Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII(NEW) EXAMINATION – SUMMER 2019

Subject Code: 2172204 Date:27/05/2019

Subject Name: Mineral Processing

Time: 02:30 PM TO 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.**

			MARKS
Q.1	**(a)**	Define mineral processing and the various steps involved in it.	**03**
	(b)	With the help of a short note explain the importance of mineral processing in mining industry.	**04**
	(c)	Explain communition and liberation in detail with different steps involved in it.	**07**
Q.2	**(a)**	Explain Kick's law.	**03**
	(b)	List out the objectives of grinding.	**04**
	(c)	Compare jaw crusher with gyratory crusher.	**07**
		OR	
	(c)	Explain ball mill and the various zones created in it during grinding.	**07**
Q.3	**(a)**	Define: (i) sizing; (ii) jigging; and (iii) thickening.	**03**
	(b)	Describe the constructional features of a Blake jaw crusher.	**04**
	(c)	Describe froth floatation process for the concentration of minerals. Give names of any two ores which can be concentrated using this process.	**07**
		OR	
Q.3	**(a)**	What do you understand by 'open circuit' and 'closed circuit' ginding?	**03**
	(b)	Write a note on how grade of a mineral is maintained according to market demand.	**04**
	(c)	Using a labeled diagram explain magnetic saperators.	**07**
Q.4	**(a)**	Briefly explain gravity concentration.	**03**
	(b)	Explain the principle underlying the working of hydrocyclons.	**04**
	(c)	Write short note on heavy media separation.	**07**
		OR	
Q.4	**(a)**	What is the purpose of collectors?	**03**
	(b)	Write a short note on laws of solids settling in fluids.	**04**
	(c)	Write a note on industrial screens.	**07**
Q.5	**(a)**	Explain vibrating tables in brief.	**03**
	(b)	Explain the factors enfluencing washability of coal.	**04**
	(c)	Draw and explain simplified flowsheet for the concentration of copper ore.	**07**
		OR	
Q.5	**(a)**	Write a note on laboratory sieve analysis.	**03**
	(b)	Explain different methods of sampling.	**04**
	(c)	Draw and explain simplified flowsheet for concentration of magnetite ore.	**07**

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