



MAL-003-045601

Seat No. _____

B. Voc. (Sem. VI) (CBCS) Examination

March / April - 2018

Chemical Technology : BVCT - 601

(Pharmaceutical Engineering)

Faculty Code : 003

Subject Code : 045601

Time : 3 Hours]

[Total Marks : 70

- Instructions :**
- (1) All questions are compulsory and carry equal marks.
 - (2) Draw diagram and/or scheme wherever necessary.

1 (a) Answer the following questions : 10

- (1) Define distillation.
- (2) In binary mixture, degree of freedom is _____.
- (3) Give an example of orthorhombic crystal system.
- (4) Define Nucleation.
- (5) Write any one advantage of Spray dryer.
- (6) Enlist the applications of Fluid bed dryer.
- (7) What is size reduction ?
- (8) Define filtrate.
- (9) Give one-one example of positive and negative mixture.
- (10) What the number of sieve indicates ?

(b) Answer the following questions : 20

- (1) State Raoult's law and Dalton's law.
- (2) What is equilibrium stage ?
- (3) Define crystal lattice and crystal habit.
- (4) Write characteristics and example of Triclinic crystal system.
- (5) Write the names of any eight products that are dried using spray dryer.
- (6) Give disadvantages of Tray dryer.
- (7) Explain in brief the mechanism of size reduction.
- (8) Give construction and working principle of Metafilter.
- (9) Enlist the factors affecting mixing for fluids.
- (10) Classify mills used in size reduction.

2 Answer any four out of the following 6 questions : **20**

- (1) Give a short note on Azeotropic distillation.
- (2) (a) Derive the equation $p = p_A + p_B$.
(b) Suppose there is a mixture of 2 moles of methanol and 1 mole of ethanol at a particular temperature. The vapour pressure of pure methanol at this temperature is 81 kPa, and the vapour pressure of pure ethanol is 45 kPa. Calculate the total vapour pressure of the liquid mixture.
- (3) Write a short note on solubility curve.
- (4) Explain principle, working and construction of Spray Dryer.
- (5) Explain Ball mill in detail.
- (6) Enlist different factors which affect filtration. Discuss any three in detail.

3 Answer any four out of the following 6 questions : **20**

- (1) Write a short note on Flash distillation.
- (2) Briefly explain Swenson Walker Crystallizer.
- (3) Explain principle, working and construction of Drum Dryer.
- (4) What are Filter aids ? Discuss different methods to add filter aids in filtration process.
- (5) Discuss the equipment used for homogenization.
- (6) Write a note on cyclone separator with its schematic diagram.