

B. PHARM.
SECOND SEMESTER
PHARMACEUTICAL ORGANIC CHEMISTRY-I
BP202T [SPECIAL REPEAT]
[USE OMR SHEET FOR OBJECTIVE PART]

SET
A

Duration : 3 hrs.

Full Marks : 75

Time : 30 min.

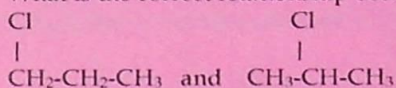
[PART-A: Objective]

Marks : 20

Choose the correct answer from the following:

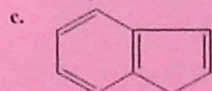
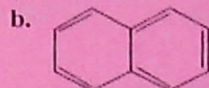
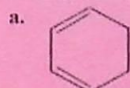
1X20=20

1. What is the correct relationship between the two molecules shown below?



- a. There is no relationship. b. They are positional isomers
c. They are chain isomers. d. They are functional isomers.

2. Which of the following compound is aromatic-



3. The isomers of a substance must have-

- a. Same chemical properties b. Same molecular weight
c. Same structural formula d. Same functional group
4. Ethanol and dimethylether are best considered as-
- a. Stereoisomers b. Structural isomers
c. Diastereomers d. Positional isomers

5. 2-bromobutane reacts with H_2SO_4 to mainly give-

- a. 1-butene b. 2-butene
c. 1-butanol d. 2-butanol

6. Which of the following compounds would react most rapidly in $\text{S}_\text{N}2$ reaction?

- a. $(\text{CH}_3)_3\text{CI}$ b. $(\text{CH}_3)_2\text{CHI}$
c. CH_3I d. $\text{CH}_2=\text{CHI}$

7. Homolytic fission of C-C bond leads to the formation of :

- a. Carboanion b. Carbocation
c. Free radicals d. None of the above

8. Which alkyl free radical is the most stable?

- a. Methyl b. Primary
c. Secondary d. Tertiary

9. Markownikoff's rule is not applicable for-
- 1-Propene
 - 1-butene
 - 1-pentene
 - 2-butene
10. Order of reactivity for alkyl halides for S_N1 reaction-
- $1^\circ > 2^\circ > 3^\circ$
 - $3^\circ > 1^\circ > 2^\circ$
 - $2^\circ > 1^\circ > 3^\circ$
 - $3^\circ > 2^\circ > 1^\circ$
11. Which of the following is the correct IUPAC name of the compound below-
- $$\begin{array}{c} \text{O} \quad \quad \text{O} \\ \parallel \quad \quad \parallel \\ \text{CH}_3\text{-C-CH}_2\text{-CH}_2\text{-C-H} \end{array}$$
- 4-oxo-pentanal
 - 4-oxo-pentan-1-al
 - 1,4-dioxo-pentanone
 - 2,5-dioxo-pentanone
12. How many isomers are possible for the compound with molecular formula C_4H_9Br ?
- 4
 - 2
 - 6
 - 8
13. 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
14. Alkyl halides undergo-
- Electrophilic substitution reaction
 - Electrophilic addition reaction
 - Nucleophilic substitution reaction
 - Nucleophilic addition reaction
15. Which of the following compounds will give a positive test with Fehling's solution?
- Formaldehyde
 - Acetone
 - Ethyl acetate
 - Acetic acid
16. The appearance of a silver mirror in Tollen's test indicates the presence of-
- An aldehyde
 - A ketone
 - An alcohol
 - An alkene
17. Which of the following compound will undergo Aldol condensation-
- Acetaldehyde
 - Formaldehyde
 - Benzaldehyde
 - Both a & b
18. Amines turn red litmus paper into-
- Blue colour
 - Green colour
 - White colour
 - Orange colour
19. Biuret test shows result as -
- Purple colour
 - Red colour
 - White colour
 - Black colour
20. Carboxylic acid turns ----- litmus to -----
- Blue, red
 - Red, blue
 - Blue, green
 - Blue, white

(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. i) Draw the Structure of the following compounds- 10
a) 4-hydroxy-2-butanone
b) 2-methyl-4-oxopentanoic acid
c) 3-amino-5-methylhexanoic acid
d) 2-butenal
e) 2,2,4-trimethylpentane
f) Benzyl alcohol
g) Formic acid
h) Ethanolamine
i) 1,4-dibromo-2-butene
j) Acetaldehyde
2. Describe the following name reaction with mechanism- 5+5=10
i) Anti-Markovnikov's rule
ii) Free radical addition reaction of alkene
3. Describe the following reaction with mechanism- 5+5=10
a. Crossed Cannizzaro reaction
b. Halogenation of alkane