Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–III • EXAMINATION – SUMMER • 2014

Subject Code: 132103 **Date: 23-05-2014**

Subject Name: Mineral Processing

Time: 02.30 pm - 05.00 pm **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	What are main steps of mineral processing? Explain importance of each step.	**07**
	(b)	Write a note on mineral resources of India.	**07**
Q.2	**(a)**	Explain the physical and chemical properties of minerals- Haematite, Galena, Azurite, Bauxite.	**07**
	(b)	Write a note on economics of ore dressing.	**07**
		OR	
	(b)	What different types of Crushing and Grinding equipments are used in mineral processing and why?	**07**
Q.3	**(a)**	What are the factors affecting comminution? Also write about the factors affecting grinding mills.	**07**
	(b)	On what principle forth flotation works? Explain the process of forth flotation with diagram.	**07**
		OR	
Q.3	**(a)**	Differentiate between magnetic and Electrostatic separation.	**07**
	(b)	Explain Dense media separation.	**07**
Q.4	**(a)**	What are classifiers? Explain air classifiers with diagram.	**07**
	(b)	Explain the role of reagents and modifiers in forth flotation method.	**07**
		OR	
Q.4	**(a)**	What is screening? Describe industrial and laboratory screening.	**07**
	(b)	Explain with diagram Dry-Drum magnetic separator and explain its Operation.	**07**
Q.5		Write a note on two :-	**14**

1. Kick's law and Rittinger's law of grinding.
2. Sedimentation and Thickening.
3. Jigging machine.
4. Filtration and Drying.

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