



SECTION - D

(Answer any two questions. Each carries a weightage of 4)

19. a) Describe the preparation of naphthalene by Haworth synthesis.
b) Narrate the mechanism of chlorination of methane.
20. Explain the influence of resonance effect and hyperconjugation in the properties of organic molecules.
21. Write short note on
a) D-L designation
b) R-S notation
c) Chirality
d) Mesoform. (2×4=8 Weightage)

SECTION - C



Reg. No. :

Name :

V Semester B.Sc. Degree (CCSS-Reg./Supple./Imp.)

Examination, November 2015

Core Course in CHEMISTRY

5B 09 CHE : Organic Chemistry - 1

Time : 3 Hours

Max. Weightage : 25

SECTION - A

Answer all questions. Choose the correct answer. Each bunch of four questions carries a weightage of 1.

1. i) The IUPAC nomenclature of $\text{HO}-\text{CH}_2-\text{CH}_2-\text{COOH}$ is
a) 2-hydroxyethanoic acid b) 3-hydroxypropanoic acid
c) 2-carboxyethanol d) 2-hydroxy propanoic acid
- ii) The principal functional group in the following compound is
- $$\text{H}_3\text{C}-\overset{\text{Cl}}{\underset{|}{\text{CH}}}-\text{CH}(\text{Br})-\text{CH}_2-\overset{\text{NO}_2}{\underset{|}{\text{CH}}}-\text{CH}_3$$
- a) chloro b) bromo c) nitro d) none of these
- iii) Kolbe's electrolysis of sodium butyrate gives
a) C_8H_{16} b) C_6H_{14} c) C_8H_{18} d) C_6H_{12}
- iv) When propyne is passed through hot iron tube at 400°C , it gives
a) benzene b) toluene
c) mesitylene d) 1, 3, 5-trimethyl benzene
2. i) Electrophile involved in the sulphonation of benzene is
a) H_2SO_4 b) HSO_3^+ c) SO_3 d) HSO_4^-
- ii) Friedel-Crafts reaction between benzene and n-propyl chloride results in the formation of
a) n-propyl benzene b) iso propyl benzene
c) toluene d) xylene
- iii) The major product obtained when 2-bromo butane reacts with alc. KOH is
a) 2-butene b) 1-butene c) 1-butanol d) 2-butanol
- iv) 2, 2-dichloropropane reacts with aq. KOH gives
a) 2,2-propanediol b) propanal c) propene d) acetone



3. i) Which of the following compounds will not give haloform reaction ?

- a) 1-propanol b) 2-propanol
c) propanone d) ethanol

ii) 1, 3-butadiene reacts with bromine to mainly give

- a) 3, 4-dibromo-1-butene b) 4-bromo-1-butene
c) 1, 4-dibromo-2-butene d) 1-bromo-2-butene

iii) Alkenes show geometrical isomerism due to

- a) rotation around single bond
b) rotation around double bond
c) restricted rotation around single bond
d) restricted rotation around double bond

iv) Which of the following compounds will be optically active ?

- a) 2-chloropropanoic acid b) 3-chloropropanoic acid
c) 3-chloropropane d) propanoic acid

4. i) Mechanism of reaction may be studied with the help of

- a) intermediate trapping b) isotopic labelling
c) stereochemical evidence d) all of these

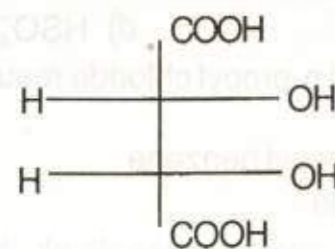
ii) The reaction of benzene ring are mainly

- a) nucleophilic substitution b) electrophilic substitution
c) nucleophilic addition d) electrophilic addition

iii) The rate of nitration of benzene and deutereobenzene is in the order

- a) benzene > deutereobenzene
b) deutereobenzene > benzene
c) benzene = deutereobenzene
d) deutereobenzene does not show nitration

iv) The configurational nomenclature of the compound



- a) 2R, 3R-tartaric acid b) 2R, 3S-tartaric acid
c) 2S, 3S-tartaric acid d) 1R, 2R-tartaric acid

(4×1=4 Weightage)

SECTION – B

(Answer **any five** questions. **Each** carries a weightage of 1)

- Write the preparation of 2-butene using vic.dihalides.
- Friedel Craft's acylation requires more amount of catalyst than alkylation. Give reason.
- What are enantiomers ? Give example.
- Write the effect of structure on reactivity of alkyl halides by SN² mechanism.
- What is the theoretical explanation of Markownikoff's rule ?
- State and explain Walden inversion.
- Write short note on unimolecular mechanism of nucleophilic aromatic substitution.
- How will you distinguish CHCl₃ and CCl₄ ? (5×1=5 Weightage)

SECTION – C

(Answer **any four** questions. **Each** carries a weightage of 2)

- What is meant by homologous series ? Write its general characteristics.
- Write one example for each of the following oxidation reactions using
 - osmium tetroxide
 - selenium dioxide
- Explain the mechanism of dehydrohalogenation of alkyl halide.
- Write short note on benzyne intermediate mechanism.
- Explain the following reactions
 - alkylidene dichloride $\xrightarrow[2) \text{ hydrolysis}]{1) \text{ KCN}}$
 - alkylene chloride $\xrightarrow[2) \text{ hydrolysis}]{1) \text{ KCN}}$
- Represent conformations of n-butane using Newmann projection formula. Draw energy profile diagram of these conformations. (4×2=8 Weightage)