B.Sc. (Part—I) (Semester—II) Examination

INDUSTRIAL CHEMISTRY

(Regular/Vocational)

Time : Three Hours] [Maximum Marks : 80

Note :—(1) Question No. **1** is compulsory and carries **8** marks.
(2) Remaining all **SIX** questions carry **12** marks each.
(3) Use of scientific calculator is allowed.
(4) Draw diagram wherever necessary.

1. (A) Fill in the blanks :— 2

(i) Long tube evaporators are also called as _____ evaporators.

(ii) Vacuum crystalliser is used for _____ sensitive material.

(iii) Ball mill works on the principle of _____.

(iv) A propeller is most commonly used for the purpose of liquid-liquid or liquid-solid _____.

(B) Choose the correct alternative :— 2

(i) Recovery of vegetable oil from cottonseeds by using organic solvents is carried out by :

(a) Filtration (b) Evaporation

(c) Leaching (d) Distillation

(ii) The objectives of evaporation is to obtain :

(a) Thin liquid (b) Thick liquid

(c) Dry solid (d) Wet solid

(iii) Which of the following dryers is an example of indirect dryer ?

(a) Spray (b) Fluid dryer

(c) Tray (d) Drum

(iv) Milk is an example of :

(a) Sol (b) Gel

(c) Emulsion (d) Miscelle

(C) Answer in **one** sentence :— 4

(i) What is auto catalysis ?

(ii) Define Kick's law.

(iii) What is filter cake ?

(iv) Define free moisture content.

UNIT—I

2. (A) Describe steam distillation. 4

(B) Give an account of bubble cap tray. 4

(C) Discuss agitated film evaporator. 4

OR

3. (P) Explain long tube evaporator. 4

(Q) Discuss single and double effect evaporation. 4

(R) Describe sieve tray. 4

UNIT—II

4. (A) Give the construction and working of packed column used in extraction. 4

(B) Explain percolation tanks. 4

(C) Discuss single and multistage extraction. 4

OR

5. (P) Give an account of rotocel. 4

(Q) Give the construction and working of Kennedy extractor. 4

(R) Explain spray column used in extraction. 4

UNIT—III

6. (A) Discuss the construction and working of Swenson-Walker crystalliser. 4

(B) Give an account of rotary dryer. 4

(C) Describe vacuum crystalliser. 4

OR

7. (P) Discuss drum dryer. 4

(Q) Explain agitated tank crystalliser. 4

(R) Give an account of fluid bed dryer. 4

UNIT—IV

8. (A) Explain jaw crusher. 6

(B) Give the construction and working of rotary drum filter. 6

OR

9. (P) Explain the screening equipment trommel. 6

(Q) Give the construction and working of plate and frame filter press. 6

UNIT—V

10. (A) Discuss the construction and working of ribbon blender. 6

(B) Explain prevention of swirling and vortex formation. 6

OR

11. (P) Give an account of double arm kneader. 6

(Q) Explain mixing of liquids with liquids. 6

UNIT—VI

12. (A) Discuss any four factors affecting adsorption. 4

(B) Explain any four applications of adsorption. 4

(C) Discuss homogeneous and heterogeneous catalysis. 4

OR

13. (P) Discuss Freundlich's adsorption isotherm. 4

(Q) Describe activation energy and catalysis. 4

(R) Explain any four properties of a catalyst. 4

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