

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VI (NEW) EXAMINATION – SUMMER 2022****Subject Code:3162204****Date:08/06/2022****Subject Name:Mine Hazards****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**

<b>Q.1</b>	(a) Explain how fire can produce in mines and its effect in mines.	<b>03</b>
	(b) Discuss the procedure for investigations after an explosion.	<b>04</b>
	(c) List out different types of fire extinguisher. Explain any one with neat sketch.	<b>07</b>
<b>Q.2</b>	(a) Discuss the factor affecting the limit of explosibility in fire damp.	<b>03</b>
	(b) List out classes of fires and explain all in brief.	<b>04</b>
	(c) Explain spontaneous heating, its causes and detection in underground mines.	<b>07</b>
<b>OR</b>		
	(c) Explain the reason behind underground fires and its preventive measures.	<b>07</b>
<b>Q.3</b>	(a) Discuss the classification of rescue apparatus.	<b>03</b>
	(b) What do you mean by fire? Explain its causes and prevention in surface mines.	<b>04</b>
	(c) Explain causes and precautionary measures in mine inundations.	<b>07</b>
<b>OR</b>		
<b>Q.3</b>	(a) Discuss the illumination standards in mining area given by DGMS.	<b>03</b>
	(b) Explain the dust sampling methods.	<b>04</b>
	(c) Explain the emergency preparedness and response system.	<b>07</b>
<b>Q.4</b>	(a) Discuss the common types of safety lamps & their uses and limitations.	<b>03</b>
	(b) Discuss the different methods for reopening sealed off area in mines.	<b>04</b>
	(c) List out different types of rescue equipment used in mines. Explain any two with neat sketches.	<b>07</b>
<b>OR</b>		
<b>Q.4</b>	(a) Discuss the applications of dust sampling apparatus.	<b>03</b>
	(b) Describe the physical and chemical characteristics of coal liable to spontaneous heating.	<b>04</b>
	(c) Explain rescue and recovery work in connection with mine fire.	<b>07</b>
<b>Q.5</b>	(a) List out the different types of illumination devices.	<b>03</b>
	(b) Discuss the precautions to be taken while approaching old workings.	<b>04</b>
	(c) Explain the mitigation measures taken to reduce dust generation in mines.	<b>07</b>
<b>OR</b>		
<b>Q.5</b>	(a) Discuss the uses of fire extinguisher.	<b>03</b>
	(b) Explain the method of dewatering a waterlogged working.	<b>04</b>
	(c) Explain the design and construction of water dams.	<b>07</b>

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