Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.PHARM – SEMESTER – 3- EXAMINATION –WINTER - 2018

Subject Code:2230002 **Date: 06/12/2018**

Subject Name: Pharmaceutical Engineering

Time:10:30 AM TO 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)**	Discuss Dalton's law, Amagat's law and their corollary.	**06**
	(b)	Explain unit operation and unit process.	**05**
	(c)	Discuss different types of graphical representations.	**05**
Q.2	**(a)**	Describe principle, construction and working of Rotameter with a labelled diagram.	**06**
	(b)	Define tie-substance. Describe material balance.	**05**
	(c)	Write a detail note on combustion.	**05**
Q.3	**(a)**	Derive Bernoulli's equation. Discuss the applications of Bernoulli's theorem.	**06**
	(b)	Explain Reynolds number and discuss its significance in fluid flow.	**05**
	(c)	Discuss the differences between Orifice meter and Venturi meter.	**05**
Q.4	**(a)**	Describe screw conveyor with a labelled diagram.	**06**
	(b)	Write a note on colour coding of pipelines.	**05**
	(c)	With a labelled diagram describe centrifugal pump.	**05**
Q.5	**(a)**	State Fourier's law and derive its equation.	**06**
	(b)	Derive equation for overall heat transfer coefficient.	**05**
	(c)	Write a note on pneumatic conveyor.	**05**
Q. 6	**(a)**	Describe the construction and working of floating head two pass heater with a labelled diagram.	**06**
	(b)	Give the classification of steam trap. Explain working of any one steam trap with a labelled diagram.	**05**
	(c)	State Stefan Boltzmann law. Explain the concept of 'Black body' and 'Grey body'.	**05**
Q.7	**(a)**	Describe role of stainless steel and glass in pharmaceutical plant.	**06**
	(b)	Define corrosion. Give classification of types of corrosion.	**05**
	(c)	Write a note on solid/ fluid mass transfer.	**05**

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