*Total No. of Questions: 6* *Total No. of Printed Pages:2*

**Enrollment No.....**

# Faculty of Pharmacy

## End Sem (Even) Examination May-2022

## PY3CO06 Pharmaceutical Organic Chemsitry

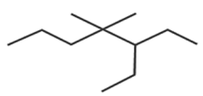
Programme: B. Pharma. Branch/Specialisation: Pharmacy

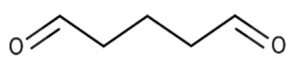
**Duration: 3 Hrs.** **Maximum Marks: 75**

Note: All questions are compulsory. Internal choices, if any, are indicated.

Q.1
- i. What is Catenation? Name any two compounds that shows catenation property. **2**
- ii. Give the full form of IUPAC. Name first two members of Alkene family **2**
- iii. Alkanes are also known as …… and ……. is the another name of Alkenes. **2**
- iv. …….. Hybridization is observed in Ethane and ……. Hybridization is observed in Ethene. **2**
- v. Give the structure of- Tetrachloromethane, Chlorobutanol. **2**
- vi. What are Alcohols? Give two examples. **2**
- vii. Define Carbonyl compounds. **2**
- viii. Give the structure and 1 use of Chloral hydrate. **2**
- ix. What is Inductive effect? **2**
- x. Give sodium bicarbonate test for the identification of carboxylic acids. **2**

Q.2 Attempt any two:
- i. What are Isomers? Define structural isomerism. Explain classification of structural isomerism with one example in each class. **10**
- ii. What are Electrophilic addition reactions? Explain the mechanism of Electrophilic addition reaction of conjugated dienes. **10**
- iii. (a) Give the general rules for IUPAC nomenclature of organic compounds. Give the IUPAC name of following compounds: **5**






(b) Discuss in detail Markonikov's Rule and Saytzeff Rule with examples. **5**

P.T.O.



Q.3 Attempt any seven: Two questions from each section is compulsory.

Section - A
- i. Give two qualitative tests used for distinguishing between 1º, 2º and 3º alcohols. **5**
- ii. Explain SN1 and SN2 reactions. **5**
- iii. Give the structure and uses of the following: **5**
  (a) Iodoform (b) Chlorobutanol

Section - B
- iv. Why do carbonyl compounds undergo Nucleophilic Substitution reaction? Amongst aldehydes and ketones which is more reactive towards Nucleophilic Substitution reaction and why? **5**
- v. Discuss in detail about Crossed aldol condensation reaction. **5**
- vi. Give qualitative tests for identification of aldehydes and ketones. Give the structure and two uses of Paraldehyde. **5**

Section - C
- vii. What is the effect of substituents on acidity of Carboxylic acids? **5**
- viii. Give the structure and uses of the following: **5**
  (a) Acetyl salicylic acid (b) Amphetamine
- ix. What is the effect of substituents on basicity of Amines? **5**

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## Marking Scheme PY3CO06 Pharmaceutical Organic Chemsitry

Q.1 i. Catenation definition 1 Mark **2**
Name any two compounds (Carbon, Silicon, Sulphur, Phosphorus, Germanium, Arsenic, Bismuth) 1 Mark

ii. IUPAC full form- International Union of Pure and Applied Chemistry **2**
1 Mark
Alkene family first 2 members (Ethene, Propene) 1 Mark

iii. Paraffins 1 Mark **2**
Olefins 1 Mark

iv. Sp3 1 Mark **2**
Sp2 1 Mark

v. Structure of- Tetrachloromethane 1 Mark **2**
Structure of Chlorobutanol. 1 Mark

vi. Alcohols definition 1 Mark **2**
Any 2 examples (Ethanol, Propanol, Chlorobutanol, Methanol)
1 Mark

vii. Carbonyl compounds Definition 2 Marks **2**

viii. Chloral hydrate.structure 1 Mark **2**
1 use of Chloral hydrate. 1 Mark

ix. Inductive effect definition 1 Mark **2**

x. When carboxylic acids react with sodium bicarbonate solution carbon dioxide is evolved with a brisk effervescence along with sodium acetate is formed. **2**
$RCOOH+NaHCO_3$---> $RCOONa + H_2O + CO_2$ 2 Marks

Q.2 Attempt any two:

i. Isomerism definition 2 Marks **10**
Definition of structural isomerism 2 Marks
Explanation of chain, positional, functional, Tautomerism, Metamerism and ring chain isomerism with example
6 Marks

ii. What are Electrophilic addition reactions 2 Marks **10**
Explain the mechanism of Electrophilic addition reaction of conjugated dienes. 8 Marks

iii. (a) Rules for IUPAC nomenclature 3 Marks **5**
IUPAC name (3- ethyl-4, 4-dimethylheptane) 1 Mark
Pentanedial 1 Mark
(b) Markonikov's Rule with examples. 2.5 Marks **5**
Saytzeff Rule with examples. 2.5 Marks

Q.3 Attempt any seven: Two questions from each section is compulsory.

Section - A

i. 2 qualitative tests used for distinguishing between 1º, 2º and 3º alcohols. 5 Marks **5**

ii. SN1 and SN2 reactions explanation 5 Marks **5**

iii. (a) Iodoform Structure 1 Mark **5**
uses 1.5 Marks
(b) Chlorobutanol Structure 1 Mark
Uses 1.5 Marks

Section - B

iv. Why do carbonyl compounds undergo Nucleophilic Substitution reaction 3 Marks **5**
Amongst aldehydes and ketones which is more reactive towards Nucleophilic Substitution reaction and why 2 Marks

v. Explanation of Crossed aldol condensation reaction. **5**
5 Marks

vi. Qualitative tests for identification of aldehydes and ketones **5**
3 Marks
Give the structure and two uses of Paraldehyde. 2 Marks

Section - C

vii. Explanation of effect of substituents on acidity of Carboxylic acids **5**
5 Marks

viii. structure and uses of **5**
(a) Acetyl salicylic acid 2.5 Marks
(b) Amphetamine 2.5 Marks

ix. Explanation of effect of substituents on basicity of Amines **5**
5 Marks

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