111110111111 Code No. : **7008**

FACULTY OF TECHNOLOGY

B.Pharm. II Year I Sem. (Suppi.) Examination, June 2010

PHARMACEUTICAL ENGINEERING — I

Time: 3 **Hours]** **[Max. Marks: 70**

Instructions : *Answer* ***all*** *questions.*
All *questions carry* ***equal*** *marks.*

1. a) i) Distinguish ferrous and non ferrous metals with suitable examples. **4**

ii) Discuss the various types of alloys of stainless steel along with their composition, merits and demerits. ***7***

iii) Distinguish between steady state and unsteady state process. **3**

OR

b) i) Define conversion and discuss the factors influencing corrosion and explain the methods to combat corrosion. **8**

ii) Define unit operations and unit processes with suitable examples. **6**

2. a) i) What are variable head meters and variable area meters ? Describe about any one in the first category in detail. ***7***

ii) Derive an equation for heat flow through a cylinder. ***5***

iii) Define thermal conductivity. **2**

OR

b) i) What is convection ? How is it different from conduction and radiation ? **6**

ii) Write brief note on heaters and heat interchangers. **3**

iii) What are the functions of steam traps condensers vacuum pumps, and entrainment separators in the heat processes ? ***5***

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3. a) i) Classify fluid pumps with examples under each class. Describe the construction, functioning and advantages of Turbine pump. 8

ii) What is air binding and how to prevent it. 6

OR

b) i) Describe the principle, process and applications of pneumatic conveyor. 7

ii) Write about the different types of blowers used for transportation of gases. 7

4. a) i) Define the following :

a) Humid ratio b) Dew point

c) Humid heat d) Relative humidity 6

ii) What are humidity charts and explain various methods to determine humidity of air. 8

OR

b) i) Discuss the various parts comprised in refrigeration cycle. 8

ii) What is Air conditioning ? Explain the two approaches to achieve humidity. 6

5. a) i) Give any two equations to express rate of filtration. 4

ii) Describe with a neat sketch in detail about Rotary continuous filter along with its applications. 10

OR

b) i) What are the properties of ideal filter medium ? Discuss various types of filter media. 7

ii) Write the theory involved in centrifugation. Give applications of centrifugation. 7