Seat No.:	Enrolment No.

## **GUJARAT TECHNOLOGICAL UNIVERSITY**

## **BE - SEMESTER-V EXAMINATION - WINTER 2015**

Sul Tir	bject ne: 1	Code: 150502 Date:17/12/2015 Name: Mechanical Operation 0:30am to 1:00pm Total Marks: 70	
Inst	2.	Attempt all questions.  Make suitable assumptions wherever necessary.  Figures to the right indicate full marks.	
<b>Q.1</b>	(a)	Define: 1) Rittinger's Law 2) Kick's Law 3) Bond's Crushing Law 4) Work	07
	<b>(b)</b>	Index Enlist & Describe applications of fluidization in chemical industries with appropriate example.	07
Q.2	(a)	Explain working principle and applications of cyclone separator with neat sketch.	07
	<b>(b)</b>	Short note on Jaw crusher with neat sketch.	07
		OR	
	<b>(b)</b>	Describe different types of agitator and their selection criteria.	07
Q.3	(a) (b)	Explanation with neat sketch - Ball Mill. Enlist difference between jaw crusher and gyratory crusher.	07 07
		OR	
Q.3	(a)	Mention advantages and disadvantages of plate and frame filter with working principle.	07
	<b>(b)</b>	Shortly describe batch sedimentation & enlist its industrial applications.	07
Q.4	(a) (b)	Define the terms. 1) Filter media 2) Filter aids.  Define: 1) Minimum fluidization velocity 2) Mesh size 3) Screen effectiveness 4) Crushing efficiency 5) Power number.	07 07
		OR	
Q.4	(a) (b)	Explain role of mechanical operation in chemical industry. Short note. Ultra filtration	07 07
Q.5	(a)	With a neat sketch of froth floatation describe its working principle and applications.	07
	<b>(b)</b>	Shortly describe different types of screw conveyer?	07
		OR	
Q.5	(a)	With the help of flow diagram describe open and closed circuit grinding operation.	07
	<b>(b)</b>	Enlist different parameters affecting rate of filtration.	07