Printed Pages: 02   **Subject Code: BOP-232**

Paper Id: | 150322 | **Roll No:** | | | | | | | | | | |

B PHARM
(SEM-III) THEORY EXAMINATION 2018-19
PHARMACEUTICS-II (UNIT OPERATIONS)

Time: 3 Hours   *Total Marks: 100*

Note: 1. Attempt all Sections.

SECTION A

1.   **Attempt *all* questions in brief.**   **2 x 10 = 20**

   a.   Define equilibrium state.
   b.   What are the primary and secondary quantities?
   c.   What is a reactor?
   d.   Define water for injection.
   e.   Define filtration.
   f.   What is ultracentrifugation?
   g.   What is dehumidification?
   h.   Which dryer is suitable for thermolabile substances and why?
   i.   What is corrosion?
   j.   What is industrial dermatitis?

SECTION B

2.   **Attempt any *three* of the following:**   **10 x 3 = 30**

   a.   Discuss in detail about temperature, pressure and flow level measuring devices.
   b.   Discuss quality requirement and treatment of water.
   c.   What is drying? Discuss special drying methods.
   d.   What is relative humidity? Discuss methods for the measurement of humidity and the application of humidity measurement in pharmacy.
   e.   Discuss in detail regarding materials of construction with special reference to stainless steel and glass.

SECTION C

3.   **Attempt any *one* part of the following:**   **10 x 1 = 10**

   (a)   Define unit operation? What is a unit process? Explain in detail material and energy balance.
   (b)   What is automatic process control system? Discuss elements of automatic process control system in detail.

4.   **Attempt any *one* part of the following:**   **10 x 1 = 10**

   (a)   What is a filter aid? Write an example. Discuss the principal, construction, working, uses, advantages and disadvantages of edge filter with a well labelled diagram.
   (b)   Write the Darcy's equation. Discuss in brief about the factors affecting filtration?

5. **Attempt any *one* part of the following:** 10 x 1 = 10

   (a)   Define drying. Write the applications of drying in pharmaceutical industries. Discuss drying rate curve.

   (b)   Define equilibrium moisture content. Discuss the principal, construction, working, uses, advantages and disadvantages of spray dryer with a well labelled diagram.

6. **Attempt any *one* part of the following:** 10 x 1 = 10

   (a)   What is refrigeration? Discuss principles and applications of air-conditioning in detail.

   (b)   What is a psychometric chart? Discuss equipment for dehumidification operations in detail.

7. **Attempt any *one* part of the following:** 10 x 1 = 10

   (a)   What is fire triangle? Discuss electrical and fire hazards in detail.

   (b)   Define accidental records. Discuss mechanical and chemical hazards in detail.