

Total No. of Printed Pages:2

SUBJECT CODE NO: BB-2304
FACULTY OF SCIENCE AND TECHNOLOGY
B.Sc. (CBCGS)(Pattern 2022) T.Y SEM V
Examination November / December 2025
Chemistry-XVIII 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) Illustrate your answer with suitable labelled diagram

Q1 Choose and write the correct answer of the following**10**

- 1) Daniell cell is an example of -----
 a) Reversible cell b) Irreversible cell c) Both a & b d) None of these
- 2) In electrochemical cell oxidation takes place at-----
 a) Cathode b) Anode c) Both a and b d) None of these
- 3) Cell which converts electrical energy into chemical energy is -----
 a) Chemical cell b) Electrolytic cell
 c) Electrochemical cell d) None of these
- 4) Electrovalent substances that form ions in solution which conduct an electric current is --
 a) Electrolytes b) Nonelectrolytes c) Both a and b d) None of these
- 5) Depression in freezing point is determined by ----method
 a) Ostwald and walker b) Landsberger's
 c) Berkley and Hartley d) Beckmann's
- 6) -----is considered as father of Nano science
 a) Einstein b) Feynman c) Bohr d) Boltzman
- 7) ---microorganisms are used to synthesise nanomaterials
 a) Bacteria b) Fungi c) Yeast d) All of these
- 8) During electrophoresis which factor does not affect the movement of charge particles
 a) Size b) Colour c) Shape d) charge
- 9) The ideal solution must obey ----
 a) Raoults law b) Henry's law c) Both a and b d) None of these



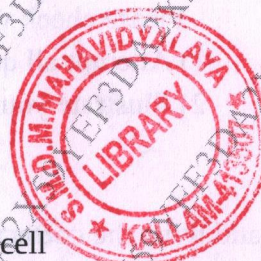
10) The critical solution temperature of phenol-water system is ---

- a) 60°C b) 68°C c) 100°C d) 200°C

Q2 Solve any four of the following

12

- Draw a labelled diagram of standard hydrogen electrode (SHE)
- Write a short note on acid-base titration
- Define the term osmosis and osmotic pressure
- Explain paper electrophoresis
- Define Raoult's law and Henry's law



Q3 Solve any two of the following

08

- Distinguish between reversible cell and irreversible cell
- Calculate the molecular mass of the substance if 0.5gm of a substance dissolved in 20 gm of benzene lowered the freezing point of benzene by 0.550°C ($k_f = 5^{\circ}\text{C/mol}$)
- Give the application of electrophoresis

Q4 Solve any two of the following

10

- Explain construction and working of Weston standard cell
- Explain High energy ball milling method for synthesis of Nanomaterials
- Explain phase diagram of phenol water system.

