

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.
