

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**B.Pharm – SEMESTER III • EXAMINATION – SUMMER-2017**

**Subject Code: 2230002****Date: 31/05/2017****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.

<b>Q.1</b>	(a) Enumerate Different types of graphs and explain in detail	<b>06</b>
	(b) Differentiate between unit process and unit operation	<b>05</b>
	(c) Define Pharmaceutical Engineering and mention its significance	<b>05</b>
<b>Q.2</b>	(a) Derive the Bernoulli's equation with proper assumption	<b>06</b>
	(b) Write a note on Fick's law of mass transfer	<b>05</b>
	(c) Write a note on Dalton's law and Amagat's law	<b>05</b>
<b>Q.3</b>	(a) What is Reynolds number? Explain in detail with significance	<b>06</b>
	(b) Write a note on Rotameter	<b>05</b>
	(c) Explain different types of flows with examples	<b>05</b>
<b>Q.4</b>	(a) Write a note on store design in pharmaceutical industries	<b>06</b>
	(b) Explain principle, construction, working and application of pneumatic conveyer with neat labelled diagram	<b>05</b>
	(c) Write a short note on Colour code for piping system in industry	<b>05</b>
<b>Q.5</b>	(a) Write a short note on different modes of heat transfer	<b>06</b>
	(b) Define and explain the terms with appropriate example	<b>05</b>
	i) Heat exchanger	
	ii) Black body	
	(c) Derive an equation for overall heat transfer coefficient	<b>05</b>
<b>Q. 6</b>	(a) Explain factors affecting selection of materials for pharmaceutical plant construction	<b>06</b>
	(b) Write a note on stainless steel as a material of construction	<b>05</b>
	(c) Write a short note on theory of corrosion with its importance	<b>05</b>
<b>Q.7</b>	(a) Enumerate Different types of glasses and explain in detail	<b>06</b>
	(b) What is solid/fluid mass transfer?	<b>05</b>
	(c) Differentiate between venturimeter and orifice meter	<b>05</b>

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