03</b>
	(b) Discuss the comparison between surface and underground mining.	<b>04</b>
	(c) Explain the various transportation equipments & its application in surface and underground mining.	<b>07</b>
<b>OR</b>		
	(c) Explain the various loading equipments & its application in surface and underground mining.	<b>07</b>
<b>Q.3</b>	(a) Explain the pitting & trenching in details.	<b>03</b>
	(b) Explain the various instruments used for core recovery.	<b>04</b>
	(c) Explain the properties of explosive.	<b>07</b>
<b>OR</b>		
<b>Q.3</b>	(a) Explain the different methods of drilling.	<b>03</b>
	(b) Explain the classification of surface and underground mining.	<b>04</b>
	(c) Explain the factors affecting selection of explosive.	<b>07</b>
<b>Q.4</b>	(a) Discuss the various equipments and accessories used in drilling.	<b>03</b>
	(b) Explain deflection of borehole and difficulties faced during boring.	<b>04</b>
	(c) Explain the development of surface mining.	<b>07</b>
<b>OR</b>		
<b>Q.4</b>	(a) Define directional drilling. Discuss the objectives of directional drilling.	<b>03</b>
	(b) Explain the interpretation of borehole data and borehole logging.	<b>04</b>
	(c) Explain the development of underground mining.	<b>07</b>
<b>Q.5</b>	(a) Describe the principle and methods of prospecting and exploration.	<b>03</b>
	(b) Explain the different types of drill bits and its selection.	<b>04</b>
	(c) Explain the basic concept of blasting.	<b>07</b>

**OR**

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|------------|---|-----------|
| <b>Q.5</b> | <b>(a)</b> Discuss the principle of boring.   | <b>03</b> |
|            | <b>(b)</b> Discuss the different drilling patterns used in surface and underground mining.                | <b>04</b> |
|            | <b>(c)</b> Discuss the basic concepts of mine closure & its importance in surface and underground mining. | <b>07</b> |

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