Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

B.Ph SEM-I Examination- Jan.-2012

Subject code: 210004 **Date: 05/01/2012**
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)	Explain the terms 1) Gas constant 2) Dimensionless equations 3) Reynolds number	**06**
	(b)	Write a note on different types of graphical presentation.	**05**
	(c)	What is absolute temperature? Convert 121 °C into different absolute temperature units.	**05**
Q.2	(a)	Rotameter is called variable orifice meter-Explain the statement. Draw a neat labeled diagram of rotameter and give its advantages and disadvantages.	**06**
	(b)	Define Coefficient of discharge. Give the difference between orificemeter and venturimeter.	**05**
	(c)	Write a note on measurement of pressure.	**05**
Q.3	(a)	A liquid with density of 40 lb/ft^3 flows through a very straight circular pipe at the rate of 200 ft^3/hr. Determine the type of flow under following conditions: 1) When inside diameter of pipe is 1.2 ft and viscosity is 3 cp. 2) When inside diameter of pipe is 2 inch and viscosity is 1.8 Lb.mass/ft.hr.	**06**
	(b)	Explain Dalton's Law and Amagat's Law.	**05**
	(c)	Write a short note on fuels.	**05**
Q.4	(a)	Define Fourier's law. Derive an equation for heat transfer when reistance is in series.	**06**
	(b)	Write a note on steam as a heating medium.	**05**
	(c)	Explain the use of mean area and mean temperature in heat transfer.	**05**
Q.5	(a)	Describe the construction working and disadvantages of belt conveyor with a neat sketch.	**06**
	(b)	Write a note on pneumatic conveyor.	**05**
	(c)	Draw a labeled diagram of centrifugal pump. Explain its principle.	**05**
Q. 6	(a)	Give the classification of pumps and conveyors.	**06**
	(b)	Define valves. Draw a labeled figure of globe valve.	**05**
	(c)	Write a note on solid/fluid mass transfer.	**05**
Q.7	(a)	Discuss the factors affecting selection of material of plant construction.	**06**
	(b)	Explain importance of corrosion. Discuss theory of corrosion.	**05**
	(c)	Write a note on glass as a material of construction.	**05**

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