C 22063	(Pages : 2)	Name
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# SECOND SEMESTER (CBCSS—UG) DEGREE EXAMINATION APRIL 2022

Chemistry

## CHE 2C 02—PHYSICAL CHEMISTRY

(2021 Admissions)

Time: Two Hours

Maximum: 60 Marks

## **Section A (Short Answers)**

Answer at least **eight** questions.

Each question carries 3 marks.

All questions can be attended.

Overall Ceiling 24.

- 1. What is isothermal process?
- 2. Discuss different types of systems.
- 3. Distinguish between extrinsic and intrinsic properties.
- 4. What is most probable velocity?
- 5. What is Maxwell distribution law of velocity?
- 6. Define Boyle's law.
- 7. What is real gas?
- 8. Define isotonic solution with example.
- 9. What are the units of viscosity? How does it vary with temperature?
- 10. Define osmosis and osmotic pressure.
- 11. What is a buffer solution?
- 12. Define specific conductance and molar conductance.

 $(8 \times 3 = 24 \text{ marks})$ 

Turn over

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## Section B (Paragraph)

Answer at least **five** questions. Each question carries 5 marks. All questions can be attended. Overall Ceiling 25.

- 13. Explain third law of thermodynamics.
- 14. Explain Gibbs free energy and its physical significance.
- 15. Derive Bragg's equation and explain its application.
- 16. How is viscosity of a liquid determined? Discuss the effect of temperature on it.
- 17. Define surface tension. How does surface tension of liquid vary with temperature.
- 18. What is electrode potential? Discuss the effect of concentration on it.
- 19. Distinguish between galvanic cell and electrolytic cell.

 $(5 \times 5 = 25 \text{ marks})$ 

## Section C (Essay)

Answer any **one** question. The question carries 11 marks.

- 20. a) What is an ideal gas?
  - b) What are the causes of deviation of gas from ideal behaviour?
- 21. Explain the following conductometric titration with graph:
  - a) Strong acid × strong base.
  - b) Weak acid × strong base.

 $(1 \times 11 = 11 \text{ marks})$