

**PHARMACEUTICAL ENGINEERING – I**

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions  
All questions carry equal marks

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- 1 (a) Define unit processes.  
(b) Define mole fractions and mole volume.  
(c) Explain different methods of graph plotting.
- 2 (a) Explain about the types of fluid flow with experiment.  
(b) Illustrate about venturi meter and rotameter.
- 3 (a) Classify centrifugal pump and explain about any one volute pump.  
(b) Explain about reciprocating compressor.
- 4 (a) Discuss the theory of centrifugation.  
(b) Describe the principle, construction and working of plate and frame filter press.
- 5 (a) Explain the mechanism of crystallization and geometrical pattern of crystals.  
(b) Describe the principle, construction and working of Swenson Walker crystallizer.
- 6 (a) Explain the psychrometric chart and measurement of humidity.  
(b) Give a note on refrigeration mechanism.
- 7 (a) Write the theory of corrosion.  
(b) Explain about the role and types of glass involved in the pharmaceutical plant construction.
- 8 (a) Explain about the basic safety measures to prevent the chemical hazards.  
(b) Give a note on prevention of industrial dermatitis.

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