



C20-CHOT-303

7285

BOARD DIPLOMA EXAMINATION, (C-20)

OCTOBER/NOVEMBER—2023

DCHOT - THIRD SEMESTER EXAMINATION

ORGANIC AND PHYSICAL CHEMISTRY

Time : 3 Hours]

[Total Marks : 80

PART—A

3×10=30

- Instructions :** (1) Answer **all** questions.
(2) Each question carries **three** marks.
(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. Write the unique characteristics of carbon.
2. Write the IUPAC name of $\text{CH}_3\text{—CH}_2\text{—COOH}$ and $\text{CH}_3\text{—CH}_2\text{—CHO}$.
3. Define primary, secondary and tertiary alcohols with examples.
4. Write the characteristics of aromatic compounds.
5. Define electrolytes. Give examples.
6. Write any three industrial applications of electrolysis.
7. Define heterogeneous equilibrium with example.
8. Define reversible and irreversible reactions with examples.
9. Define first law of thermodynamics.
10. Define enthalpy and write the equation to it.

PART—B

8×5=40

- Instructions :** (1) Answer **all** questions.
(2) Each question carries **eight** marks.
(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. (a) Write any two preparation methods and any two chemical properties of alkanes.

(OR)

(b) Explain sp , sp^2 , sp^3 hybridization of carbon with an example.

12. (a) Explain the following chemical reactions of acetone :

(i) Grignard reaction

(ii) Iodoform test

(OR)

(b) Explain the preparation of ethyl chloride from (i) Grove's method and (ii) ethylene.

13. (a) Write any two preparation methods and any two chemical properties of phenol.

(OR)

(b) Write any four chemical properties of benzene.

14. (a) Explain Faraday's laws of electrolysis.

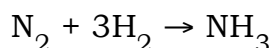
(OR)

(b) 10 amperes of current is passed through silver nitrate solution for 15 minutes. Find the weight of silver deposited on cathode (Atomic weight of Ag = 108).

15. (a) Explain Le Chatelier principle for the formation of SO_3 in contact process.

(OR)

(b) Explain law of mass action for the following equation :



PART—C

10×1=10

- Instructions :** (1) Answer the following question.
(2) The question carries **ten** marks.
(3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

16. Explain following chemical properties of acetaldehyde :

- (a) Addition with Grignard
- (b) Reaction with hydrazine
- (c) Aldol condensation
- (d) Silver mirror test

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