



HEI-014-003303

Seat No. _____

M. P. M. (Sem. III) (CBCS) Examination

December - 2017

BP - 302T : Pharmaceutical Engineering

Faculty Code : 014

Subject Code : 003303

Time : **3** Hours]

[Total Marks : **80**

- Instructions :**
- (1) Answer and tie both the sections separately.
 - (2) Figures to the right indicates marks.
 - (3) Answer any three (3) questions from each section.
 - (4) Que. One (1) & Que. Five (5) are compulsory.
 - (5) Draw neat and clean diagrams as required.

SECTION - I

- 1** Answer Any **Seven** out of given TEN questions : **7×2=14**
- (a) Define : (i) Unit operation (ii) Unit Process
 - (b) Differentiate Reciprocating Pump with Diaphragm Pump
 - (c) Write the SI & CGS units for mass, length, heat & force
 - (d) Define : (i) Laminar flow (ii) Turbulent Flow.
 - (e) Explain : (1) Gas constant (2) Calorie
 - (f) Explain Fourier's Law.
 - (g) Convert : (1) 2 gram/cubic.cm = pound/gallon
(2) 100 kg/hr.m² to lb/hr.ft²
 - (h) What is absolute temperature? Convert 111 °C into different absolute temperature units.
 - (i) What are differences between Pipe and Tubings?
 - (j) Define and explain stoichiometry.

- 2** Answer the following :
- (a) Define and explain the following terms with suitable examples : (i) Dimensional Analysis (ii) Dimensional Formulae **7**
- (b) Reynolds number is unit less comment on it and prove it. **6**
- 3** Answer the following :
- (a) Describe Construction, Working and Application of the conveyor used to transfer semisolid materials. **7**
- (b) Explain Dalton's Law and Amagat's law with its corollary. **6**
- 4** Answer the following :
- (a) Write a note on Fick's law of mass transfer. **5**
- (b) Write short note on fuels and combustion. **5**
- (c) Explain Color coding of pipes. **3**

SECTION – II

- 5** Answer Any **Two** out of given Three questions. **2×7=14**
- (a) Define radiation and Black body. Explain Stephen Boltzmann law for black body.
- (b) Classify the types of fluid flow and meters to measure the flow.
- (c) Discuss the theory of corrosion. Describe the importance of corrosion.
- 6** Answer the following :
- (a) Describe the various modes of heat transfer. **7**
- (b) Explain all over and single component material balance. **6**
- 7** Answer the following :
- (a) Write principle, working, construction and application of rotameter. **7**
- (b) Give a note on boiler and its accessories. **6**

8 Answer the following :

- (a) Discuss the factors affecting selection of materials for the construction of pharmaceutical plant. **5**
- (b) Derive out Bernoulli's Theorem. **5**
- (c) Differentiate between orificemeter and venturimeter. **3**
