

Code: 9R01301

R09

B.Pharm II Year I Semester (R09) Supplementary Examinations June 2018

**PHARMACEUTICAL ENGINEERING – I**

(For 2009 (LC), 2010, 2011, 2012 regular & 2011 (LC), 2012, 2013 lateral admitted batches only)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions  
All questions carry equal marks

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- 1 (a) Discuss with examples, the applications of the various unit operations in pharmaceutical industry.  
(b) Write short notes on: (i) Dimensions & units. (ii) Dimensional analysis.
- 2 (a) Discuss the equation relating the total mechanical energy of a flowing liquid. Explain its importance in flow of fluid.  
(b) Comment briefly on following statements:  
(i) Venturi meter is a variable area meter.  
(ii) Reynolds number gives indication of the velocity of flowing liquids.
- 3 (a) Describe the principle and construction of a centrifugal pump of your choice.  
(b) Name different devices used for transportation of solids. Describe pneumatic conveyor.
- 4 (a) Explain theories of filtration. Explain factors affecting filtration.  
(b) Describe construction and working of rotary continuous filter.
- 5 (a) Discuss the Miers supersaturation theory of crystallization. What are the limitations of Mier's theory?  
(b) Define crystal lattice & crystal habit. Explain the principle, construction, working and advantages of vacuum crystallizer.
- 6 (a) Write the utility of humidity charts with a neat labeled diagram. Describe a refrigeration system using a compression refrigeration system.  
(b) Explain principle of humidification. What are brine systems in refrigeration and what are their advantages and disadvantages.
- 7 (a) What is corrosion? Name various types of corrosion. How can corrosion be prevented?  
(b) What are stainless steels? Classify them. Describe steel alloys used in pharmacy.
- 8 (a) List the principles of modern plant safety. Describe advantages of safety management. Describe the elements of safety program.  
(b) How does a dry chemical extinguisher function? Explain different methods of control of drug explosion.

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