HEF-161120107010201 00 Seat No. _____

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

December – 2017

Unit Operation - II

Time : **3** Hours] [Total Marks : **80**

Instructions : (1) Answer any three from each section except question 1 and 5 are compulsory.
(2) Figures to the right indicates marks.
(3) Draw neat and clean diagrams as required.

SECTION - I

1 Answer any **seven** out of given ten questions : **2x7=14**

(a) Define the following terms with examples:
  (a) Extraction
  (b) Mixing Index

(b) Explain impact and attrition.

(c) Define crystal habit and crystal lattice.

(d) Explain sieve number. Define and classify sieves.

(e) Define polymorphism and polymorphs with example. Define crystal hydrates and isomorphs.

(f) What is marc and menstruum?

(g) Explain automated process control system.

(h) Enlist industrial hazards.

(i) What is supercritical fluid?

(j) Write mechanism of liquid mixing.

2 Answer the following :

(a) Write down the various mechanism and modes of size reduction with a neat diagram. **7**

(b) Explain mechanism of crystallization. **6**

3 Answer the following :

(a) Explain with the help of a diagram the construction and working of a ball mill. **7**

(b) Discuss the principle and operation of Cyclone Separator. **6**

4 Answer the following :

(a) Define extraction. Write down various factors affecting extraction. **7**

(b) Write down principle, working, advantages, disadvantages & uses of sigma blade blender. **6**

SECTION - II

5 Answer any **two** out of given three questions : **2x7=14**

(a) Define crystallization. Discuss Mier's super-saturation theory of crystallization

(b) Enlist various type of extraction processes and explain any one of them in detail.

(c) Define caking of crystal. What are the various pharmaceutical application of crystallization?

6 Answer the following :

(a) Discuss Process variables in details. **7**

(b) Explain waste water management system in industry. **6**

7 Answer the following :

(a) Explain elements of computer aided manufacturing. **7**

(b) Write a note on Swenson walker srystallizaer. **6**

8 Answer the following :

(a) Explain the methods of maceration and percolation. Explain the construction and working of a tower for extraction. **7**

(b) Write a note on fluid energy mill. **6**
