

Total No. of Printed Pages: 2

SUBJECT CODE NO: - BB-2392
FACULTY OF SCIENCE AND TECHNOLOGY
B.Sc (CBCGS)(Pattern 2022) S.Y SEM III
Examination November / December 2024
Chemistry-VIII Physical Chemistry

[Time: 1:30 Hours]**[Max. Marks: 40]**

Please check whether you have got the right question paper.

N. B

- 1) Attempt all questions.
- 2) Figures to the right indicate full marks.
- 3) Use of non-programmable calculator is allowed

Q.1 A) Fill in the blanks with the correct answer.**5**

1. Carbondioxide is a _____ component system.
2. If surface area of the adsorbent increases the total amount of the gas adsorbed will be _____
3. Einstein's mass-energy relation is given by _____
4. A reaction which takes place by absorption of the visible and UV light radiation is called a _____ reaction.
5. According to _____ law, optical density is directly proportional to thickness of absorbing medium.

B) Answer the following questions in one sentence**5**

- 1) Write Freundlich adsorption isotherm equation.
- 2) Who discovered the phase rule equation
- 3) Write the Schrodinger wave equation
- 4) Define fluorescence
- 5) What is the unit of conductance

**Q.2 Solve any three of the following****15**

- a) Discuss the water system with phase diagram.
- b) Distinguish between physical adsorption and Chemical adsorption.
- c) Calculate de-Broglie's wavelength of an electron, if mass of electron is 9.0×10^{-28} gm and moves with a Velocity 2.9×10^{10} cm/sec ($h = 6.626 \times 10^{-27}$ erg.sec)
- d) Explain experimental method for the determination of quantum yield.
- e) Give applications of colorimetry.

Q.3 Solve any five of the following

- State phase rule equation. Define component with example.
- Write Characteristics of adsorption.
- Give physical interpretation of Ψ and Ψ^2
- Derive De. Broglie's equation.
- State and explain Grothus Draper law.
- Calculate cell constant and Specific Conductance if 0.1 N solution of a Salt is placed between two platinum electrode 2 cm apart and area of cross section 4 cm^2 has resistance of 400 ohms.
- Give applications of Kohlrausch's law

