

Code No. 4039

FACULTY
B. Pharmacy 2/4 I – Semester (Main) Examination, November 2016
Subject: Pharmaceutical Engineering – I
Time: 3 Hrs
Max.Marks: 70
Note: Answer all questions. All questions carry equal marks.

- 1 a) Discuss the applications, advantages and limitations of any two types of plastics used in the pharmaceutical industry. 7
 b) What is corrosion? List the various types of corrosion. How can corrosion be prevented. 7
OR
 c) Define the following with suitable examples:
 i) Unit operations ii) Unit processes iii) Steady state iv) Unsteady state 8
 d) Mention two ferrous and non ferrous alloys used in pharmaceutical industry. Write the composition, advantages, disadvantages and uses of non ferrous alloys. 6
- 2 a) Derive and explain Bernoulli's theorem. Explain its importance in flow of fluids. 7
 b) Describe the construction, operations, advantages and disadvantages of a multiple pass heater. 7
OR
 c) Differentiate between Venturi meter and Rotameter. 7
 d) Write a note on entrainment separators, 7
- 3 a) Enlist the equipment used for transportation of solids. Describe any one equipment in detail. 7
 b) Write a note on:
 i) Air lift pump ii) Ejectors 3.5x2=
OR
 c) With a neat sketch explain the design and operation of centrifugal pump. 7
 d) Describe the construction, working and pharmaceutical applications of belt conveyor. 7
- 4 a) Describe the methods used for dehumidification of air. Explain its significance in pharmacy. 7
 b) List the different refrigerants. What are the desirable properties of refrigerants? 4
 c) Write a note on "spray ponds". 3
OR
 d) With a neat sketch, explain the principle, working of an absorption refrigeration cycle. 7
 e) Write a note on "Natural draft cooling towers". 7
- 5 a) Explain the various theories of filtration in terms of the principle, mechanism and factors affecting the process. 10
 b) Write a note on "De Laval clarifier". 4
OR
 c) Describe the construction, working and uses of Membrane filter. 7
 d) Explain the construction, working of bottom driven centrifuge. Compare it with top driven centrifuge. 7
