

Roll No .....

**PY-301**

**B.Pharmacy III Semester**

Examination, December 2016

**Pharmaceutics - III**

**(Pharmaceutical Engineering - I)**

**Time : Three Hours**

**Maximum Marks : 70**

- Note:** i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.  
ii) All parts of each question are to be attempted at one place.  
iii) All questions carry equal marks, out of which part A and B (Max.50 words) carry 2 marks, part C (Max.100 words) carry 3 marks, part D (Max.400 words) carry 7 marks.  
iv) Except numericals, Derivation, Design and Drawing etc.

1. a) Define unit operation.  
b) What do you mean by dimensionless equation?  
c) Explain the law of conservation of energy.  
d) Discuss various factors affecting material selection for pharmaceutical plants.

OR

Discuss the role of copper and aluminium in Pharmaceutical plant.

2. a) Define corrosion.  
b) Give different types of corrosion.  
c) What are different heat transfer mechanisms?  
d) Discuss various methods of reducing corrosion.

OR

Discuss various industrial hazards and safety requirements.

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3. a) Explain differential manometer.  
b) Give the significance of Reynold's number.  
c) Explain different types of flow meter.  
d) Discuss Bernoulli's theorem.

OR

Describe psychometric charts and also give the application of humidity measurement.

4. a) Define valves.  
b) Explain Fourier's law.  
c) Describe different types of pumps.  
d) Discuss different types of conveyors.

OR

What do you mean by heat exchangers? Discuss in detail.

5. a) Define convection.  
b) Define the term relative humidity.  
c) Discuss wet bulb theory.  
d) Discuss the concept of air-conditioning and refrigeration in pharmacy.

OR

Explain the elements of Computer Aided Manufacturing (CAM).

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