18CHU22

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2024
(Sixth Semester)

Branch – **CHEMISTRY**

ORGANIC 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 Quinoline undergoes nucleophilic substitution on heating with $NaNH_2$ gives
(i) 2-aminoquinoline (ii) 3-aminoquinoline
(iii) 4-aminoquinoline (iv) 8-aminoquinoline

2 An aqueous solution of glycine is neutral because of the formation of
(i) carbanion (ii) zwitter ion
(iii) carbonium ion (iv) free radical

3 The reduction of aldehydes or ketones in the presence hydrazine and aq. KOH gives corresponding alkanes. This reaction is called
(i) MPV reduction (ii) Oppenauer oxidation
(iii) Birch reduction (iv) Wolff-Kishner reduction

4 Which of the following reactions are favoured by polar aprotic solvent?
(i) S_N1 (ii) S_N2
(iii) both S_N1 and S_N2 (iv) neither S_N1 nor S_N2

5 The stable form of cyclohexane is
(i) chair (ii) boat
(iii) twist boat (iv) half chair

SECTION - B (15 Marks)
Answer **ALL** Questions
ALL Questions Carry **EQUAL** Marks (5 x 3 = 15)

6 a Discuss the aromatic nature of heterocyclic compounds.
OR
b How will you prepare primary, secondary and tertiary alcohols from Grignard reagent?

7 a Write a note on DNA and RNA.
OR
b How are protein classified?

8 a Interpret the mechanism of pinacol-pinacolone rearrangement.
OR
b Discuss any three uses of $LiAlH_4$.

9 a Explain Saytzeff rule with examples.
OR
b Discuss benzyne mechanism.

10 a Write a note on cis-trans isomerism of substituted cyclopropane.
OR
b Draw the axial and equatorial conformations of cyclohexane.

Cont...

SECTION -C (30 Marks)

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

11 a Interpret the reactions of furan with following reagents.
(i) SO_3 and Pyridine/ 70°C (ii) Acetic anhydride/BF_3 (iii) H_2/Ni

OR

b (i) Identify product when cyclohexene reacts with OsO_4 followed by hydrolysis.
(ii) Find the product when diphenylmethane reacts with SeO_2 at 200°C.

12 a Interpret the method of end group analysis of peptides.

OR

b Illustrate the primary and secondary structure of protein.

13 a Derive the mechanism of Hofmann rearrangement.

OR

b Discuss the mechanism of Birch reduction.

14 a Describe the general mechanism of S_N1 and S_N2 reactions

OR

b Explain the mechanism of E1 and E2 reactions with examples.

15 a Discuss the stability of cycloalkanes on the basis of Bayer's strain theory.

OR

b Analyze the various conformations of n-butane.

Z-Z-Z END