

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-III (OLD) - EXAMINATION – SUMMER 2018

Subject Code: 132103

Date: 21/05/2018

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.

- Q.1 (a)** List different types of crushers. Draw a simplified diagram of Blake Jaw Crusher showing different parts. **07**
- (b)** What is Grinding? Classify the various zones created in ball mill during grinding operation. **07**
- Q.2 (a)** List out ores and Minerals for metal like Al, Fe, Cu, Zn, Pb, Zn, Mg with their chemical composition **07**
- (b)** What are merits of mineral processing .Draw a simplified flow sheet for the various processes involved in ore processing **07**
- OR**
- (b)** Define mesh number. Mention the importance of sieve analysis **07**
- Q.3 (a)** What is screening? Classify different types of industrial screening. **07**
- (b)** Differentiate between Crushing and Grinding. **07**
- OR**
- Q.3 (a)** What is Jigging? Explain its principles with neat diagram. **07**
- (b)** Explain the working process of mechanical classifier with a schematic diagram. **07**
- Q.4 (a)** Discuss magnetic separator with neat diagram in brief. **07**
- (b)** What is free settling ratio in classification? Derive the equation for it as per Newton's law. **07**
- OR**
- Q.4 (a)** What is froth flotation? Explain principle of Flotation cell. **07**
- (b)** Explain Sedimentation and Thickening **07**
- Q.5 (a)** What are the purpose of collectors, frothers, activators and depressants in flotation process? **07**
- (b)** Explain in brief 'Dense Media Separation'. **07**
- OR**
- Q.5 (a)** List out factors affecting the comminution operation. Also discuss the factors Affecting the operation of grinding mills in brief. **07**
- (b)** Explain briefly on electrostatic separator. **07**
