

**B. PHARM.
SECOND SEMESTER
PHARMACEUTICAL ORGANIC CHEMISTRY-I
BP202T**

**SET
C**

[USE OMR SHEET FOR OBJECTIVE PART]

Duration : 3 hrs.

Full Marks : 75

[PART-A: Objective]



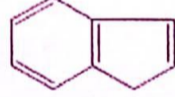

Time : 30 min.

Marks : 20

Choose the correct answer from the following:

1 × 20 = 20

- In the addition of HBr to a double bond, the hydrogen goes to the carbon that has already more hydrogen is a statement of -
 - Markownikoff's rule
 - Saytzeff rule
 - Diel's elder reaction
 - Ozonolysis
- The appearance of a silver mirror in Tollen's test indicates the presence of -
 - An aldehyde
 - A ketone
 - An alcohol
 - An alkene
- Which of the following is the correct IUPAC name of the compound below-
$$\begin{array}{c} \text{O} \quad \quad \text{O} \\ || \quad \quad || \\ \text{CH}_3\text{-C-CH}_2\text{-CH}_2\text{-C-H} \end{array}$$
 - 4-oxo-pentanal
 - 4-oxo-pentan-1-al
 - 1,4-dioxo-pentanone
 - 2,5-dioxo-pentanone
- How many isomers are possible for the compound with molecular formula C₄H₉Br?
 - 4
 - 2
 - 6
 - 8
- Carboxylic acid turns ----- litmus to -----
 - Blue, red
 - Red, blue
 - Blue, green
 - Blue, white
- Which of the following compounds will give a positive test with Felhing's solution?
 - Formaldehyde
 - Acetone
 - Ethyl acetate
 - Acetic acid
- Alkyl halides undergo -
 - Electrophilic substitution reaction
 - Electrophilic addition reaction
 - Nucleophilic substitution reaction
 - Nucleophilic addition reaction
- Which of the following compound will undergo Aldol condensation -
 - Acetaldehyde
 - Formaldehyde
 - Benzaldehyde
 - Both a & b
- Amines turn red litmus paper into -
 - Blue colour
 - Green colour
 - White colour
 - Orange colour

10. Biuret test shows result as -
- Purple colour
 - Red colour
 - White colour
 - Black colour
11. Markownikoff's rule is not applicable for-
- 1-Propene
 - 1-butene
 - 1-pentene
 - 2-butene
12. Order of reactivity for alkyl halides for S_N1 reaction-
- $1^\circ > 2^\circ > 3^\circ$
 - $3^\circ > 1^\circ > 2^\circ$
 - $2^\circ > 1^\circ > 3^\circ$
 - $3^\circ > 2^\circ > 1^\circ$
13. Which alkyl free radical is the most stable?
- Methyl
 - Primary
 - Secondary
 - Tertiary
14. Homolytic fission of C-C bond leads to the formation of :
- Carboanion
 - Carbocation
 - Free radicals
 - None of the above
15. Which of the following compounds would react most rapidly in S_N2 reaction?
- $(CH_3)_3Cl$
 - $(CH_3)_2CHI$
 - CH_3I
 - $CH_2=CHI$
16. What is the correct relationship between the two molecules shown below?
- $$\begin{array}{c} Cl \\ | \\ CH_2-CH_2-CH_3 \end{array} \quad \text{and} \quad \begin{array}{c} Cl \\ | \\ CH_3-CH-CH_3 \end{array}$$
- There is no relationship.
 - They are positional isomers.
 - They are chain isomers.
 - They are functional isomers.
17. 2-bromobutane reacts with H_2SO_4 to mainly give-
- 1-butene
 - 2-butene
 - 1-butanol
 - 2-butanol
18. Ethanol and dimethylether are best considered as-
- Stereoisomers
 - Structural isomers
 - Diastereomers
 - Positional isomers
19. Which of the following compound is aromatic-
- 
 - 
 - 
 - 
20. The isomers of a substance must have-
- Same chemical properties
 - Same molecular weight
 - Same structural formula
 - Same functional group

(PART-B : Descriptive)

Time : 2 hrs. 30 min.

Marks : 35

[Answer any seven (7) questions]

1. Write the IUPAC rules for naming alkene with example ? 5
2. Alkane and alkene follow Sp^3 and Sp^2 hybridization respectively. Justify the statement? 5
3. 2-bromobutane follows Saytzeff's rule. Justify it? 5
4. Give an example of antimarkownikoff's rule by identifying the major and minor product with justification ? 5
5. Describe SN_1 reaction with mechanism? Write two differences between SN_1 and SN_2 reaction? 3+2=5
6. Describe E_2 reaction with mechanism? Describe ozonolysis reaction with mechanism. 2+3=5
7. Describe the following name reaction with mechanism- 5
 - a. Diel-Alder reaction
 - b. Cannizzaro reaction
8. Describe acidity of Carboxylic acids? Write about the effect of substituents on acidity of carboxylic acid? 3+2=5
9. Draw the possible structural isomer of the following compounds and write the IUPAC name of the isomer by mentioning the type of isomerism? 5
 - a. Acetone
 - b. Diethyl ether
 - c. 3-pentanol

(PART-C: Long type questions)

[Answer any two (2) questions]

1. Draw the Structure of the following compounds- 10
 - a. 4-hydroxy-2-butanone
 - b. 2-methyl-4-oxopentanoic acid
 - c. 3-amino-5methylhexanoic acid
 - d. 2-butenal
 - e. 2,2,4-trimethylpentane
 - f. Benzylalcohol
 - g. Formic acid
 - h. Ethanolamine
 - i. 1,4-dibromo-2-butene
 - j. Acetaldehyde

2. Describe the following name reaction with mechanism- 5+5=10
 - a. Anti-markownikoff's rule
 - b. Free radical addition reaction of alkene

3. Describe the following reaction with mechanism- 5+5=10
 - a. Crossed cannizzaro reaction
 - b. Halogenation of alkane

-- -- -- --