

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER– III (NEW) EXAMINATION – SUMMER 2022****Subject Code:3132201****Date:15-07-2022****Subject Name:Introduction to Mining****Time:02:30 PM TO 05:00 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) Define: <ol style="list-style-type: none"> <li>i. Mining</li> <li>ii. Mineral</li> <li>iii. Ore</li> </ol>	<b>03</b>
	(b) Write a note on stages of mine.	<b>04</b>
	(c) Write a note on mineral resources of India.	<b>07</b>
<b>Q.2</b>	(a) Classify types of mines.	<b>03</b>
	(b) Write a short note on phases of a mine.	<b>04</b>
	(c) Compare opencast mining to underground mining.	<b>07</b>
	<b>OR</b>	
	(c) Explain the factors involved in choosing the type of mining method.	<b>07</b>
<b>Q.3</b>	(a) Write a note on: <ol style="list-style-type: none"> <li>i. Prospecting and exploration</li> <li>ii. Reconnaissance</li> </ol>	<b>03</b>
	(b) Explain types of drilling methods and its applicability in the field.	<b>04</b>
	(c) Explain the methods of prospecting and exploration.	<b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(a) Differentiate between drilling and boring.	<b>03</b>
	(b) Explain the applicable conditions for directional drilling.	<b>04</b>
	(c) Explain the procedure and importance of: <ol style="list-style-type: none"> <li>i. Borehole logging</li> <li>ii. Interpretation of borehole data</li> </ol>	<b>07</b>
<b>Q.4</b>	(a) List types of drill bits.	<b>03</b>
	(b) Explain various criteria considered while selecting a drill bit.	<b>04</b>
	(c) Write a note on drillability of rocks.	<b>07</b>
	<b>OR</b>	
<b>Q.4</b>	(a) Write the purpose of the following blasting accessories: <ol style="list-style-type: none"> <li>i. Explosives</li> <li>ii. Detonator</li> <li>iii. Booster</li> <li>iv. Stemming</li> <li>v. Detonating cord</li> <li>vi. Exploder</li> </ol>	<b>03</b>
	(b) Write a note on loading equipments used in underground mines.	<b>04</b>
	(c) Explain the properties of explosives.	<b>07</b>

- Q.5**
- (a) Give six examples of explosives with its applicable conditions. **03**
  - (b) Write a note on:
    - i. Mine closure **04**
    - ii. Loading and transportation
  - (c) Write the steps involved in development of surface mine. **07**

**OR**

- Q.5**
- (a) Define:
    - i. Stripping ratio **03**
    - ii. VOD
    - iii. Boxcut
  - (b) Write a note on transportation equipments used in surface mines. **04**
  - (c) Write the steps involved in development of an underground mine. **07**

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