Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI (NEW) EXAMINATION – WINTER 2018

Subject Code: 2160501 Date:16/11/2018

Subject Name: Mass Transfer Operation - II

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)**	Explain separation in Enriching and Stripping section of continuous rectification column.	**03**
	(b)	Define : Reflux ratio, Total reflux, minimum reflux	**04**
	(c)	Explain McCabe and Thiele method for tray calculation.	**07**
Q.2	**(a)**	Explain feed tray location.	**03**
	(b)	Draw the location of q line for various thermal condition of feed.	**04**
	(c)	Derive equation of q-line.	**07**
		OR	
	(c)	Describe Azeotropic distillation briefly.	**07**
Q.3	**(a)**	Define : Molal Absolute humidity, Grosvenor humidity, Dry-bulb temperature.	**03**
	(b)	Describe types of cooling tower shortly.	**04**
	(c)	Derive the equation of adiabatic saturation curve.	**07**
		OR	
Q.3	**(a)**	Define : Relative saturation, Percentage saturation, Dew point	**03**
	(b)	Describe spray chambers shortly.	**04**
	(c)	Derive the expression for wet bulb depression.	**07**
Q.4	**(a)**	Define : Moisture content on wet basis, moisture content on dry basis, bound moisture.	**03**
	(b)	Describe drum dryer shortly.	**04**
	(c)	Explain liquid diffusion within the solid.	**07**
		OR	
Q.4	**(a)**	Define : Unbound moisture, equilibrium moisture, free moisture.	**03**
	(b)	Classify rotary dryer and explain any one shortly.	**04**
	(c)	Explain typical rate of drying curve under constant drying conditions.	**07**
Q.5	**(a)**	Explain physical adsorption.	**03**
	(b)	Explain adsorption from concentrated solutions.	**04**
	(c)	Describe adsorption wave briefly.	**07**
		OR	
Q.5	**(a)**	Explain chemisorptions.	**03**
	(b)	Explain adsorption of solute from dilute solutions.	**04**
	(c)	Describe working of pressure swing absorber.	**07**

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