

ORGANIC CHEMISTRY – II

CODE: OCA

STD: XII

MARKS:75
TIME: 1½ HR
10X1=10

I. CHOOSE THE BEST ANSWER:

- 2-methyl butanoic acid is
 - $\text{CH}_3\text{CH}_2\text{-CH-COOH}$
 - $\text{CH}_3\text{-CH-COOH}$
 - $\text{CH}_3\text{-CH(CH}_3\text{)-CH}_2\text{-COOH}$
 - $\text{CH}_3\text{-CH(CH}_3\text{)-CH}_2\text{-COOH}$
- The Strongest acid among the following is
 - CH_3COOH
 - HCOOH
 - ClCH_2COOH
 - $\text{CH}_3\text{CH}_2\text{-COOH}$
- Oxalic acid is an active poison depressing
 - Kidney
 - Lungs
 - Heart
 - Central Nervous System
- The compound used in the detection and estimation of alcoholic and amino groups is
 - CH_3COOH
 - CH_3CONH_2
 - CH_3COCl
 - HCOOH
- Nitromethane condenses with acetaldehyde to give
 - nitropropane
 - 1-nitro-2-propanol
 - 2-nitro-1-propanol
 - 3-nitropropanol
- Which of the following will not undergo diazotisation?
 - m-toluidine
 - Aniline
 - p-aminophenol
 - Benzylamine
- Important constituent of cell wall is
 - Lipid
 - Cellulose
 - Protein
 - Vitamin
- The amino acid without chiral carbon is
 - Glycine
 - Alanine
 - Proline
 - tyrosine
- Substances which bring the body temperature down to normal temperature are known as
 - Antipyretics
 - Analgesics
 - Antibiotics
 - None
- In the compound $\text{O}_2\text{N-C}_6\text{H}_4\text{-N}=\text{N-C}_6\text{H}_4\text{-N(CH}_3\text{)}_2$ the chromophore is
 - $-\text{NO}_2$
 - $-\text{N}=\text{N}^-$
 - $-\text{NO}_2$ And $-\text{N}=\text{N}^-$
 - $-\text{N(CH}_3\text{)}_2$

II. GIVE ANSWER IN ONE OR TWO SENTENCES

10X3=30

- Explain functional isomerism with respect to monocarboxylic acids.
- Account for the following
 - Carboxylic acid lower members boil at higher temperature.
 - Higher members of carboxylic acid are insoluble in water.
- Write mechanism for esterification reaction.
- Predict the reagents X and Y
 - $\text{CH}_3\text{COOH} \xrightarrow{\text{X}} \text{CH}_3\text{CH}_3$
 - $\text{C}_6\text{H}_{12}\text{O}_6 \xrightarrow{\text{Y}} 2\text{CH}_3\text{COCHO}$
- Draw resonance structures for nitrobenzene.
- Write note on Gabriel's phthalimide synthesis.
- How is N-benzyl acetamide prepared?
- Draw structure of sucrose.
- What is Zwitter ion.
- What are analgesics? Give examples.

III. GIVE SHORT ANSWERS:

3X5=15

- Complete the following equations
 - $\text{CH} \equiv \text{CH} \xrightarrow{\text{H}_2\text{SO}_4/\text{Hg}^{2+}} \text{(A)} \xrightarrow{\text{HCN}} \text{(B)} \xrightarrow{\text{KOH}} \text{(C)}$
 - $\text{(B)} \xrightarrow{\text{H}^+} \text{(C)}$
- An organic compound (A) with molecular formula $\text{C}_6\text{H}_7\text{N}$ gives (B) with HNO_2/HCl at 273K. The aqueous solution of 'B' on heating gives compound (C) which gives violet colour with neutral FeCl_3 . Identify the compounds, A, B, and C and write the equations.
- How are the following prepared? (A) Terylene (B) Nylon(66)

III. GIVE DETAILED ANSWERS:

2X10=20

- (A) How would you convert the following into benzoic acid.
 - Toluene
 - Benzyl Alcohol
 - Benzonitrile
 - Propyl benzene
 - Benzotrichloride(B) What happens when.
 - Acetamide is treated with $\text{Br}_2/\text{alc.KOH}$
 - Benzoyl chloride is treated with aniline in presence of NaOH
 - Methyl cyanide is reduced with H_2/Ni
- (A) What are the reagents that would convert the following into ethylamine?
 - CH_3CONH_2
 - CH_3CN
 - $\text{CH}_3\text{CH}_2\text{NO}_2$
 - $\text{CH}_3\text{CH}=\text{NOH}$(B) Show the formation of peptide bond with an equation.

