

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE- SEMESTER-V (NEW) EXAMINATION – WINTER 2020****Subject Code:3152201****Date:27/01/2021****Subject Name:Mine Machinery II****Time:10:30 AM TO 12:30 PM****Total Marks: 56****Instructions:**

1. Attempt any **FOUR** questions out of **EIGHT** questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

	<b>MARKS</b>
<b>Q.1</b> (a) Define:	<b>03</b>
i. Head	
ii. Air vessel	
iii. Snoring	
(b) Classify different types of mine pumps.	<b>04</b>
(c) Using a neat labeled diagram explain the construction features and working of a centrifugal pump.	<b>07</b>
<b>Q.2</b> (a) Classify mine winders in detail.	<b>03</b>
(b) Draw torque-time diagram of:	<b>04</b>
i. Balanced cylindrical drum winder with tail rope	
ii. Balanced cylindrical drum winder without tail rope	
(c) Name the types of electric braking used on winders. Explain regenerative braking.	<b>07</b>
<b>Q.3</b> (a) Draw and explain the construction features of headgear.	<b>03</b>
(b) Give the advantages of multirope winding.	<b>04</b>
(c) Explain drum winding in detail.	<b>07</b>
<b>Q.4</b> (a) Classify mechanical loaders.	<b>03</b>
(b) Write a note on safety arrangements used in winding.	<b>04</b>
(c) Compare drum winding and Koepe winding.	<b>07</b>
<b>Q.5</b> (a) Explain creepers and tippers.	<b>03</b>
(b) Write a note on tensioning arrangement of belt conveyor.	<b>04</b>
(c) Explain the working of continuous miner.	<b>07</b>
<b>Q.6</b> (a) Classify pit top and pit bottom layouts.	<b>03</b>
(b) Explain types of guides.	<b>04</b>
(c) Explain run round arrangement using a neat diagram. Also give its advantages and disadvantages.	<b>07</b>
<b>Q.7</b> (a) Briefly explain types of cages used in underground mines.	<b>03</b>
(b) Classify conveyors.	<b>04</b>
(c) Using a neat diagram explain the construction of belt conveyor.	<b>07</b>
<b>Q.8</b> (a) Write a note on gathering arm loader.	<b>03</b>
(b) Write a note on stage loaders.	<b>04</b>
(c) Explain types, construction and working of shearer using labeled diagram.	<b>07</b>

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