Printed Pages: 02 **Sub Code: BOP232**

Paper ID: | 5 | 0 | 4 | 3 | **Roll No.** | | | | | | | | | | |

B. PHARM.
(SEM -III) THEORY EXAMINATION 2017-18
PHARMACEUTICS-II (UNIT OPERATIONS)

Time: 3Hours ***Max. Marks: 100***

Note: Attempt all Sections.

SECTION A

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

a. Describe the principle of stoichiometry with suitable example.
b. Distinguish between steady and unsteady states.
c. List the factors influencing the rate of filtration.
d. Distinguish filtration and clarification.
e. Explain the principle behind centrifugal separation.
f. Enlist the properties of filter aids.
g. Define CMC and EMC.
h. Classify dryers giving suitable examples.
i. What are the applications of air conditioning?
j. Define dry bulb temperature and wet bulb temperatures

SECTION B

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

a) Explain the term unit operation and unit process. Describe the basic principle of various unit operations used in pharmaceutical and other associated industries.
b) With a neat diagram, describe the construction and working of suitable industrial filter for handling of high solid containing slurries.
c) Explain the principle, construction, working, uses and advantages of freeze dryer.
d) With a neat diagram explain principle and working of an air conditioner.
e) Discuss various types of industrial hazards in detail emphasizing on electrical and fire hazards.

SECTION C

3. Attempt the following: 5 x 2 = 10

(a) Explain the term mass balance and energy balance. What are their applications?

(b) What is automated process control system? Discuss its types and write the advantages and disadvantages of automated process control system in pharmaceutical field.

4. Attempt the following: 5 x 2 = 10

(a). Classify industrial centrifuges. Give pharmaceutical application of industrial centrifuges.

(b) Differentiate purified water and water for injection.

5. Attempt the following: 5 x 2 = 10

(a) Describe the construction and working of edge filter.

(b) Describe the operation and application of fluidized bed dryer.

6. Attempt the following: 5 x 2 = 10

(a) Describe the working of a refrigerator.

(b) What do the terms dehumidification means? Write a note on the applications of dehumidification.

7. Attempt the following: 5 x 2 = 10

(a) Discuss in detail about dust hazards.

(b) Write a detailed account on material of construction with special reference to glass.