

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2023
(Fourth Semester)

Branch – ZOOLOGY

CHEMISTRY - II

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

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

- 1 Which of the following statements about coordination compounds' bonding concept is incorrect?
(i) Crystal Field Theory (ii) VSEPR Theory
(iii) Valence Bond Theory (iv) Molecular Orbital Theory
- 2 Mention the main structural feature of protein
(i) Ester linkage (ii) Peptide linkage
(iii) Ether linkage (iv) All of these
- 3 Which of the following is an example of basic dye?
(i) Alizarin (ii) Malachite green
(iii) Indigo (iv) Orange I
- 4 Identify the statement that is not correct for Kohlrausch's law
(i) The law is valid at infinite dilution
(ii) The law is valid for weak electrolytes only
(iii) The basis of law is the independent migration of ions
(iv) None of these
- 5 Find the non-toxic and green solvent.
(i) Liquified carbon dioxide (ii) Benzene
(iii) Carbon tetrachloride (iv) Toluene

SECTION - B (15 Marks)

Answer ALL Questions

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

- 6 a Describe about coordination compounds and ligands.
OR
b Outline the triple superphosphate, manufacture.
- 7 a Describe what is a heterocyclic compound? Classify it.
OR
b How will you prepare furan and thiophene?
- 8 a How will you prepare alizarin dye?
OR
b Describe the concept of chromophores and auxochromes.

- 9 a Explain what is quantum yield?
OR
b Narrate about the buffer solutions.
- 10 a Describe the role of sulphur proteins in biological systems.
OR
b Narrate about Fluoride toxicity.

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks (5 x 6 = 30)

- 11 a Infer the "EAN rule" in coordination chemistry. Point out its applications.
OR
b Discuss Werner's theory in detail.
- 12 a What are zwitter ions? Outline the preparation of glycine.
OR
b Discuss the structures of proteins in detail.
- 13 a Classify the dyes based on their chemical structure.
OR
b Elucidate the preparation of Malachite green and Phenolphthalein dyes.
- 14 a Analyze the fluorescence and phosphorescence using Jablonski diagram.
OR
b Summarise Kohlrausch's Law and mention its applications.
- 15 a Discuss the role of essential and trace elements in biological systems.
OR
b Describe the scope of green chemistry.

Z-Z-Z

END