Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B. Pharm. – SEMESTER – I • EXAMINATION – WINTER • 2015

Subject Code: 210004 Date: 29-12-2015

Subject Name: Pharmaceutical Engineering

Time: 10:30 am - 01:30 pm Total Marks: 80

Instructions:

1. **Attempt any five questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Write a short note on different types of graphical representation.	**06**
	(b)	Discuss the importance of pharmaceutical engineering in the field of pharmacy.	**05**
	(c)	Explain the terms (1) Gas constant and (2) Reynolds number	**05**
Q.2	**(a)**	Define stoichiometry and discuss its significance in Pharmacy.	**06**
	(b)	Discuss material balance and energy balance.	**05**
	(c)	Write a short note on fuels.	**05**
Q.3	**(a)**	Discuss Rotameter in detail.	**06**
	(b)	Write a short note on frictional losses.	**05**
	(c)	Draw neat and labeled diagram of orificemeter and venturimeter.	**05**
Q.4	**(a)**	Classify the solid transportation system.	**06**
	(b)	Discuss belt conveyor.	**05**
	(c)	Define valves. Draw neat and labeled figure of globe valve.	**05**
Q.5	**(a)**	Discuss Fourier's law and derive its equation.	**06**
	(b)	Describe the various modes of heat transfer.	**05**
	(c)	Define Black Body. Write a short note on Stefan-Boltzmann law.	**05**
Q. 6	**(a)**	Discuss the principle involved in Mass transfer. Enumerate unit operations in which mass transfer operation is involved.	**06**
	(b)	Write a note on various types of glasses used in a pharmaceutical industry.	**05**
	(c)	Discuss different ways for prevention and control of corrosion in industry.	**05**
Q.7	**(a)**	Define Manometer? Derive equation applicable for simple manometer.	**06**
	(b)	What are differences between Pipe and Tubings?	**05**
	(c)	Derive the equation for the rate of heat transfer when the resistances are in series.	**05**

****