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(Pre-CBCS)

(5th Semester)

CHEMISTRY

EIGHTH (B) PAPER [CHEM-354 (B)]

(Industrial Chemistry)

Full Marks : 75

Time : 3 hours

(PART : A—OBJECTIVE)

(Marks : 25)

The figures in the margin indicate full marks for the questions

SECTION—A

(Marks : 10)

Tick (✓) the correct answer in the brackets provided :

1×10=10

1. Ceramics can conduct

- (a) heat ()
- (b) electricity ()
- (c) Both (a) and (b) ()
- (d) None of the above ()

2. Lipids are important constituents of

- (a) nucleus ()
- (b) ribosome ()
- (c) biological membrane ()
- (d) All of the above ()

3. Urea is an example of

- (a) nitrogenous fertilizer ()
- (b) phosphatic fertilizer ()
- (c) potassic fertilizer ()
- (d) None of the above ()

4. Which is used in preparation of dynamite?
- (a) Glycerol ()
 - (b) Ethyl alcohol ()
 - (c) Methyl alcohol ()
 - (d) Glycol ()
5. The amount of oxygen required to oxidize only organic matter in sewage is
- (a) turbidity ()
 - (b) BOD ()
 - (c) COD ()
 - (d) DO ()
6. Which of the following is usually referred to as black gold?
- (a) Coke ()
 - (b) Coal tar ()
 - (c) Petroleum ()
 - (d) Coal ()
7. Amino acids are the building blocks of
- (a) carbohydrates ()
 - (b) nucleic acids ()
 - (c) lipids ()
 - (d) proteins ()
8. Which of the following compounds can process the flexibility applications of PVC?
- (a) Stabilizers ()
 - (b) Lubricants ()
 - (c) Plasticizers ()
 - (d) Coloring matters ()
9. The hues red, yellow and orange are generally considered as
- (a) neutral colors ()
 - (b) complementary colors ()
 - (c) warm colors ()
 - (d) high-chroma colors ()
10. The compounds present in coal tar are separated by the process of
- (a) simple distillation ()
 - (b) fractional distillation ()
 - (c) destructive distillation ()
 - (d) fractional crystallization ()

SECTION—B

(Marks : 15)

Answer the following questions :

3×5=15

1. Define mutation. What is the importance of genetic improvement in product formation?
2. What are fireclays? Write the preparation of fireclay.
3. Write a note on preservation of skins in leather industry.
4. Define octane number. Write two uses of octane number.
5. What are polyamides? Write one preparation of polyamides.

(PART : B—DESCRIPTIVE)

(Marks : 50)

The figures in the margin indicate full marks for the questions

1. (a) What is LPG? How is it obtained? 1+2=3
(b) Define micronutrient. What are the roles of micronutrients in plant? 1+3=4
(c) Give the formula of china clay. Write the preparation of china clay. 1+2=3

OR

2. (a) Describe the steps involved in the preparation of porcelain. 3
(b) Define refractories. How are they classified? Give two uses of refractories. 1+2+1=4
(c) Write a note on cleansing action of soap. 3
3. (a) Define protein. Write the functions of proteins in our body. 1+2=3
(b) Write a note on microbial enzymes. Discuss their applications. 2+2=4
(c) What do you understand by food preservation? How does refrigeration help preservation of fruits and vegetables? 1+2=3

OR

4. (a) What do you understand by food chemistry? Write the minor components of foods with an example. 1+3=4
(b) Define fermentation. Write the modes of operation in fermentation process. 1+2=3
(c) What is recombination? How is it useful in the genetic improvement of product formation? 1+2=3

5. (a) What are propellants? How are they classified? Write in brief about any one of propellants. 1+1+2=4
 (b) Write notes on the processes of dehairing and dyeing of leather. 3
 (c) Define pollution. Write a note on pollution of water by detergents and industrial wastes. 1+2=3

OR

6. (a) What is explosive? Write the explosive characteristics of lead azide. 1+2=3
 (b) Define thermal pollution. Discuss the sources and control of thermal pollution. 1+3=4
 (c) Distinguish between soft water and hard water. Discuss one method of softening of hard water. 1+2=3
7. (a) Differentiate between water gas and oil gas. 3
 (b) Define the following : 2×2=4
 (i) Cracking
 (ii) Synthetic gas
 (c) Discuss the origin and composition of coal. 3

OR

8. (a) What do you understand by coal carbonization? 2
 (b) What are the differences between synthetic gas and synthetic petrol? 3
 (c) Write different classes of coal. Discuss 'gasification of coal'. 3+2=5
9. (a) What is PVC? Write its uses. 1+2=3
 (b) Define textile industry. What are the important roles of textile designer? 1+3=4
 (c) Write the preparation and one application of polyethylene. 2+1=3

OR

10. (a) Differentiate the characteristic features between polymer industry and textile industry. 3
 (b) Define the following : 2×2=4
 (i) Polyesters
 (ii) Melamine-formaldehyde
 (c) Write a note on colour-considerations in textile industry. 3

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