

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2022
(Fourth Semester)

Branch – ZOOLOGY

CHEMISTRY - II

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (10 x 1 = 10)

- 1 Identify the metal atom present in Hemoglobin
(i) Iron (ii) Chromium
(iii) Nickel (iv) Copper
- 2 Find out the molecular formula for Urea
(i) N_2H_2CO (ii) NH_2CONH_2
(iii) $HCONH_2$ (iv) $CONH_3$
- 3 The pH of neutral amino acid is
(i) 4 (ii) 5 (iii) 6 (iv) 7
- 4 Which is optically inactive amino acid?
(i) alanine (ii) glycine (iii) leucine (iv) valine
- 5 Name the Antiseptic drug
(i) Tetracycline (ii) Sulphapyridine
(iii) Isopropyl alcohol (iv) Penicillin
- 6 Identify the Chromophoric group present in azo dyes
(i) $-N=N-$ (ii) >C=O (iii) $-OH$ (iv) $-NH_2$
- 7 When dilution increases. Equivalent Conductance _____
(i) Increases (ii) Decreases
(iii) Remains Same (iv) Both (i) & (ii)
- 8 Which is called Phosphorescence
(i) Chemiluminescence (ii) Faraday's emission
(iii) Delayed Fluorescence (iv) Emission of photon
- 9 Potassium ions are mostly present in _____ body fluids
(i) Intracellular (ii) Extracellular
(iii) Blood (iv) Muscles
- 10 Recommended dietary intake of Zinc for an adult per day is
(i) 20 mg (ii) 15 mg (iii) 12 mg (iv) 17 mg

Cont...

SECTION - B (25 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks (5 x 5 = 25)

- 11 a How will you prepare Urea? Bring out the differences between Natural and Artificial fertilizer.
(OR)
- b Explain Werner's theory of Co-ordination Compounds.
- 12 a How will you classify the amino acids? Give one example for each Classification.
(OR)
- b Sketch and Explain the secondary structure of proteins.
- 13 a Compare Antiseptics and Antipyretics
(OR)
- b How will you prepare phenolphthalein and explain its industrial uses.
- 14 a State and Explain Buffer and its importance in living system.
(OR)
- b Derive Beer- Lambert's Law.
- 15 a Discuss about the role of trace elements in biological system
(OR)
- b Outline the industrial uses of Heavy metals.

SECTION - C (40 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks (5 x 8 = 40)

- 16 a i) Narrate the biological importance of Chlorophyll (4)
ii) What is EDTA? Discuss how the Hardness of water is determined using EDTA (4)
(OR)
- b Explain in detail about Nitrogen Fixation.
- 17 a i) Summarize the mechanism of Enzyme action (4)
ii) Discuss about the Isoelectric point of amino acids (4)
(OR)
- b Describe the manufacture of ethyl alcohol from Molasses.
- 18 a i) Outline the mode of action of Sulpha Drugs (4)
ii) Classify the dyes based on application and give examples (4)
(OR)
- b i) What are Auxochromes and Chromophores. Give examples (4)
ii) Write the preparation of Alizarin (4)
- 19 a State and Explain Ostwald's dilution law.
(OR)
- b Explain the following with examples.
i) Phosphorescence ii) Fluorescence
- 20 a List out the twelve principles of Green Chemistry and give any two green Synthesis.
(OR)
- b Discuss the role of Hemoglobin and Myoglobin in oxygen transport and storage.