ORGANIC CHEMISTRY – II

CODE: OCB

STD: XII

I. CHOOSE THE BEST ANSWER:

MARKS:75

TIME: 1½ HR

10X1=10

1. Formula for stearic acid is
a) $C_{17}H_{35}COOH$ b) $C_{15}H_{31}COOH$ c) $C_{16}H_{33}COOH$ d) $C_{17}H_{31}COOH$
2. Acetic acid when heated with P_2O_5 gives
a) Acetic anhydride b) Acetyl chloride c) Acetamide d) Nitroethane
3. The compound found in some stony deposits in kidneys and bladder in human body is
a) Formic acid b) Oxalic acid c) Propionic acid d) Succinic acid
4. The acid that cannot be prepared by Grignard reagent is
a) CH_3COOH b) $HCOOH$ c) Butyric acid d) Benzoic acid
5. Electrophile used in the nitration of benzene is
a) H_3O^+ b) $-SO_3H$ c) NO_2^+ d) Br^-
6. The reagent used in stephan's reaction is
a) $SnCl_2/HCl$ b) $Zn-Hg/HCl$ c) N_2H_4/C_2H_5ONa d) $CH_2=CH-CN$
7. Glucose is not oxidized to gluconic acid by
a) Br_2/H_2O b) Fehling's Solution c) Tollen's reagent d) conc. HNO_3
8. Benzene diazonium chloride when reacted with benzene in an alkaline medium gives
a) Phenol b) Toluene c) Biphenyl d) Aniline
9. The drug used to treat pneumonia is
a) Anisotropine b) Atropine c) Paracetamol d) Penicillin
10. In the compound $H_2N-C_6H_4-N=N-C_6H_5$ the chromophore is
a) $-NO_2$ b) $-NH_2$ c) $-N=N-$ d) C_6H_5

II. GIVE ANSWER IN ONE OR TWO SENTENCES

10X3=30

11. How will you convert methyl cyanide to acetic acid ?
12. Write mechanism for esterification.
13. Carboxylic acids do not form addition products with HCN and N_2H_4 etc. Why?
14. How is lactide prepared ?
15. How is chloropicrin prepared ?
16. How is nitrobenzene reduced in neutral medium ?
17. Ethylamine is more basic than ammonia ? Why ?
18. Write note on Gabriel's phthalimide reaction.
19. Draw structure for sucrose.
20. Define chemotherapy.

III. GIVE SHORT ANSWERS:

3X5=15

21. Explain briefly on colour and structure of dyes ?
22. Explain the structure elucidation of glucose.
23. Write note on coupling reactions of benzene diazonium chloride.

III. GIVE DETAILED ANSWERS:

2X10=20

24. A) How is benzoic acid obtained from
(i) ethyl benzene (ii) phenyl cyanide (iii) CO_2
B) Identify A, B and C
 $CH \equiv CH \xrightarrow{H_2SO_4/Hg^{2+}} A \xrightarrow{HCN} B \xrightarrow{H_3O^+} C$
25. A) Give the structure of A, B, C and D
 $CH_3CH_2OH \xrightarrow{PCl_5} (A) \xrightarrow{KCN} (B) \xrightarrow{H_2O} (C) \xrightarrow{\text{Soda lime}} (D)$
B) What happens when ethylamine is treated with
(i) $CHCl_3/NaOH$ (ii) CS_2 (iii) $COCl_2$ (iv) C_6H_5CHO

