

Seat No./Enrollment No.: _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BACHELOR OF ENGINEERING – SEMESTER 6 – EXAMINATION – SUMMER 2026

Subject Code: 3162204

Date: 29/05/2026

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.**

- Q.1** (a) Name the locations or places of portable fire extinguishers provided in underground mines. **03**
- (b) Discuss the salient features of coward's diagram with neat sketch. **04**
- (c) Explain any two fire extinguishers in details with neat sketch. **07**
- Q.2** (a) List out the causes of mine fires. **03**
- (b) Discuss the symptoms of spontaneous combustion. **04**
- (c) List out classes of fires and explain all in brief. **07**
- OR
- Q.2** (c) Discuss the methods of sealing off the fire in underground coal mines. **07**
- Q.3** (a) List out the factors affecting the limit of explosibility in firedamp. **03**
- (b) What do you understand by Graham's Ratio? Explain with example. **04**
- (c) What is stone dust barrier? Explain the types of stone dust barriers with neat sketch. **07**
- OR
- Q.3** (a) What steps should be taken in a mine to prevent explosion of firedamp? **03**
- (b) State the precautions to be taken when approaching old working containing water. **04**
- (c) Discuss the main causes of accidents resulting in inundation in a mine. **07**
- Q.4** (a) Write a short note on safety dams. **03**
- (b) Explain the method of dewatering a waterlogged working. **04**
- (c) Write a brief note on "Self rescuer" with neat sketch. **07**
- OR
- Q.4** (a) List out the devices used for dust measurement. **03**
- (b) Write a note on gas mask with neat sketch. **04**
- (c) Write a brief note on design and construction of water dams. **07**
- Q.5** (a) Describe the function of rescue station. **03**
- (b) Explain the process of investigations after an explosion. **04**
- (c) State the standard of lighting at various places in a mine as required by the circular of D.G.M.S. **07**

OR

- Q.5** **(a)** Write a short note on rescue room. **03**
- (b)** How lamp room is designed and organized? **04**
- (c)** Discuss the construction and advantages of electric cap lamp with neat sketch. **07**
