

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VI (NEW) EXAMINATION – WINTER 2018****Subject Code:2162207****Date:04/12/2018****Subject Name:Mine Ventilation****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.

		MARKS
<b>Q.1</b>	(a) Explain the Toxicity of Gases in Mines.	<b>03</b>
	(b) Differentiate the axial screw fan and centrifugal fan.	<b>04</b>
	(c) Explain mine atmospheres and its composition.	<b>07</b>
<b>Q.2</b>	(a) Write the application of Centrifugal Fan.	<b>03</b>
	(b) Define the terms: (1) Doors (2) Regulator.	<b>04</b>
	(c) Explain Natural ventilation with neat sketch.	<b>07</b>
	<b>OR</b>	
	(c) Describe Chezy's and Atkinson's equations.	<b>07</b>
<b>Q.3</b>	(a) Write a short note on Pitot Tube.	<b>03</b>
	(b) Describe Multi Gas Detector in brief.	<b>04</b>
	(c) Write a note on Air locking in underground mines.	<b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(a) Write the application of Exhaust fan.	<b>03</b>
	(b) Write a note on Coward's Diagram.	<b>04</b>
	(c) Explain Hopcalite detector and Hoolamite tube.	<b>07</b>
<b>Q.4</b>	(a) Write note on Metabolism and Respiration process of human beings.	<b>03</b>
	(b) Describe Automatic Firedamp Detector.	<b>04</b>
	(c) Explain Ascentional and Descentional Ventilation in detail.	<b>07</b>
	<b>OR</b>	
<b>Q.4</b>	(a) Define Homotropical and Antitropical Ventilation.	<b>03</b>
	(b) Describe Wheat Stone Bridge principle with neat sketch.	<b>04</b>
	(c) Explain kata thermometer in brief with neat and clean sketch.	<b>07</b>
<b>Q.5</b>	(a) Write the physiological effect of Carbon Monoxide (CO).	<b>03</b>
	(b) Describe air conditioning in mines.	<b>04</b>
	(c) Describe characteristics, properties and their physiological effect of Methane (CH <sub>4</sub> ).	<b>07</b>
	<b>OR</b>	
<b>Q.5</b>	(a) Write the physiological effect of CH <sub>4</sub> .	<b>03</b>
	(b) Describe characteristics, properties of Carbon Monoxide (CO).	<b>04</b>
	(c) Define relative humidity. Explain hygrometer with neat and clean sketch.	<b>07</b>

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