

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2018****Subject Code: 2172204****Date: 29/11/2018****Subject Name: Mineral Processing****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.

		MARKS
<b>Q.1</b>	(a) What is mineral processing? How is it useful to mining industry?	<b>03</b>
	(b) Write the objectives of grinding.	<b>04</b>
	(c) Comparison of Jaw crusher and gyratory crusher	<b>07</b>
<b>Q.2</b>	(a) Explain: Kick's law.	<b>03</b>
	(b) Explain: sorting classifiers.	<b>04</b>
	(c) Write down the principal steps of mineral processing.	<b>07</b>
<b>OR</b>		
<b>Q.3</b>	(c) Write in detail types of industrial screens.	<b>07</b>
	(a) Explain: mobile crushing unit.	<b>03</b>
	(b) Explain: black Jaw crusher.	<b>04</b>
	(c) Write the special method of grinding.	<b>07</b>
<b>OR</b>		
<b>Q.3</b>	(a) Explain: sieve analysis	<b>03</b>
	(b) Advantage and disadvantage of jigs.	<b>04</b>
	(c) Working principle and operation of shaking table.	<b>07</b>
<b>Q.4</b>	(a) Explain : Hydrocyclones	<b>03</b>
	(b) Explain: collectors and frothers	<b>04</b>
	(c) Explain the Ball mill. Classify the various zones created in ball mill during grinding.	<b>07</b>
<b>OR</b>		
<b>Q.4</b>	(a) Explain the electrostatic separator.	<b>03</b>
	(b) Discuss in brief about froth flotation.	<b>04</b>
	(c) Explain the mechanism of magnetic separator	<b>07</b>
<b>Q.5</b>	(a) Write a note on sampling errors.	<b>03</b>
	(b) Explain: (i) Thickening (ii) Filtration	<b>04</b>
	(c) Write note on processing of coal and explain via flow sheet of coal washing by heavy media separation.	<b>07</b>
<b>OR</b>		
<b>Q.5</b>	(a) Explain: crushing, sizing and cleaning of coal.	<b>03</b>
	(b) Explain: Methods used in ore dressing	<b>04</b>
	(c) Write note on processing of copper and explain via flow sheet of copper washing by heavy media separation.	<b>07</b>

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