

# GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI EXAMINATION – SUMMER 2025

Subject Code: 3162211

Date: 30-05-2025

Subject Name: Drilling Blasting Technology

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

Q.1*	(a)	What do you mean by drilling? Write its purposes in mining.	03
	(b)	Describe various type of permitted explosive.	04
	(c)	Explain the types of detonators and its uses with neat sketch.	07
Q.2	(a)	How do you select an explosive for blasting in mines?	03
	(b)	Explain the fundamentals of percussive & rotary percussive drilling method.	04
	(c)	Explain rock breakage mechanism under percussive drilling method.	07
OR			
	(c)	Explain the importance and construction of magazine, discuss about storage of explosive.	07
Q.3	(a)	Identify the factors/parameters that influence the selection of drills.	03
	(b)	Explain the basic mechanism of blasting.	04
	(c)	What is mechanics of drilling? Compare Top hammer drilling with Down the hole hammer drilling in detail.	07
OR			
Q.3	(a)	Compare low explosive with high explosive.	03
	(b)	Explain general test procedure of explosive.	04
	(c)	What is secondary blasting? Explain the types of secondary blasting.	07
Q.4	(a)	Explain Livingstone theory of crater formation.	03
	(b)	Write a short note on Water-jet drilling.	04
	(c)	Describe physical properties, chemical composition and application of emulsion explosive.	07
OR			
Q.4	(a)	How Interpretation of borehole data is done?	03
	(b)	Explain the causes and remedies of ground vibration.	04
	(c)	Write a brief note on 'long hole blasting' and 'vertical crater retreat blasting' method	07
Q.5	(a)	What are the causes of air over pressure in open cast mines?	03
	(b)	How burden and spacing is estimated? Explain with one example.	04
	(c)	What do you mean by detonator factor? Also explain the blast design for horizontal drivages in metal mines.	07
OR			
Q.5	(a)	Explain the Initiation patterns using in blasting.	03
	(b)	What do you mean by blasting-off-solid?	04
	(c)	What do you understand by exploration drilling? Explain Various types of exploratory drills and their applicability.	07

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