



JL-1612020701020200 Seat No. _____

M. P. M. (Sem. II) (CBCS) (W.E.F. 2016)

Examination

August / September - 2019

Pharmaceutical Engineering - N

Time : 3 Hours]

[Total Marks : 80

- Instructions :**
- (1) Answer and tie both the sections separately
 - (2) Figure to the right indicate marks.
 - (3) Answer any three (03) questions from each section.
 - (4) Question no. 1 and Question no. 5 are compulsory. Draw neat & clean diagrams as required.

SECTION - I

1 Answer any **seven** question out of ten : **7×2=14**

- (1) Define the term dimensional equation and dimensionless equation with example.
- (2) What is the use of pitot tube? Write its advantages and disadvantages.
- (3) Give the characteristics of drop type and film type condensation.
- (4) Define mechanical pressures gauges with example.
- (5) Define radiation and explain Stefan Boltzmann's law.
- (6) Differentiate between black body and grey body.
- (7) Define laminar and turbulent flow.
- (8) Explain the term dry saturated steam and superheated steam.
- (9) Explain the term sensible heat and latent heat.
- (10) Write down the advantages of efficient and effective conveying.

2 Answer the following Questions :

- (1) Explain the concept of film and overall heat transfer co-efficient in forced convection with help of neat diagram **7**
- (2) Write a note on Bernoulli's theorem. **6**

- 3 Answer the following Questions :
- (1) Explain in detail electrochemical theory of corrosion. 7
 - (2) Describe liquid interchangers what are its advantages? 6
- 4 Answer the following Questions :
- (1) Write a note on tube and shell heat exchanger 7
with principle, construction and working with neat and
labelled diagram.
 - (2) Explain the working, principle and construction of 6
orificemeter and write the expression for the volumetric
flow rate of fluid through it.

SECTION - II

- 5 Answer any **two** out of three : 2×7=14
- (1) Describe the principle and working of rotameter with
labeled diagram.
 - (2) Write a note on Fourier law of conduction and application
of conduction.
 - (3) Enumerates the types of corrosion and write a note on
prevention of corrosion in a pharmaceutical plant.
- 6 Answer the following Questions :
- (1) Write a short note on pneumatic conveyer 7
 - (2) Explain the factors affecting selection of material 6
of plant construction
- 7 Answer the following Questions :
- (1) Write a note on role of stainless steel and 7
glass in pharmaceutical plant.
 - (2) Explain in detail solid/fluid mass transfer and 6
Write down the application of mass transfer.
- 8 Answer the following Questions :
- (1) Explain the term mass balance and energy balance. 7
What are their applications?
 - (2) Define the term steam trap and explain float type 6
mechanical steam trap and balanced thermostatic steam
trap.