

This question paper contains 4 printed pages]

NA—12—2023

FACULTY OF SCIENCE AND TECHNOLOGY

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

NOVEMBER/DECEMBER, 2023

(CBCS/New Pattern)

CHEMISTRY

Paper—VIII

(Organic and Inorganic Chemistry)

(Tuesday, 5-12-2023)

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 3rd transition series elements.
 - (b) Explain the separation of lanthanide series elements by ion exchange method.
 - (c) Give comparison between lanthanides and actinides.
 - (d) Explain the following properties of first transition series element :
 - (i) Complex formation
 - (ii) Magnetic properties.
 - (e) How is uranium extracted from pitchblend by acid digestion method ?

P.T.O.

2. Solve any *three* of the following :

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- (a) What are carbohydrates ? How are they classified ?
- (b) What is the geometrical isomerism ? Give the E and Z nomenclature of the following compound :

(i) 2-pentene

(ii) Meleic acid.

- (c) What is the action of the following on urea ?

(i) Action of heat

(ii) Nitrous acid

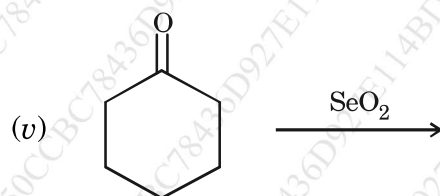
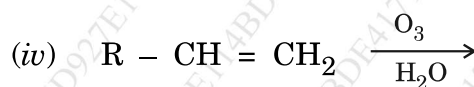
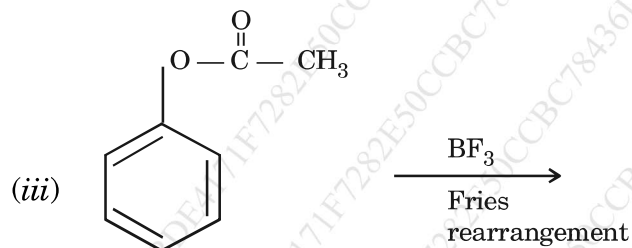
(iii) Thionyl chloride

(iv) Formaldehyde

(v) Acetyl chloride.

- (d) Predict the product :





(e) What is isomerism ? Explain types of structural isomerism.

3. Solve any *two* of the following :

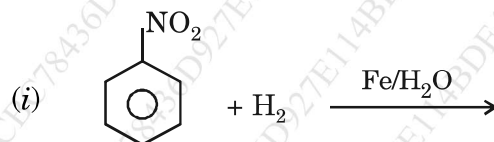
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(a) How will you convert fructose to glucose ?

(b) Explain element of symmetry in detail.

(c) What is mutarotation ? Give its mechanism.

(d) Predict the product :

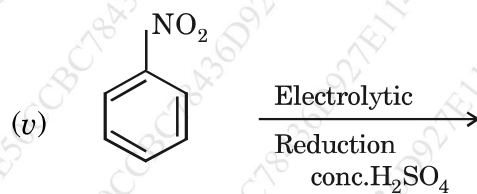
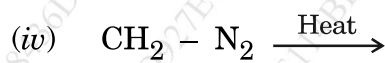
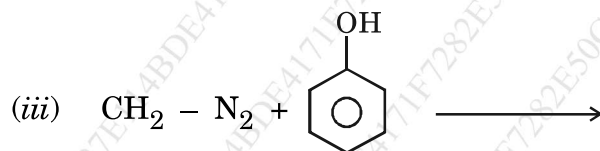
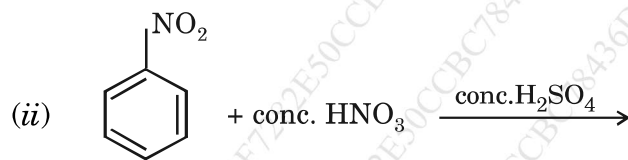


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