

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2019
(Fifth Semester)

Branch - CHEMISTRY

PHYSICAL CHEMISTRY -1

Time : Three Hours

Maximum : 75 Marks

SECTION-A (20 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(10 x 2 = 20)

- 1 Define the term specific conductance.
2 What is ionic mobility?
3 What is meant by degree of dissociation?
4 Define Wein effect.
5 Define the term common ion effect.
What is leveling effect?
What are reversible electrodes?
What is meant by standard electrode potential?
Define electroplating.
10 What is corrosion?

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SECTION - B (25 Marks!)

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 5 = 25)

- 11 a State and explain Faraday's laws of electrolysis.
OR
b State and explain Kohlrauch's law.
12 a Write a note on Oswald's dilution law.
OR
b Explain the titration curves obtained in titration of a strong acid with strong base.
13 a Derive an expression for degree of hydrolysis of salt of weak base and strong acid.
OR
b Enumerate the applications of buffer solution.
14 a Discuss the applications of emf measurements in potentiometric acid base titrations.
OR
b Illustrate how the solubility of a sparingly soluble salt can be determined with the help of conductance measurements.
15 a Write notes on (i) Electrolysis plating (ii) electroforming
OR
b Explain the corrosion monitoring techniques with examples.

Cont...

SECTION - C (30 Marks)

Answer any THREE Questions

ALL Questions Carry EQUAL Marks (3 x 10 = 30)

- 16 Describe the principle and experimental determination of transport number by Hittrof s method.
- 17 Give an account on Debye -Huckel theory of strong electrolytes.
- 18 Discuss the following theories of acids and bases with examples. A) Lewis theory b) Bronsted-Lowry theory
- 19
 - a) Give an account of electrochemical series and its applications.
 - b) How will you determine the pH of a solution using quinhydrone electrode?
- 20 Discuss the following coating process with suitable examples.
 - a) Hot dip process b) concentrating process c) electrophoretic methods.

Z-Z-Z

END