Printed Pages:01 **Sub Code: PHARM-241**

Paper Id: 150249 **Roll No.** | | | | | | | | | | |

B. PHARM.
(SEM IV) THEORY EXAMINATION 2018-19
UNIT OPERATION-II

Time: 3 Hours ***Total Marks: 100***

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

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

a. What do you understand by the term unit operation?
b. Write a short note on Material Balance.
c. Define Distillation. Mention two applications.
d. What are Primary and Secondary Units? Give their examples also.
e. What is drying process? Give its importance in the formulation of dosage forms.
f. Distinguish between evaporation and other heat process.
g. What is Critical moisture content?
h. What are Process variables?
i. What is Dalton's law?
j. Definefree moisture content.

SECTION B

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

a. Compare freeze drying with spray drying.
b. Write a detailed note on theory of drying.
c. Define Stoichiometry. Discuss steady and unsteady states.
d. Explain Gas Law and Boyle's Law.
e. Briefly discuss factors affecting rate of evaporation.

SECTION C

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

a) Explain the basic principles and methodology of simple distillation.
b) Briefly describe the principle, construction, working and merits of fluidized bed dryer.

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

a) With the help of neat and labeled diagram describe the principle, construction and working of film evaporator.
b) DefineRaoult's law and describe the Phase Diagrams.

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

a) Describe in detail about McCabeThiele method for the calculations of number of theoretical plates.
b) Discuss the principle, construction and uses of tray dryer.

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

a) Explian in detail about azeotropic and extractive distillation
b) Write a note on anautomatic process control systems.

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

a) Explain various types of reactorsand fundamentals of reactor designfor chemical reactions.
b) Write an elaborative note on single effect and multiple evaporators.