



C20-CHST-302

7231

BOARD DIPLOMA EXAMINATION, (C-20)

OCTOBER/NOVEMBER—2023

DCHST - THIRD SEMESTER EXAMINATION

PHYSICAL AND ORGANIC 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. Define heat of neutralization. Give one example.
2. Write any three characteristics of chemical equilibrium.
3. Explain homogeneous equilibrium with one example.
4. State any three differences between lyophilic and lyophobic colloids.
5. Define (a) emulsification and (b) emulsifier.
6. Explain ethyl chloride preparation from Grove's process.
7. Explain the properties of ethyl alcohol reaction with (a) acetic acid and (b) conc. H_2SO_4 .
8. Explain sp hybridization.
9. Explain the unique character of carbon.
10. Write any three uses of toluene.

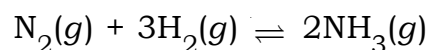
- Instructions :** (1) Answer **all** questions.
(2) Each question carries **eight** marks.
(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

- 11.** (a) Explain first law of thermodynamics and derive its mathematical equation.

(OR)

- (b) Explain endothermic and exothermic reactions with examples.

- 12.** (a) Explain Le Chatelier's principle for the preparation of ammonia by Haber's process.



(OR)

- (b) Explain the effect of temperature, pressure and concentration on equilibrium.

- 13.** (a) Explain the methods to express concentration of solutions.

(OR)

- (b) Write the preparation methods of colloids.

- 14.** (a) Explain the properties of ethyl chloride reaction with (i) KCN and (ii) AgCN.

(OR)

- (b) Explain two preparation methods and two chemical properties of alcohols.

- 15.** (a) Explain two preparation methods and two chemical properties of toluene.

(OR)

- (b) Explain two preparation methods and two chemical properties of phenol.

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 any two preparation methods of chloroform and write any two chemical properties of it.

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