

Total No. of Printed Pages—8

2 SEM TDC CHMH (CBCS) C 3

2026

(May/June)

CHEMISTRY

(Core)

Paper : C-3

(**Organic Chemistry**)

Full Marks : 53

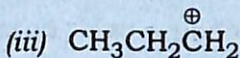
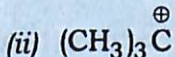
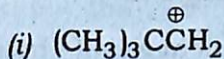
Pass Marks : 21

Time : 3 hours

*The figures in the margin indicate full marks
for the questions.*

1. Choose the correct answer from the following : 1×5=5

(a) Which is the most stable carbocation among the following?



(2)

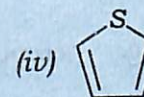
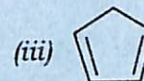
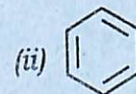
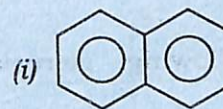
- (b) Which of the following compounds does not show geometrical isomerism?
- (i) 2,3-Dichloro-2-butene
 - (ii) 1,1-Dichloro-2-butene
 - (iii) 1,2-Dichloro-2-butene
 - (iv) 1,1-Dichloro-1-butene
- (c) Order of ease of halogenation in alkane is
- (i) $I_2 > Cl_2 > Br_2 > F_2$
 - (ii) $F_2 > Cl_2 > I_2 > Br_2$
 - (iii) $F_2 > Cl_2 > Br_2 > I_2$
 - (iv) $Cl_2 > F_2 > Br_2 > I_2$
- (d) The order of stability of the conformations of cyclohexane is
- (i) boat > twist boat > half chair > chair
 - (ii) half chair > chair > twist boat > boat
 - (iii) chair > half chair > twist boat > boat
 - (iv) chair > twist boat > boat > half chair

26P/1098

(Continued)

(3)

- (e) Which of the following compounds is not aromatic?



UNIT—I

2. Answer the following questions : 2×3=6

- (a) Draw the resonating structure of phenol.
- (b) Explain that formic acid is stronger acid than acetic acid.
- (c) Draw the energy profile diagrams of two-step reaction.

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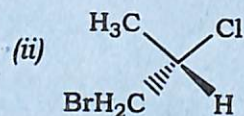
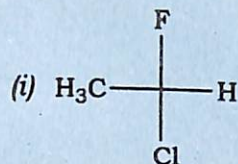
(4)

UNIT—II

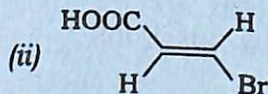
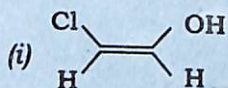
3. Answer any four of the following questions:

2×4=8

(a) Specify the following stereoisomers as *R* and *S*:
1×2=2



(b) Specify the following geometrical isomers as *E* and *Z*:
1×2=2



(c) Define the term Enantiomers with example.

(d) What is the difference between *threo*- and *erythro*-forms?

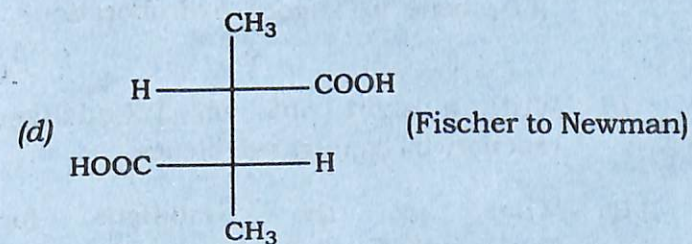
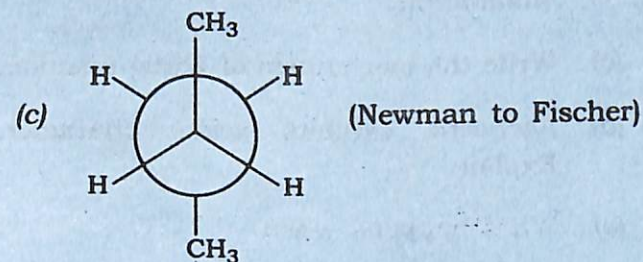
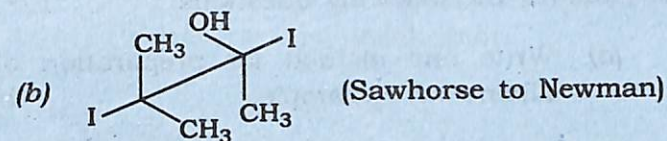
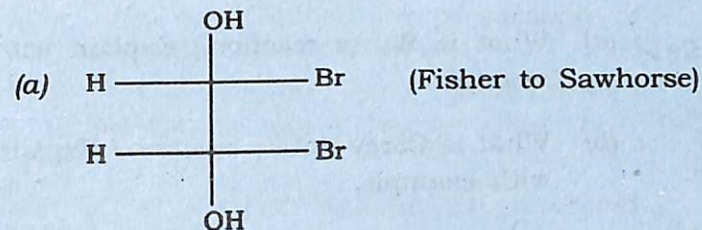
(e) What are distereoisomers and epimers?
1+1=2

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(Continued)

(5)

4. Interconvert the following projections as directed :
1×4=4



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(Turn Over)

UNIT—III

5. Answer any one of the following questions : 2

(a) What is Wurtz reaction? Explain with example. 1+1=2

(b) What is Corey-House reaction? Explain with example. 1+1=2

6. Answer the following questions : 2×7=14

(a) Write one method for preparation of alkene with example. 1+1=2

(b) Write a short note on Hofmann elimination.

(c) Write the mechanism of Wittig reaction.

(d) Acetylene exhibits acidic character. Explain.

(e) What happens when—

(i) alkene is treated with ozone;

(ii) alkene undergoes hydroboration? 1+1=2

(f) Write a short note on 1,2-addition reaction in conjugated dienes.

(g) What are the conditions for Markownikoff rule?

UNIT—IV

7. Answer the following questions :

(a) Write one method for preparation of cycloalkane with example. 1+1=2

(b) Explain why chair conformation of cyclohexane is more stable than boat conformation. 2

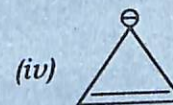
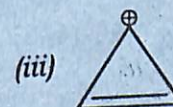
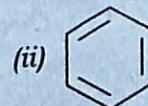
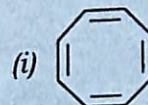
(c) Write a short note on Baeyer strain theory. 2

(d) Draw the energy profile diagram for the conformations of cyclohexane. 2

UNIT—V

8. Answer the following questions :

(a) Select aromatic, anti-aromatic and non-aromatic compounds from the following : $\frac{1}{2} \times 4 = 2$



- (b) State Hückel's rule. 1
- (c) What happens when (any one)—
 (i) benzene is treated with H_2SO_4 ;
 (ii) benzene is treated with Cl_2 ? 1
- (d) Write the mechanism of Friedel-Crafts alkylation reaction. 2

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