

GUJARAT TECHNOLOGICAL UNIVERSITY**BE –4th SEMESTER (New Syllabus) EXAMINATION- WINTER 2021****Subject Code: 3142201****Date:****Subject Name: MINING MACHINERY-I****Time:****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	(a) Mention the advantages of using compressed air as a source of power.	03
	(b) Classify different types of air compressors.	04
	(c) Explain transmission and distribution of compressed air in mines.	07
Q.2	(a) Classify types of aerial ropeways.	03
	(b) List the necessary conditions in which aerial ropeway can be used for haulage and transportation.	04
	(c) Using neat diagram explain the constructional features of aerial ropeway.	07
	OR	
	(c) Explain different methods used for rope tensioning.	07
Q.3	(a) Define:	03
	i. Wire	
	ii. Rope	
	iii. Core	
	(b) Classify wire ropes based on its construction.	04
	(c) Explain the method of rope splicing.	07
	OR	
Q.3	(a) Explain the factors influencing choice of wire ropes.	03
	(b) Explain the use of rope capels. List different types of rope capels.	04
	(c) Explain stepwise construction of coned socket type capel.	07
Q.4	(a) Explain the factors influencing gauge size of tracks.	03
	(b) Using neat diagram explain the constructional features of mine cars.	04
	(c) Write a note on safety provisions in mine transportation.	07
	OR	
Q.4	(a) List types of locomotives used in mines.	03
	(b) Write a note on maintenance of mine locomotives.	04
	(c) Explain any one type of locomotive in detail.	07
Q.5	(a) Classify rope haulage systems.	03
	(b) Discuss the applicability of gravity rope haulage system.	04
	(c) Explain main and tail rope haulage system with its advantages and disadvantages.	07
	OR	
Q.5	(a) Write a note on:	03
	i. Buffers	
	ii. Stop block	
	(b) Write a note on safety devices used in rope haulage systems.	04
	(c) Explain direct rope haulage system with its advantages and disadvantages.	07
