Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI (NEW) - EXAMINATION – SUMMER 2017

Subject Code: 2162207 **Date: 08/05/2017**

Subject Name: Mine Ventilation

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.**

			MARKS
Q.1		**Short Questions**	**14**
	1	Write Boyle's Low.	
	2	Which chemicals are used in PS Detector?	
	3	Which chemicals are used in Hopcalite Detector?	
	4	Define: Motive Column	
	5	How many percentages present of inflammable gas in Degree-II gassy mine?	
	6	What is the use of Flame Safety Lamp?	
	7	What is the use of Pitot Tube?	
	8	Which point is most important when Natural Ventilation is used?	
	9	What do you meant by Mechanical Ventilation?	
	10	Write use of Centrifugal Fan.	
	11	What is the use of Exhaust fan?	
	12	What do you meant by Air Splitting?	
	13	Give the use of Booster Fan.	
	14	What is the use of Airlock in underground mine?	
Q.2	**(a)**	Write note on composition of atmospheric air.	**03**
	(b)	Define different types of damps in underground mines.	**04**
	(c)	Describe characteristics, properties and their physiological effect of Carbon Monoxide.	**07**
		OR	
	(c)	Describe characteristics, properties and their physiological effect of Methane.	**07**
Q.3	**(a)**	Write note on Methane Layering.	**03**
	(b)	Describe Gas Blowers in detail.	**04**
	(c)	Describe P.S.Detector, Hopcalite Detector and Hoolamite Detector.	**07**
		OR	
Q.3	**(a)**	Write note on Methane Drainage.	**03**
	(b)	Describe Automatic Firedamp Detector.	**04**
	(c)	Describe Wheat Stone Bridge principle with neat and clean sketch.	**07**
Q.4	**(a)**	Define Humidity and Relative Humidity.	**03**
	(b)	Write note on Barometer used in mines.	**04**
	(c)	Describe working of Natural Ventilation with neat sketch.	**07**
		OR	
Q.4	**(a)**	Write note on Air Conditioning in mines.	**03**
	(b)	Explain Whirling Hygrometer with their working in underground mines.	**04**
	(c)	List out different fans used in mines. Explain any one with sketch.	**07**
Q.5	**(a)**	Define Homotropal and Antitropal Ventilation.	**03**
	(b)	Write note on Coward's Diagram.	**04**
	(c)	Explain Ventilation Survey in detail.	**07**

OR

Q.5	**(a)**	Define the terms: (1) Doors (2) Regulator (3) Airlocking	**03**
	(b)	Explain Ascentional and Descentional Ventilation in detail.	**04**
	(c)	Describe Anemometer with their working in mines.	**07**

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