

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-IV EXAMINATION – SUMMER 2025

Subject Code:3142201

Date:08-05-2025

Subject Name:Mining Machinery - I

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
Q.1 (a) Discuss the various applications of aerial ropeway.	03
(b) List out types of mine locomotives. Explain any one.	04
(c) Explain the construction and installation of aerial ropeway.	07
Q.2 (a) Define the following term: Backstay, Back catch and Drop warwick.	03
(b) Explain various types of aerial ropeway system.	04
(c) Explain endless rope haulage with neat sketch.	07
OR	
(c) Explain main & tail rope haulage with neat sketches.	07
Q.3 (a) Discuss the advantages of gravity rope haulage.	03
(b) Describe the advantages of compressed air over other power sources.	04
(c) Explain the construction of mine tubs and car with neat sketch.	07
OR	
Q.3 (a) List out different methods of transport system used in underground mine.	03
(b) Describe rope tensioning arrangement in aerial ropeway.	04
(c) Explain the construction and operation of mine locomotives.	07
Q.4 (a) Discuss the important feature of a good haulage track.	03
(b) Describe the process of capping and rope capels in brief.	04
(c) Describe haulage track, its laying and maintenance in brief.	07
OR	
Q.4 (a) Explain the working of scraper chain conveyor.	03
(b) Describe the criteria for selection of wire ropes.	04
(c) Explain lang's lay and ordinary lay in wire rope.	07
Q.5 (a) Explain any one loop take up arrangement for belt conveyor system.	03
(b) Describe the construction and operation of low profile dumper.	04
(c) Explain pipe line and distributions of compressed air used mines.	07
OR	
Q.5 (a) Describe rope splicing in details.	03
(b) Describe the construction and operation of shuttle car.	04
(c) Explain the various types and construction of wire ropes.	07
