VT-S.H.Exam. Nov.-12- 163 Ph|sem-I|ATKT|Pharmaceutical Engg.-Old

Con. 9507–12. 11/12/12 CN–2882

(2 Hours) [Total Marks : 40

N.B. : (1) Question No. **1** is **compulsory**.
(2) Attempt any **four** questions from Q. Nos. **2** to **6**.
(3) Draw neat labelled **diagrams** wherever **necessary**.

1. Attempt any **four** of the following :– **8**
   (a) Define pump. Name a pump suitable for transporting fluids containing syspended solids.
   (b) Give examples of pharmaceutical unit operations involving heat transfer.
   (c) Give two pharmaceutical applications of centrifugation.
   (d) State and explain Stefan-Boltzman Law of Thermal Radiation.
   (e) Explain the terms 'wet bulb temperature' and 'dry bulb temperature'.

2. (a) With a neat labelled sketch explain measurement of flow rate using an Orifice meter. **3**
   (b) Discuss in brief applications of Bernoulli's theorem. **3**
   (c) What is coefficient of thermal conductivity ? State the factors on which it depends. **2**

3. (a) Define centrifugation. With a neat labelled sketch explain the construction features and principle of operation of perforated basket centrifuge. **4**
   (b) With a neat labelled sketch explain the working of shell and tube heat exchanger. **4**

4. (a) Describe the construction and working of a distillation apparatus for the preparation of purified water. **4**
   (b) Explain the principle of dehumidification. **2**
   (c) State the types of glass used in pharmaceutical industry. **2**

5. (a) Define the term 'Mass transfer'. Explain the mechanism of mass transfer by molecular diffusion. **3**
   (b) Explain the salient features and merits of turbine pump over volute centrifugal pump. **3**
   (c) Explain natural convection and forced convection. **2**

6. (a) State components of belt conveyor. State its pharmaceutical applications. **3**
   (b) Write a note on nickel and its alloys. **3**
   (c) Explain the terms 'Erosion' and 'Fretting Corrosion'. **2**

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