

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2024
(Third Semester)

Branch – PHYSICS

CHEMISTRY - I

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (5 x 1 = 5)

- The EAN of nickel in $\text{Ni}(\text{CO})_4$ is
i) 32 ii) 34 iii) 36 iv) 38
- Biodegradable polymer which can be produced from glycine and aminocaproic acid is ?
i) PHBV ii) Buna-N iii) Nylon-2-nylon-6 iv) Nylon-6,6
- The coordination number of fcc is
i) 12 ii) 6 iii) 8 iv) 2
- The rate constant of second reactions has the unit
i) s^{-1} ii) $\text{mol}^{-1} \text{L}^{-1} \text{s}^{-1}$ iii) $\text{L}^2 \text{mol}^{-2} \text{s}^{-1}$ iv) $\text{mol}^{-1} \text{L} \text{s}^{-1}$
- The number of molecules reacted or formed per photon of light absorbed is called
i) Quantum efficiency ii) Quantum yield
iii) Quantum productivity iv) None of these

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 3 = 15)

- a) Give the preparation and uses of sodium hydrosulphite.
OR
b) Write a note on EAN rule.
- a) How is Piperine isolated? Give its application.
OR
b) Briefly explain the Biodegradable polymers.
- a) Explain the following terms:
i) Centre of symmetry ii) Axis of symmetry
OR
b) Write a note on: i) BCC ii) FCC
- a) Give an account on: i) Half-life period ii) Gold number
OR
b) How will you determine the order of a reaction?
- a) Explain laws of photochemistry.
OR
b) Briefly explain about the general characteristics of catalysis.

Cont...

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

11. a) Explain the preparation, properties and structure of BrF_3 and IF_5 .
OR
b) Describe the use of EDTA in the estimation of the hardness of water.
12. a) Give an account on mordant dyes and vat dyes.
OR
b) Give the isolation and uses of citral and camphor.
13. a) Briefly explain about Weiss and Miller indices.
OR
b) Discuss the structure of diamond and graphite.
14. a) Derive an expression for the half life period of a second order reaction.
OR
b) Discuss the types and properties of colloids.
15. a) Write a note on: i) Promoters ii) Catalytic poisoning
iii) Negative catalysis
OR
b) Explain the mechanism of enzyme catalysis.

Z-Z-Z

END