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BP 202 T

BINA CHOWDHURY CENTRE  
(MIMT & GIPS)  
Apurva Hatki Swapan  
Kawahat 751017

Roll No. of candidate

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2020

B.Pharm. 2<sup>nd</sup> Semester End-Term Examination

PHARMACEUTICAL ORGANIC CHEMISTRY - I

(New Regulation)

Full Marks – 75

Time – Three hours

The figures in the margin indicate full marks  
for the questions.

1. Answer the following questions : (MCQ) (20 × 1 = 20)
- (i) Which of the alkanes would have only the primary and tertiary carbons?
- (a) n-Pentane (b) 2,2-Di methyl butane
- (c) 2,3-Di methyl butane (d) 2-Methyl butane
- (ii) Hybridization involves
- (a) ionically bonded compounds
- (b) resonance and calculation of formal charges
- (c) the mixing of atomic orbitals
- (d) individual atomic orbitals on a lone atom
- (iii) Which of the following alkenes will give only acetaldehyde on ozonolysis?
- (a) 2-butene (b) 1-butene
- (c) acetylene (d) ethylene
- (iv) Which of the following compounds will not be *easily* oxidised?
- (a) Primary alcohols (b) Secondary alcohols
- (c) Tertiary alcohols (d) Aldehyde
- (v) Which of the following is the strongest acid?
- (a) Formic acid (b) Acetic acid
- (c) Trichloroacetic acid (d) Trifluoroacetic acid

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- (vi) When NaOH is used as nucleophile in elimination reaction, it will produce
- (a) Alkanes (b) Alkenes  
(c) Aldehydes (d) Ketones
- (vii) A primary amine can be identified by using
- (a) Hydrochloric acid  
(b) Chloroform  
(c) Sodium hydroxide  
(d) Potassium hydroxide and Chloroform
- (viii) The appearance of a silver mirror in Tollen's test indicates the presence of
- (a) A ketone (b) An aldehyde  
(c) An alcohol (d) An alkene
- (ix) The compound which is least soluble in water is
- (a) Glycerol (b) Ethylene glycol  
(c) Ethyl alcohol (d) Ethyl chloride
- (x) The number of isomers of  $C_6H_{14}$  is
- (a) 6 (b) 5  
(c) 4 (d) 3
- (xi) Acetic acid undergoes reduction with  $LiAlH_4$  to give
- (a) Ethanal (b) Ethanol  
(c) Ethane (d) Ethyne
- (xii) Amines are generally classified as
- (a) Weak acids (b) Strong acids  
(c) Weak bases (d) Strong bases
- (xiii) Which of the following compounds reacts most readily by  $S_N1$  mechanism?
- (a) Methyl chloride (b) Ethyl chloride  
(c) Isopropyl chloride (d) Ter-butyl chloride
- (xiv) Propadiene,  $H_2C=C=CH_2$ , is
- (a) a planar compound (b) a cumulated diene  
(c) an isolated diene (d) a conjugated diene
- (xv) Which of the following will give an iodoform test?
- (a) Benzoic acid (b) Ethanol  
(c) Benzyl chloride (d) Methanol

- (xvi) What is term used for reaction of an alkane and a halogen?  
(a) substitution reaction (b) elimination reaction  
(c) dehydrohalogenation (d) None of these
- (xvii) Which of the following compounds is isomeric with trimethyl amine?  
(a) 1-propanamine (b) 2-propanamine  
(c) both (d) None
- (xviii) The IUPAC name of the compound,  $\text{CH}_2=\text{CH}-\text{CH}(\text{CH}_3)_2$  is  
(a) 1,1-Dimethyl-2-propene (b) 3-Methyl-1-butene  
(c) 1-isopropyl ethylene (d) 2-vinyl propene
- (xix) Homolytic bond cleavage gives  
(a) Cation (b) Anion  
(c) Radicals (d) Both anion and cation
- (xx) Hinsberg reagent is  
(a)  $\text{Pd}+\text{BaSO}_4$  (b) p-toluenesulphonic acid  
(c)  $\text{H}_2\text{N}-\text{NH}_2 + \text{KOH}$  (d) benzenesulfonic acid

2. Answer any SEVEN questions: (7 × 5 = 35)

- Write the IUPAC rules for the nomenclature of Ketones.
- Explain any two electrophilic addition reactions of alkenes in the light of Markovnikov and antimarkovnikov additions.
- Compare  $\text{S}_\text{N}1$  reactions with  $\text{S}_\text{N}2$  reaction of alkyl halides.
- Write a note on qualitative tests of Alcohols
- Explain the acidity of carboxylic acids with suitable illustration.
- Discuss on addition reactions of conjugated dienes.
- Classify organic compounds with minimum 3 examples from each category.
- Describe structural isomerism with examples in brief.
- Write various methods of preparation of Alkanes.

3. Answer any TWO questions (2 × 10 = 20)

- What do you understand by Electromeric effect? Explain the mechanism of any three reactions: (1+(3 × 3) = 10)
  - Perkin condensation reaction
  - Halogenation of alkanes
  - Diels-Alder reaction
  - Crossed Cannizzaro reaction

- (b) (i) What is Saytzeff Rule? Discuss Elimination reactions with evidence of Saytzeff orientation.
- (ii) Describes  $SP^2$  hybridization of alkenes.
- (c) Draw the structure along with the use of the following compounds:
- (i) Tartaric acid
- (ii) Ethylenediamine
- (iii) Methyl alcohol
- (iv) Iodoform
- (v) Formaldehyde
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