



P-1612010701020100 Seat No. _____

M. P. M. (Sem. II) Examination

June / July - 2018

Unit Operation - II

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) and Que. Five (5) are compulsory.
- (5) Draw neat and clean diagrams as required.

SECTION - I

1 Answer any seven out of given ten questions : **$7 \times 2 = 14$**

- (a) Define size reduction and enlist its objectives.
- (b) Enlist the application of Extraction in pharmaceutical industry.
- (c) What do you mean by crystal lattice and crystal habit?
- (d) Enumerate the types of mixtures with examples.
- (e) Give the difference between sedimentation and elutriation.
- (f) Enlist the methods for prevention of caking of crystals.
- (g) Give the coding about the waste water system in pharmaceutical industry.
- (h) Give the principle of ultrasonic mixer.
- (i) Give difference between crystalline and amorphous solids.
- (j) Give the specifications and standards for sieve.

2 Answer the following :

- (a) Explain principle, construction, working, advantages and disadvantages of crystal crystallizer with diagram. **7**
- (b) Write a note on Fluid energy mill. **6**

3 Answer the following :

(a) Write a short note on Fire hazards with their causes and preventive measurement. **7**

(b) Explain the principle of extraction along with their types. **6**

4 Answer the following :

(a) Explain Mier's supersaturation theory. **7**

(b) Explain in detail about mechanism and factors affecting of size reduction. **6**

SECTION - II

5 Answer any two out of given three questions : **2×7=14**

(a) Explain in detail about device for liquid - liquid mixing.

(b) Explain the principle, construction, working, advantages, disadvantages and uses of Ball mill with a suitable diagram.

(c) Write a note on Planetary motion mixer.

6 Answer the following :

(a) Write a detail note on factors affecting crystallization process. **7**

(b) Write a brief note on cyclone separator. **6**

7 Answer the following :

(a) Explain the process variables for flow level along their measurements. **7**

(b) Principle, material of construction, applications, advantages and disadvantages of propeller mixer. **6**

8 Answer the following :

(a) Describe the automation for temperature control. **7**

(b) Explain Soxhlet Extractor. **6**