

B.E. Mining Engineering Sem-VI  
**MN601 - Mineral Processing**

P. Pages : 2

Time : Three Hours



**GUG/S/19/1717**

Max. Marks : 80

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- Notes :
1. Due credit will be given to neatness and adequate dimensions.
  2. Assume suitable data wherever necessary.
  3. Diagrams and Chemical equation should be given wherever necessary.
  4. Illustrate your answers wherever necessary with the help of neat sketches.
  5. Marks are indicated to the right.

1. a) What are the various steps involved in mineral processing? State advantages of mineral processing. 8  
b) Discuss the factors which will effect the commination & selection of communication machines. 8

**OR**

2. a) Describe with neat sketch "Blake jaw crusher". Compare the jaw crusher with Gyratory crusher. 10  
b) Explain the principles of Grinding action in a "Tumbling mill". 6
3. Write notes on the following. 16
  - i) Grizzly.
  - ii) Vibrating screen.
  - iii) Reciprocating screen.
  - iv) Screening efficiency & capacity of screen.

**OR**

4. a) What are various factors affecting the settling of particles in case of classification. 6  
b) Explain with neat sketch mechanical type of classifier. 6  
c) What is sampling? Why sampling is carried out in mineral processing plant? State precautionary measures to be taken at the time of sampling. 4
5. a) Define the term leaching. Explain the Bio-leaching technique. 8  
b) What do you understand by the following. 8
  - a) Hand sorting.
  - b) Washing & scrubbing of ore.

**OR**

6. a) Explain D.M.S. with schematic representation. State & explain types of media employed in D.M.S. 8

- b) Explain the followings. **8**  
 i) jigging cycle.  
 ii) plunger figs.  
 iii) wilfley table.
- 7.** a) What is froth flotation? Discuss the significance of flotation reagents. **8**  
 b) Explain with neat sketch operation of a flotation column. **8**

**OR**

- 8.** a) When magnetic separation method is used? How the minerals are classified on the basis of their magnetic fields. What is paramagnetic minerals. **6**  
 b) Discuss the principles and application of electrostatic separation. **5**  
 c) Explain with neat sketch high intensity Electrostatic separator. **5**
- 9.** a) What is palletization? Why it is carried out? How pelletization is done. **8**  
 b) What the the various types of thickeners used for water reclamation in mineral processing plant. Explain any one thickener with neat sketch. **8**

**OR**

- 10.** Write short notes on :-
- a) Flow sheet for iron ore. **5**  
 b) Washability curves & its significance. **6**  
 c) Coal preparation. **5**

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