B.Pharm/Sem-III CBSGS/Sub + Pharm Engg 17/12/15

**Q.P. Code : 21756**

(3 Hours) **[ Total Marks : 70**

**N.B. :** (1) All questions are compulsory
(2) Begin new question on a new page.

1. (a) Classify pressure measurement devices. With a neat labelled diagram describe the Bourdon pressure gauge. 5
   (b) How does mass transfer occur across an interface. Discuss in detail. 3
   (c) Enlist the various factors affecting caking of crystals. 2
   (d) Explain in brief how temperature and vapour pressure can affect the rate of evaporation. 2
   (e) Write a note on simple distillation. 2
   (f) Describe plastics as a material of plant construction. 3

2. (a) Classify pumps. With a neat labelled diagram describe the working of piston pump. 4
   (b) Describe in detail the construction and working of Krystal crystallizer. 4

   **OR**

   Classify crystallizers and describe the Swenson Walker Crystallizer. 4
   (c) Explain the principle of molecular distillation. Give its applications. 3

3. (a) Describe the construction and working of orifice meter. 4

   **OR**

   Describe the construction and working of Pitot tube. 4
   (b) Discuss entrainment separators as evaporator accessories. 3
   (c) Discuss in detail absorption systems in refrigeration. 4

4. (a) Differentiate between turbulent and laminar flow. Add a note on Reynold's number. 4
   (b) With a neat labelled sketch explain the principle and operation of shell and tube heat exchanger. 4

   **OR**

   Enumerate the various types of temperature measurement devices and discuss any one in detail. 4
   (c) Discuss in detail the nucleation step in crystallization. 3

5. (a) With a neat labelled diagram discuss centrifugal pumps. 3
   (b) Write in detail about fractional distillation. 4

**OR**

Discuss bubble cap and seive plate columns. 4

   (c) Explain the steps undertaken in an industry to prevent electrical hazards. 4

6. (a) Classify conveyor systems and describe pneumatic conveyors in detail. 3
   (b) Explain the working of short tube vertical evaporator. 4
   (c) What is corrosion ? Explain Galvanic corrosion and give methods to prevent galvanic corrosion. 4

**OR**

Name the factors influencing corrosion and discuss any two factors in detail. 4

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