Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B. Pharm. – SEMESTER – I (OLD Syllabus)• EXAMINATION – SUMMER • 2015

Subject Code: 210004 **Date: 25-05-2015**

Subject Name: Pharmaceutical Engineering

Time: 02:30 pm - 05:30 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)**	Define and explain following: (i) Stoichiometry (ii) Unit processes (iii) Tie-substance.	**06**
	(b)	Discuss Dimensional Analysis, its advantages and disadvantages.	**05**
	(c)	What is the difference between SI unit and CGS unit?	**05**
Q.2	**(a)**	Discuss principle, construction, working, advantages and disadvantages of rotameter.	**06**
	(b)	Differentiate venturimeter and orificemeter.	**05**
	(c)	Write an application of gas law.	**05**
Q.3	**(a)**	Classify the transportation system for solids. Discuss belt conveyor.	**06**
	(b)	Write the different types of manometer and explain any one in details.	**05**
	(c)	Enumerate different types of valves. Describe gate valve.	**05**
Q.4	**(a)**	Define corrosion and write in details about different types and causes of corrosion.	**06**
	(b)	Enlist the factors influencing the selection of materials for pharmaceutical plant construction.	**05**
	(c)	Discuss advantages and limitations of different kind of plastics used in pharmaceutical industry.	**05**
Q.5	**(a)**	Write a Fourier's Law. Derive equation for rate of heat transfer when the resistances are in series.	**06**
	(b)	Write a short note on Reynolds number and it's significant.	**05**
	(c)	Explain color coding of Pipelines for material handling system.	**05**
Q. 6	**(a)**	Write importance of pharmaceutical engineering	**06**
	(b)	Write a brief note on total energy balance.	**05**
	(c)	Write a short note on solid/fluid mass transfer	**05**
Q.7	**(a)**	Explain Black body, absorptivity and emmisivity.	**06**
	(b)	Explain Dalton's Law and Amagat's Law.	**05**
	(c)	Classify heat exchangers and write any one in detail.	**05**

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