GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-V- EXAMINATION - SUMMER 2016

Subject Code: 150505

Subject Name: Fundamentals of Chemical Engineering Unit

Operations(Institute Elective - II)

Time: 02:30 PM to 05:00 PM

Total Marks: 70

Date: 17/05/2016

Instructions:

- 1. Attempt all questions.
- 2. Make suitable assumptions wherever necessary.
- 3. Figures to the right indicate full marks.
- Q.1 (a) Define gas absorption. Discuss the criteria for choice of solvent for absorption. 07
 - (b) With a neat figure, explain the construction and working of continuous Rotary 07 vacuum filter.
- Q.2 (a) What is evaporation? Explain the working principle and industrial application of 07 falling film type evaporator.
 - (b) What are the assumptions necessary to derive the Bernoulli's theorem? Derive the Bernoulli's equation for the flow of an incompressible fluid flowing through a pipeline.

OR

- (b) List out the various types of pumps and explain working principle of Centrifugal 07 pump.
- Q.3 (a) Define relative volatility. With a neat sketch, explain enriching and exhausting 07 section of distillation tower.
 - (b) Distinguish between Unit operations and Unit processes. List out the various types 07 of unit operations by giving their brief introduction.

OR

- Q.3 (a) With a neat sketch, explain the working of a tray drier. Also cite any two industrial 07 application of tray drier.
 - (b) Draw a neat and labeled sketch of different parts in shell and tube heat exchanger 07 and explain the function of any two parts.
- Q.4 (a) Classify the size reduction equipments and briefly explain the construction, 07 working principle and industrial application of Jaw Crusher.
 - (b) List out the various types of flow meters. Explain working principle of any one of 07 them.

OR

- Q.4 (a) Explain construction and working of cyclone separator with neat sketch.
 (b) Differentiate between Drop wise and Film wise condensation.
 07
- Q.5 (a) Explain the term Priming, Cavitation and NPSH. 07
 - (b) Explain Conduction, Convection and Radiation with example. 07

OR

Q.5	(a)	With a neat sketch explain the construction and working of the cooling tower	07
	(b)	Explain the construction, working and applications of Gravity thickener	07
