

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**B.E SEM-VII Examination-Nov/Dec.-2011**

**Subject code: 172204****Date: 26/11/2011****Subject Name: Mineral Processing****Time: 10.30 am-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.

- Q.1** (a) Draw simple flow diagram of Mineral Processing. Define Ore, Minerals, Crushing, Grinding, Sizing, sampling. **09**
- (b) Draw Flow sheet for preparation of the Anthracite coal. **05**
- Q.2** (a) Give classification of crushers. Explain any secondary crusher. **07**
- (b) Write short note on operation of Jigging machine. **07**
- OR**
- (b) Explain Heavy media separation process in brief. **07**
- Q.3** (a) Explain the Ball mill. Classify the various zones created in Ball mill during grinding. **07**
- (b) Explain the principle of mechanical classifier. List out the types and explain in brief any one mechanical classifier. **07**
- OR**
- Q.3** (a) What are the purpose of collectors, frothers, activators and depressants in flotation process. **07**
- (b) i) Draw the flow sheet of iron ores. **05**  
ii) Explain kick's law of comminution. **02**
- Q.4** (a) Explain in brief about hydrocyclone. **07**
- (b) Explain sieve analysis in brief. **07**
- OR**
- Q.4** (a) Explain "why flotation is used for fine particles only?" **07**  
Draw a flotation circuit consisting of rougher cells, cleaner cells and scavenger cells.
- (b) Shot note on Jaw crusher. **07**
- Q.5** (a) Give the classification of industrial screens. **07**
- (b) Explain the mechanism of magnetic separator with sketch. **07**
- OR**
- Q.5** (a) Write short note on Thickening. **07**
- (b) What is importance of Sampling? What are different methods used for sampling in mineral processing. **07**

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