Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE – SEMESTER- V EXAMINATION-SUMMER 2023

Subject Code: 3152201 Date: 26/06/2023

Subject Name: Mine Machinery II

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
Q.1	**(a)**	Explain the importance of efficient pumping system in a mine.	**03**
	(b)	Compare centrifugal and reciprocating pump.	**04**
	(c)	Explain the construction of centrifugal pumps.	**07**
Q.2	**(a)**	Define angle of fleet. Explain the importance of fleet angle.	**03**
	(b)	Write a note on torque-time calculation of winders.	**04**
	(c)	Explain different electrical braking on winders. Describe any one method in detail.	**07**
		OR	
	(c)	Explain different mechanical braking on winders. Describe any one method in detail.	**07**
Q.3	**(a)**	Give the advantages of multirope winding.	**03**
	(b)	Write a short note on: i. Air vessel ii. Winding drum	**04**
	(c)	Explain Ward Leonard speed control system with neat, labeled diagram.	**07**
		OR	
Q.3	**(a)**	Classify mechanical loaders.	**03**
	(b)	Explain creepers and tipplers.	**04**
	(c)	Compare drum winding and koepe winding.	**07**
Q.4	**(a)**	Classify pit top and pit bottom layouts.	**03**
	(b)	Explain types of guides.	**04**
	(c)	Explain run round arrangement using a neat diagram. Also give its advantages and disadvantages.	**07**
		OR	
Q.4	**(a)**	Classify pit top and pit bottom layouts.	**03**
	(b)	Write a note on tensioning arrangement of belt conveyor.	**04**
	(c)	Using a neat diagram explain the construction of belt conveyor.	**07**
Q.5	**(a)**	Briefly explain types of cages used in underground mines.	**03**
	(b)	Explain types of guides.	**04**
	(c)	Explain the working of continuous miner.	**07**
		OR	
Q.5	**(a)**	Write a note on gathering arm loader.	**03**
	(b)	Write a note on stage loaders.	**04**
	(c)	Explain types, construction and working of shearer using labeled diagram.	**07**

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