

AP-492

- (b) Give an account of hazards with respect to storage of chemicals. 6

OR

11. (p) Explain the manufacturing process of oxygen and nitrogen with diagram. 6
- (q) Give an account of hazards and their control in petrochemical industry. 6

UNIT-VI

12. (a) Discuss the factors affecting cost and investment. 4
- (b) Discuss ordinary and exact simple interest. 4
- (c) Describe declining balance method for determining depreciation. 4

OR

13. (p) Discuss sum of years digit method for depreciation. 4
- (q) Discuss rate of return on investment method for profitability evaluation. 4
- (r) Explain cumulative cash position. 4

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6

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B.Sc. (Part-III) Semester-V Examination

INDUSTRIAL CHEMISTRY (R/V)
(Chemical Process Economics, Heavy and Fine Chemicals)

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) Give chemical equations and draw diagrams wherever necessary.
- (4) Use of calculator is allowed.

1. (a) Fill in the blanks :

- (i) Straight line method is used for determining _____ .
- (ii) In the manufacturing of Ammonia Nitrogen reacts with _____ .
- (iii) Camphor oil is extracted by _____ from the chipped wood.
- (iv) _____ is used for salting out of soap. 2

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(Contd.)

(b) Choose correct alternative :

(i) Percentage of P_2O_5 in superphosphate is :

(a) 16-20 (b) 20-25

(c) 5-10 (d) 35-40

(ii) The raw materials for manufacturing of ammonium phosphate are ammonia and ____.

(a) Nitric acid

(b) Phosphoric acid

(c) Hydrochloric acid

(d) Acetic acid.

(iii) Which of the following is not a extraction method of essential oils :

(a) Steam distillation

(b) Solvent extraction

(c) Expression

(d) Absorption.

(iv) In the manufacturing of Calcium Carbide the two raw materials used are Quick Lime and ____.

(a) Oxygen (b) Carbon

(c) Nitrogen (d) Hydrogen.

2

(q) Give an account of :

(i) Iodine value

(ii) Ester value.

6

UNIT-IV

8. (a) Explain the manufacturing process of isopropanol with diagram. 4

(b) Give the uses of :

(i) Vinyl acetate &

(ii) Acetylene.

4

(c) Explain the process of chlori-nation of methane with diagram. 4

OR

9. (p) Explain Fischer Tropsch synthesis with example. 4

(q) Explain the manufacturing process of ethylene with diagram. 4

(r) Give the uses of :

(i) Vinyl chloride and

(ii) Isopropanol.

4

UNIT-V

10. (a) Give the uses of following industrial gases :

(i) Oxygen

(ii) Nitrogen

(iii) CO_2 .

6

(c) Answer in **one** sentence :

- (i) Define depreciation.
- (ii) Define interest.
- (iii) Which essential oil is extracted from peppermint ?
- (iv) Which catalyst is used for the hydrogenation of vegetable oil ? 4

UNIT-I

- 2. (a) Explain the manufacturing of ammonium sulphate with flow diagram. 4
- (b) Give the raw materials and reactions involved in the manufacturing of ammonia with major engineering problems. 4
- (c) Explain the manufacturing process of ammonium nitrate with flow diagram. 4

OR

- 3. (p) Explain the manufacturing process of chlorine with flow diagram. 4
- (q) Give the raw materials, chemical reactions and major engineering problems involved in the manufacturing of ammonium phosphate. 4
- (r) Explain the manufacturing process of nitric acid with flow diagram. 4

UNIT-II

4. (a) Explain the manufacturing process of soda ash by Solvay Process with flow diagrams. 4
- (b) Give the raw materials and major engineering problems involved in the manufacturing of sulphuric acid. 4
- (c) Explain the manufacturing process of urea with flow diagram. 4

OR

5. (p) Explain the manufacturing process of calcium carbide with diagram. 4
- (q) Draw the flow sheet diagram for manufacturing of hydro chloric acid. 4
- (r) Explain the manufacturing process of lime with flow diagram. 4

UNIT-III

6. (a) Explain solvent extraction method for extraction of essential oil with diagram. 6
- (b) Give an account of :
- (i) Saponification value
- (ii) Acid value. 6

OR

7. (p) Give the uses of :
- (i) Turpentine
- (ii) Camphor
- (iii) Menthol. 6