

## SECTION - C

Answer any four questions. Each carries a weightage of 2.

- Explain the mechanism of electrophilic addition of hydrogen halide to carboncarbon double bond.
- 14. Narrate the mechanism of nitration of benzene.
- 15. How is chloroform prepared from alcohol using bleaching powder? Write equation.
- 16. What do you understand by E and Z notations? Assign E or Z configuration to each of the following compounds:

a) 
$$e = e^{H}$$
 $e = e^{CI}$ 
 $e = e^{CI}$ 
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 $e = e^{CI}$ 

- 17. Write short note on alkadienes.
- 18. Explain with example of IUPAC rules for naming polyfunctional compounds. (4×2=8)

## SECTION - D

Answer any two questions. Each question carries a weightage of 4:

- a) Write the preparation of cyclohexane (Freund's method) and cyclopentane (Wislicenus method)
  - b) Complete the equation:

ii) 2-methyl propene 
$$\xrightarrow{\text{(O)}}$$
  $K_2\text{Cr}_2\text{O}_2/\text{H}^+$ 

- 20. Explain mesomeric effect and hyperconjugation effect along with its application.
- 21. Discuss:
  - a) Conformation of cyclohexane
  - b) Characterisation of geometrical isomers.

 $(2 \times 4 = 8)$ 



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Reg. No.:
Name :
V Semester B.Sc. Degree (CCSS – Reg./Supple./Imp.) Examination November 2014  CORE COURSE IN CHEMISTRY  5 B09 CHE: Organic Chemistry – I
Time: 3 Hours Renotes la la lag anote sur Max. Weightage
SECTION-A limo yigma avert yerl (b)
Answer all questions. Choose the correct answer. Each bunch of four questions carries a weightage of 1.
The IUPAC nomenclature of following compound is
CH3 -E-CH2-CH2-SH-CHO
a) 2-chloro-5-methyl pentanal b) 2-chloro-5-methyl hexanal
c) 5-chloro-2-methyl hexanal d) 2-chloro-5-methyl pentanol
<ul> <li>ii) When – OH, – COOH, – CN and – NO<sub>2</sub> groups are present in a molecule, the principal functional group is</li> </ul>
a) hydroxy b) nitro
c) carboxylic acid d) nitrile

- iii) Which statement is false?
  - a) Many alkanes are soluble in water
  - b) All alkanes have lower density than water
  - c) At room temperature some alkanes are liquids, some solids and some gases
  - d) All alkanes burn
- iv) Which of the following compounds react with ammonical cuprous chloride to give a precipitate?
  - a) 1-butene

b) 2-butene

c) 1-butyne

d) 2-butyne

- 2. i) Which of the following carbonium ions will be most stable?
  - a)  $\overset{+}{\mathsf{C}}\mathsf{H}_3$

b) CH<sub>3</sub> - CH<sub>2</sub>

c) (CH<sub>3</sub>)<sub>2</sub> CH

- d)  $CH_2 = CH CH_2$
- ii) Which of the following statements is correct regarding nucleophiles?
  - a) They have an overall +ve charge
  - b) They have alone pair of electrones
  - c) They have an unpaired electron
  - d) They have empty orbitals
- iii) The reaction of >==c < of are mainly
  - a) Electrophilic addition
- b) Nucleophilic addition
- c) Electrophilic substitution
- d) Nucleophilic substitution
- iv) In the dehydrohalogenation of 2-chlorobutane, the main product is
  - a) 2-butanol

b) Chloroprene

c) 2-butene

- d) 1-butene
- 3. i) The main source of aromatic hydrocarbon is
  - a) Petroleum

- b) Coal tar
- c) Petroleum gas
- d) Benzene
- ii) The function of anhy. AlCl<sub>3</sub> in Friedel crafts reaction is to
  - a) absorb water

- b) absorb HCI
- c) produce electrophile
- d) produce nucleophile
- iii) Halo compounds having two halogens on the same carbon atom are called
  - a) Gem-dihalides
- b) Vic-dihalides
- c) Poly alkylene dihalides
- d) Alkylene dihalides
- iv) For a given halogen, the order of reactivity of alkyl halides towards SN' is in the order
  - a)  $1^{\circ} > 2^{\circ} > 3^{\circ}$

b)  $2^{\circ} > 1^{\circ} > 3^{\circ}$ 

c)  $3^{\circ} > 2^{\circ} > 1^{\circ}$ 

d)  $2^{\circ} > 3^{\circ} > 1^{\circ}$ 

- 4. i) When chloroform is treated with aqueous NaOH, it gives
  - a) Formic acid

b) Acetic acid

-3-

- c) Sodium acetate
- d) Sodium formate
- 1-Bromobutane reacts with alcoholic KOH mainly gives
  - a) 1-butene

b) 2-butene

c) 1-butand

- d) 2-butanol
- iii) Which of the following compounds exhibit geometrical isomerism?
  - a) 1-pentene

b) 2-methyl-2-pentene

c) 2-pentene

- d) 2-methyl-2-butene
- iv) Optical isomers that are not mirror images are called
  - a) Diastereomers
- b) Enantiomers

c) Tautomers

d) Meso compounds

 $(4 \times 1 = 4)$ 

SECTION-B

Answer any five questions. Each carries a weightage of 1:

- 5. How is ethane prepared from propanoic acid?
- 6. What is Diels-Alder reaction? Give an example.
- Name the product obtained when propyne is treated with Lindlar's catalyst. Write equation.
- 8. What are non-benzenoid aromatic compounds? Give an example.
- 9. What is the stereochemistry of SN' in alkyl halides?
- What is Hofmann's rule? Give an example.
- 11. How will you distinguish ethylene chloride and ethylidene chloride?
- 12. Assign R or S configuration

(5×1=5