Seat No.:	Enrolment No
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GUJARAT TECHNOLOGICAL UNIVERSITY

B. Pharm. – SEMESTER – III • EXAMINATION – SUMMER • 2014

Subject Code: 2230002		Date: 05-06-2014
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Subject Name: Pharmaceutical Engineering

Time: 02:30 pm To 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 terms giving appropriate examples. (1) Stoichiometry (2) Unit operation (3) Tie substance	06		
	(b) (c)	Explain overall Material Balance and Single component Material Balance. In a continuous process 100 Lb of wet air containing 0.02 Lb of water vapour per Lb of dry air enter per minute in a humidifier, where water vapour is added to the air. The leaving air contains 0.05 lb water vapour/Lb dry air. Calculate the ground of water added to the initial wet air per min.	05 05		
Q.2	(a) (b) (c)	Write a short note: Steam as Heating media Derive an equation for overall heat transfer coefficient. What are the units of U in different systems? What is black body? Write a short note on Stefan-Boltzman's law.	06 05 05		
Q.3	(a) (b) (c)	Classify the types of fluid flow and meters to measure the flow. Discuss the experiment of Rota meter. Differentiate Orifice meter and Venturimeter.	06 05 05		
Q.4	(a) (b) (c)	Classify materials used for Pharmaceutical Plant construction.			
Q.5	(a) (b) (c)	Write a note on Transportation of fluids. Write a short note on Belt – Conveyer. Describe with diagram Centrifugal pump.	06 05 05		
Q. 6	(a) (b) (c)	Explain briefly Bucket type steam trap. Give design and working of heat exchangers. Derive corollary of Dalton's law and Amagat's law.	06 05 05		
Q.7	(a) (b) (c)	Write a short note on Types of Graphs. Describe the role of stainless steel in Pharm. Industry. Write a short note on Solid/ fluid mass transfer.	06 05 05		
