PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
MSc DEGREE EXAMINATION MAY 2019
(Second Semester)

Branch-CHEMISTRY

ORGANIC CHEMISTRY - II

Time: Three Hours Maximum: 75 Marks

SECTION-A gp Marks)
Answer ALL questions
ALL questions carry EQUAL marks (10x1 = 10)

1 Stork-Enamine reaction is used for
(i) C-halogenation (ii) C-alkylation at less hindered site
(iii) C-alkylation at more hindered site (iv) O-alkylation

2 The number of unshared electrons on the carbine carbon is
(i) 1 (ii) 2
(iii) 3 (iv) 4

3 The reaction $CH_3CH_2BrHU_2H_50'$-» C^K^+QHsOH+Br' is an example of
(i) reaction (ii) $E_2$ reaction
(iii) E| CB reaction (iv) Ei reaction

4 Among the following reduction reaction which one gives the free radical intermediate?
(i) MPV reduction (ii) Clemmenson reduction
(iii) Birch reduction (iv) Wolff-Kishner reduction

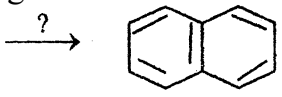
5 Which of the following does not follow Markownikov rule?
(i) $CH_3$-CH=$CH_2$ (ii) $CH_3$-$CH_2$-CH=$CH_2$
(iii) $(CH_3)_2$CH-CH=$CH_2$ (iv) $CF_3CF=CH_2$

6 Which of the following is a product formed in Claisen Condensation?
(i) p-ester (ii) P-ketone
(iii) p-keto ester (iv) p-diketone

7 Robinson annulation is
(i) synthesis of steroids and terpenes
(ii) synthesis of osmium tetroxide
(iii) synthesis of diazotination of aminoacetic ester
(iv) synthesis of sodamide

8 $CH_3COCH_2$+$CH_2CH=CH_2$ $\underline{H_2/caty}CH_3CHO$ $HCH_2CH_2CH_2CH_3$
(i) carbonyl group protection (ii) Amino groupprotection
(iii) Alchohol group protection (iv) Carboxylic group protection

9 Select the suitable agent for the following reaction




(i) DDQ (ii) Gilmans reagent
(iii) $NaBH_4$ (iv) LAH

10 Wilkinson's Catalyst is
(i) [Rn$(CO)_2I_2$y (ii) [$(PPh_3)_3$Rh Cl]
(iii) [$Co_2$(CO)g] (iv) [$ph_3p)_2$Rh(CO) (Cl)]

## SECTION - B (25 Marks)

Answer ALL questions

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

11 a Explain SE mechanism for aliphatic electrophilic substitution reaction.

OR

b Explain Kolbe-Schmid carboxylation reaction and give the mechanism.

12 a State and explain Bredt's rule with suitable examples.

OR

b Discuss the mechanism of oppenaur oxidation reaction.

13 a Explain the peroxide effect with examples.

OR

b Explain Stobbe reaction with mechanism.

14 a Explain functional group interconversions with an example.

OR

b Explain the two group disconnections of 1,5 difunctional compound.

15 a What is a Phase transfer catalyst? Give example with the role that such a catalyst plays.

OR

b Discuss the importance of Tributyltin hydride in organic synthesis.

## SECTION -C (40 Marks)

Answer ALL questions

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

16 a Write a short note on orienting effect and reactivity in aromatic electrophilic substitution reaction.

OR

b Explain the following reaction highlighting their mechanism,
i) Gatterman-Koch reaction ii) Hofmann-Martius reaction (4+4)

17 a State Hofmann and Saytzeff elimination rules and explain them with example each.

OR

b Discuss the mechanism of the following reactions.
i) MPV reduction ii) Clemmenson reaction (4+4)

18 a Discuss the epoxidation and hydroboration of alkenes with example.

OR

b Discuss the mechanism of the following reactions.
i) Mannich reaction ii) Benzoin condensation (4+4)

19 a Explain about synthons and synthetic equivalents with suitable examples.

OR

b Explain about one group connection in alcohol and amino groups.

20 a Discuss the importance of the following reagents in organic synthesis,
i) DDQ ii) Trimethyl silyl iodide iii) Gilmans reagent (2+3+3)

OR

b Discuss the application of the following reagents.
i) sodium borohydride ii) 1,3 dithane iii) Lithium Alumiinium Hydride (2+3+3)

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END