

**B Pharm Even Semester Examination,
September, 2023**

PHARMACEUTICAL SCIENCES

(2nd Semester)

Course No: BP-202T

(Pharmaceutical Organic Chemistry-I- Theory)

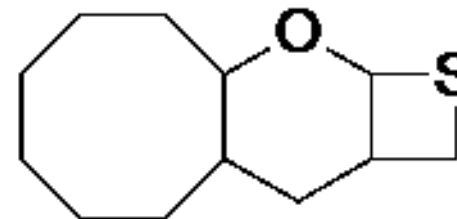
FM: 75

Time: 3 Hours

The figures in the right margin indicate full marks for the question

I. A. Multiple Choice questions 1x10=10

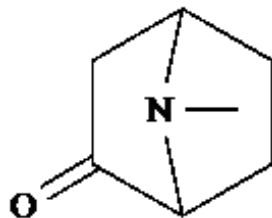
1. The correct IUPAC nomenclature of the following molecule is



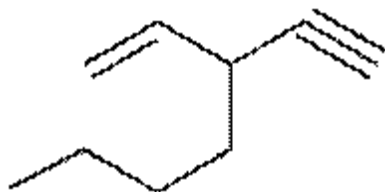
- (a) 7-oxa-5-thiatricyclo[6.6.0.0^{3,6}]tetradecane
(b) 9-oxa-11-thiatricyclo[6.6.0.0^{10,13}]tetradecane
(c) 2-oxa-4-thiatricyclo[6.6.0.0^{3,6}]tetradecane
(d) 14-oxa-12-thiatricyclo[6.6.0.0^{10,13}]tetradecane

Turn Over

2. The correct IUPAC nomenclature of the following molecule is



- (a) 2-methyl-2-azabicyclo[2.2.1]heptan-4-one
 (b) 7-methyl-7-azabicyclo[2.2.1]heptan-2-one
 (c) 7-methyl-7-azabicyclo[2.2.1]heptan-5-one
 (d) 7-methyl-7-azabicyclo[2.2.1]heptan-3-one
3. The correct IUPAC nomenclature of the following molecule is



- (a) 3-ethynylhept-1-ene
 (b) 3-vinylhept-1-yne
 (c) 3-butylpent-1-ene-4-yne
 (d) 3-ethynylhept-4-ene
4. In an electrophilic addition reaction of an alkene, the negative part of the electrophilic reagent get attached to the highly substituted carbon atom. This rule is known as
- (a) Saytzeff's rule

2. Discuss the nomenclature of bicyclic and tricyclic compounds. Give necessary examples. 5+5=10
3. Write down the mechanism of ozonolysis reaction. Discuss the stereo chemistry of SN1 and SN2 reaction with appropriate mechanism. "The product of allylic rearrangement is isomer" explain with a mechanism. 3+4+3=10

III. Short answers (Answer seven out of nine questions) 5x7=35

1. How are organic compounds Classified? Give examples under each class. 5
2. Classify structural isomerism with examples. 5
3. Discuss the acidity and effect of substituents on acidity of mono carboxylic acids. 5
4. Give the structure and uses of lactic acid and citric acid. 2.5+2.5=5
5. What are the various factors affecting SN1 and SN2 reactions? 5
6. Classify dienes with examples. Write a note on Diels-Alder reaction. 3+2=5
7. Discuss the basicity and effect of substituent on basicity of aliphatic amines. 5
8. Discuss the Fehling's test and Tollens' test) with necessary reactions. 2.5+2.5=5
9. Give two method of preparation for alcohol. Write a note on Lucas test with reaction. 2+3=5

- (c) Aldol Condensation reaction
(d) Cross Cannizzaro reaction
9. In the preparation of Tollens' reagent, the brown silver oxide formed is solubilized by
- (a) AgNO_3 (b) NaNO_3
(c) NH_3 (d) NaOH
10. The ortho substituted benzoic acids are reasonably stronger than benzoic acid or its meta and para isomers if the substituent is
- (a) Electron withdrawing groups
(b) Electron donating groups
(c) Both (a) and (b)
(d) None of the above

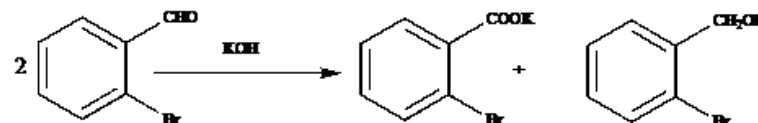
I. B. Objective type 2x5=10

1. What do you mean by anti Markownikoff's orientation?
2. Define electromeric effect with examples.
3. Give the structure and use of amphetamine.
4. What is iodoform test?
5. Write two preparations of an alkane.

II. Long answers (Answer two out of three questions) 10x2=20

1. Write down the reaction and mechanism of benzoin condensation and Perkin condensation.
5+5=10

- (b) Hoffman's rule
(c) Markovnikov's rule
(d) Anti-markovnikov's rule
5. Which of the following is most reactive towards SN_1 reaction?
- a) Isopropyl chloride
b) Tertiary butyl chloride
c) Ethyl chloride
d) Butyl chloride
6. The Wolff-Kishner reduction is used to convert carbonyl functionalities into
- (a) Alcoholic group (b) Oxime group
(c) Methylene group (d) Methyl group
7. The glucopyranose ring (a hemiacetal) is formed by the reaction of aldehydic functional group at carbon 1 (C1) with the hydroxyl group on carbon number:
- (a) C2 (b) C3
(c) C4 (d) C5
8. The name of the following reaction is



- (a) Perkin condensation reaction
(b) Cannizzaro reaction