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Roll No

PY - 301**B.Pharmacy III Semester**

Examination, June 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 questions 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) Describe the term "dimensional analysis".
- b) What is law of conservation of mass?
- c) Explain the role of plastic in packaging material of pharmaceuticals.
- d) Describe the electrochemical reaction occurring in corrosion of iron pipe expose to sea water. Give the measures you can take to prevent it.

OR

Give the importance of chemical factors in selection of material for plant construction. Give the role of copper in pharmaceuticals plant.

2. a) Write in short about cavitation corrosion.
- b) Describe the term caustic embrittlement used in corrosion.
- c) Why does stainless steel do not get rusting in normal condition?
- d) Describe the method and procedures to prevent electrical hazard.

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OR

Enumerate the different types of waste from formulation manufacturing plants. Explain in detail about the methods of treatment of such wastes.

3. a) Draw a neat diagram about working of gate valve.
- b) Write short note on volute pump.
- c) What are the significance of Reynold's number?
- d) Describe the construction and working of conveyers used to transfer injection vials to their packaging section.

OR

Describe the Kozeny's hydraulic diameter theory for fluid flow through packed bed.

4. a) Describe the convection heat transfer.
- b) What does scaling refers in heat exchangers?
- c) Describe in short about steam as heating medium in pharmaceutical industry.
- d) Explain the heat transfer process for boiling liquids. Discuss about various types of steam traps.

OR

Design a conveyor system for transporting and filling lumpy mass of a paste preparation from a hopper to the paste tube. Explain with neat diagram.

5. a) Draw a neat diagram of refrigeration system.
- b) Write the applications of dehumidifier in pharmaceutical company.
- c) What are the required properties of ideal refrigerants.
- d) Describe the theory of reverse heat engine cycle involve in refrigeration.

OR

Write notes on automatic process control and its applications in pharmaceutical industries.

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