

**Branch: B. Pharmacy****Subject: Pharmaceutical Organic Chemistry -I (BP2021)****Date: 31-12-2018****Semester: II****Marks: 75****Time: 3 Hrs.****Instructions to the Students**

1. All questions are compulsory

2. Figures to the right indicate full marks

Q. No. 1. Solve the following multiple choice questions.**1x20=20**

1. Isobutane and n-butane are of each other.

- a) functional isomers b) chain isomers c) tautomers d) stereoisomers

2. Halogenation of alkanes takes place by mechanism

- a) free radical b) carbanion c) carbocation d) none of these

3. In elimination reaction of alkyl halides, the major product is that alkene in which double bond is more highly substituted, is the

- a) Markovnikov's rule b) Hoffman rule
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- c) Saytzeff rule d) Antimarkovnikov's rule

4. Ozonolysis of alkenes yields

- a) alkynes b) alkanes
-
- c) alcohol d) carbonyl compounds

5. Which of the following compound is a conjugated diene?

- a) 1,4-pentadiene b) 1,2-butadiene
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- c) 1,3-butadiene d) all of these

6. The IUPAC name of isopropyl bromide is

- a) 1-bromoethane b) 2-bromoethane
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- c) 1-bromopropane d) 2-bromopropane

7. When chiral compound undergoes S_N1 reaction, the product is obtained with

- a) Inversion of configuration b) Retention of configuration
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- c) Racemization d) plane of symmetry

8. Carbylamine test is given by

- a) primary amine b) secondary amine
-
- c) tertiary amine d) quaternary ammonium salt

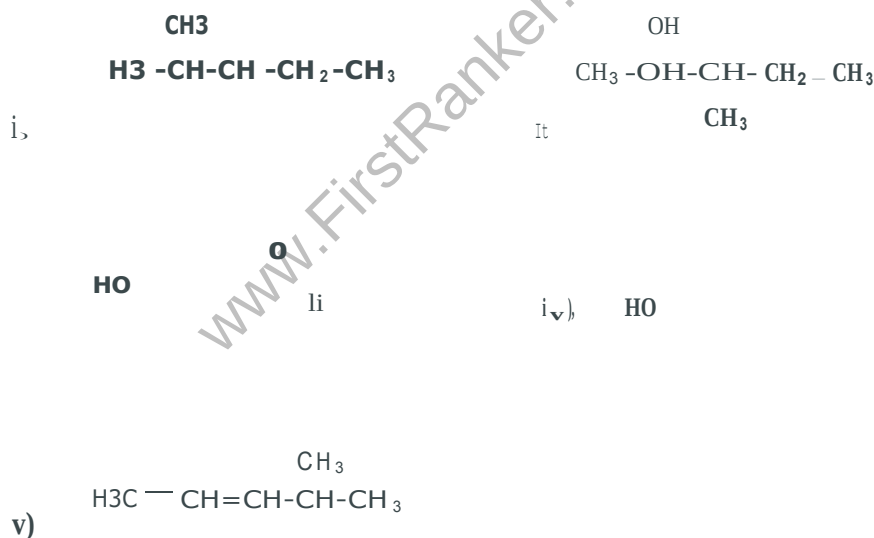
- a) zinc chloride and HCl b) zinc chloride and HNO₃
 c) ferric chloride and HCl d) none of these
10. The carbon atom involved in double bond of alkene is
- a) SP hybridized b) SP² hybridized
 c) SP³ hybridized d) unhybridized
11. The effect of electron releasing substituent on basicity of amines is
- a) basicity increases b) basicity decreases
 c) no effect on basicity d) none of these
12. When two groups or atoms are lost from adjacent carbon atoms to form carbon-carbon double bond, the reaction is called as
- a) 1,1 —elimination b) 1,2- elimination
 c) substitution d) addition
13. The rate of reaction in E1 mechanism depends upon concentration of
- a) substrate only b) base only
 c) both substrate and base d) none of these
14. Which of the following is strongest acid?
- a) acetic acid b) chloroacetic acid
 c) dichloroacetic acid d) trichloroacetic acid
15. Which of the following is the saturated compound?
- a) 1-butene b) propene c) 2- butene d) n-butane
16. Primary Hydrogen isotope effect is observed in
- a) E_i reaction b) E₂ reaction
 c) S_Ni reaction d) S_N2 reaction
17. The IUPAC name of the compound Cl-CH₂-C(=O)-CH₂-OH is
- a) 1-chloropropanal b) 3-chloropropanol
 c) 3- chloropropane d) 1-chloropropanone
18. The final product in Cannizzaro reaction is
- a) aldehyde b) ketone
 c) hydrazone d) alcohol and salt of carboxylic acid
19. The intermediate formed in S_N¹ mechanism is
- a) carbene b) free radical c) carbocation d) carbanion
20. Addition of 1-H₂ to alkene in presence of peroxide follows orientation.
- a) Markovnikov's b) Hoffman
 c) Saytzeff d) Antimarkovnikov's

- A. Explain, why Aldehydes and ketones are susceptible for nucleophilic addition reactions? Give any two methods for preparation of aldehydes. Write a note on Aldol condensation and Perkin reaction.
- B. Give kinetics, mechanism and stereochemistry of S_N1 and S_N2 reactions with example.
- C. What are elimination reactions? Discuss kinetics, mechanism and orientation of E2 reaction. Differentiate between E₁ and E2 reactions.

Q. No. 3. Solve any Seven of the following.

5x7=35

- A. Explain SP³ hybridization in alkanes.
- B. Explain the effect of substituent on acidity of carboxylic acids.
- C. What are Alcohols? Give any two methods for preparation and any two reactions of alcohols.
- D. Write a note on basicity of amines.
- E. Explain the different types of structural isomerism.
- F. Write a note on Ozonolysis and Diel-alder reaction.
- G. Give the structures and uses of following compounds
 - i) Glycerol
 - ii) Dichloromethane
 - iii) Acetyl salicylic acid
 - iv) Formaldehyde
 - v) Ethanotarnine
- H. Draw the structures for following compounds.
 - i) 2-aminoethanol
 - ii) 2- bromopentanal
 - iii) ethylpropanoate
 - iv) 2- methoxypentanoic acid
 - v) N-methylbutanamine
- I. Give the IUPAC names to the following compounds



End