

**GUJARAT TECHNOLOGICAL UNIVERSITY****B. Pharm - SEMESTER-I • EXAMINATION – WINTER-2016****Subject Code: 210004****Date: 27/01/2017****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.

<b>Q.1</b>	(a) Discuss principle, construction and working of venturimeter.	<b>06</b>
	(b) Discuss U tube manometer in detail	<b>05</b>
	(c) Discuss theory of corrosion.	<b>05</b>
<b>Q.2</b>	(a) Explain the term 'stoichiometry'. How is it useful in pharmacy?	<b>06</b>
	(b) Write a note on centrifugal pump.	<b>05</b>
	(c) What is tie substance? Explain in detail.	<b>05</b>
<b>Q.3</b>	(a) How is transportation of solids carried out? Discuss factors affecting selection of conveyors.	<b>06</b>
	(b) Enumerate transportation involving vertical movement. Discuss any one.	<b>05</b>
	(c) Classify liquid pumps. Write a note on double piston pump.	<b>05</b>
<b>Q.4</b>	(a) Define black body. Explain Stephen Boltzman law for Black body.	<b>06</b>
	(b) Write a brief note on material balance.	<b>05</b>
	(c) Differentiate between Reciprocation pump and Diaphragm pump.	<b>05</b>
<b>Q.5</b>	(a) What is Fourier's law? Derive an equation for rate of heat transfer when the substances are in series.	<b>06</b>
	(b) Give applications of heat transfer in industrial process.	<b>05</b>
	(c) Write a short note on heat exchange.	<b>05</b>
<b>Q. 6</b>	(a) Discuss factors affecting selection of material for plant construction.	<b>06</b>
	(b) What is friction? Enumerate types of friction losses. Explain any one in detail.	<b>05</b>
	(c) Differentiate between unit operations and unit process.	<b>05</b>
<b>Q.7</b>	(a) Discuss Dimensional analysis in detail.	<b>06</b>
	(b) Discuss advantages of steam as heating medium.	<b>05</b>
	(c) Differentiate between steady state and unsteady state.	<b>05</b>

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