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VA—12—2024

FACULTY OF SCIENCE

B.Sc. (Second Year) (Fourth Semester) EXAMINATION

NOVEMBER/DECEMBER, 2024

(CBCS/New Patterns)

CHEMISTRY

Paper—VIII

(Organic and Inorganic Chemistry)

(Monday, 02-12-2024)

Time : 2.00 p.m. to 4.00 p.m.

Time—2 Hours

Maximum Marks—40

N.B. :— Attempt *all* questions.

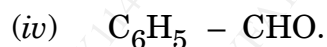
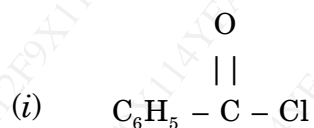
1. Solve any *three* of the following : 15
- (a) Give the electronic configuration of second transition series elements.
 - (b) What are Lanthanide contraction ? Give the consequences of Lanthanide contraction.
 - (c) Give the outermost electronic configuration of actinide series elements.
 - (d) Explain the following properties of first transition series elements :
 - (i) Colour
 - (ii) Magnetic properties.
 - (e) Compare the properties of '*d*'-block elements with '*f*' block elements.

P.T.O.

2. Solve any *three* of the following :

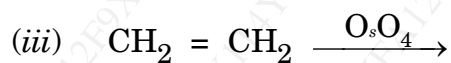
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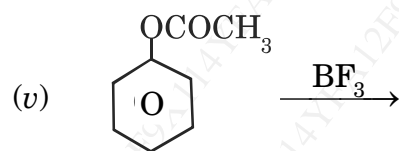
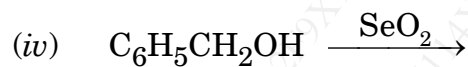
- (a) How will you convert glucose to mannose ?
- (b) What is stereoisomerism ? Give the 'R' and 'S' configuration of the following compounds :
- (i) Bromochloriodomethane
- (ii) 1-phenyl ethanol.
- (c) What are aromatic amines ? What is the action of the following on aniline ?



(d) Discuss the conformational analysis of *n*-butane

(e) Predict the product :





3. Solve any *two* of the following :

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(a) Explain Osazone formation of glucose with mechanism.

(b) Define the following terms :

(i) Asymmetric carbon atom

(ii) Enantiomers

(iii) Racemic mixture

(iv) Resolution

(v) Plane of symmetry.

(c) How will you prepare aniline from :

(i) Chlorobenzene

(ii) Phenol

(iii) Nitrobenzene.

Explain the following chemical reactions of aniline :

(i) Action of benzoyl chloride

(ii) Formation of *p*-nitroacetanilide

(d) How will you convert fructose to glucose ?