

PARUL UNIVERSITY
FACULTY OF PHARMACY
B. Pharm. Winter 2018 - 19 Examination

Semester: 2
Subject Code: BP202T
Subject Name: Pharmaceutical Organic Chemistry I - Theory

Date: 28/11/2018
Time: 10:00am to 1:00pm
Total Marks: 75

Instructions:

1. Figures to the right indicate maximum marks.
2. Make suitable assumptions wherever necessary.

Q.1 Multiple Choice Questions (MCQs) (1 Mark Each) (20)

1. What is the IUPAC name of Aniline?
a) Aminobenzene
b) Nitrobenzene
c) Methoxybenzene
d) None of the above
2. Number of unhybridized p-orbitals in sp^2 hybridization:
a) 0
b) 1
c) 2
d) 3
3. A group of atoms with a positively charged carbon atom is known as:
a) Carbocation
b) Carbanions
c) Free radicals
d) None of the above
4. A 40% solution of formaldehyde in water is called as:
a) Formic acid
b) Paraldehyde
c) Cinnamaldehyde
d) Formalin
5. The basic character of an amine is due to presence of..... on nitrogen atom:
a) A lone pair of electrons
b) A lone pair of protons
c) Due to Nitric ion
d) None of the above
6. Functional group NH_2 containing compound:
a) Ethanolamine
b) Ethylenediamine
c) Amphetamine
d) All of the above
7. In Cannizzaro reaction, HCHO reacts in presence of:
a) Conc. NaOH
b) Conc. NaCl
c) Conc. HCl
d) Conc. HNO_3
8. In the following carbocation, which one is more stable:
a) 2°
b) 1°
c) 3°
d) Methyl cation
9. Metamerism in organic compounds is due to:
a) Different alkyl group
b) Different functional group
c) Different positions of group
d) None of the above
10. Compounds and functional groups that contain a basic nitrogen atom with a lone pair called as:
a) Amines
b) Alcohols
c) Carboxylic acids
d) None of the above
11. Condensation between two different aldehydes is called as:
a) Aldol condensation
b) Benzoin condensation
c) Cross aldol condensation
d) Carbylamine reaction
12. Benzoic acid having the molecular formula:
a) $C_7H_6O_2$
b) $C_7H_5O_2$
c) $C_6H_7O_2$
d) $C_7H_6O_3$
13. Which alkyl halide follow SN^1 reaction?
a) Tertiary
b) Primary
c) Second
d) None of the above

14 Following are the examples of carboxylic acid derivatives EXCEPT:

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|-------------------|-----------|
| a)Esters | b)Amides |
| c)Acid anhydrides | d)Ketones |

15. Following are the examples of alcohols derivatives EXCEPT:

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|-------------------|---------------------|
| a) Ethyl alcohol | b) Propylene glycol |
| c) Benzyl alcohol | d) Ethanal |

16. The compounds in which two double bonds are separated by a single bond are called as:

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|-----------------|----------------------|
| a)Alkyl halides | b) Conjugated Dienes |
| c) Carbocations | d)None of the above |

17. The [4+2]-cycloaddition of a conjugated diene and a dienophile is:

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|-------------------------|-------------------------|
| a) Diels-Alder reaction | b) Aldol condensation |
| c) Electromeric effect | d) Benzoin condensation |

18. The functional group of Aldehyde is:

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|---------|---------|
| a)-CHO | b)C=O |
| c) COOH | d)COOR' |

19. SN¹ reaction gives which type of product?

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|--------------|----------------------|
| a) Inversed | b) Racemic mixture |
| c) Retention | d) None of the above |

20. Phenol containing derivative is:

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|-------------------|---------------------|
| a) Salicylic acid | b) Cresol |
| c) Resorcinol | d) All of the above |

Q.2 Long Answers (any 2 out of 3) (10 Mark Each) (20)

1. Define Substitution reaction.Explain SN¹ reaction,kinetics,mechanism & its Stereochemistry.
2. Classify Organic Compounds with Structures.Write in detail about Structural isomerisms in organic compounds.
3. Define Elimination reaction.Give a detail note about E2 reaction.

Q.3 Short Answers (any 7 out of 9) (5 Mark Each) (35)

1. Explain SP³ hybridization in alkanes.
2. Discuss Acidity of carboxylic acid & effect of substituents on acidity.
3. Write a short summary about Aldol condensation.
4. Write down the structure and use of: a)Citric acid b)Chloroform c)Propylene glycol d)Formaldehyde
5. Explain Markownikoff's rule with the stability of Carbocations formed during addition of hydrogen halide.
6. Describe Amines basicity & effect of substituent on basicity.
7. What are the various factors affecting SN₁ & SN₂ reactions.
8. Give a brief note on Diel-Alder reaction.
9. Write down the structure and use of: a)Glycerol b)Acetyl salicylic acid c)Oxalic acid d)Acetone