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SB—21—2022

FACULTY OF SCIENCE

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

MAY/JUNE, 2022

(CBCS/Old Course)

CHEMISTRY

Paper—VIII

(Organic and Inorganic Chemistry)

(Wednesday, 8-6-2022)

Time : 2.00 p.m. to 4.30 p.m.

Time— 2½ Hours

Maximum Marks—40

1. Solve any *three* of the following :

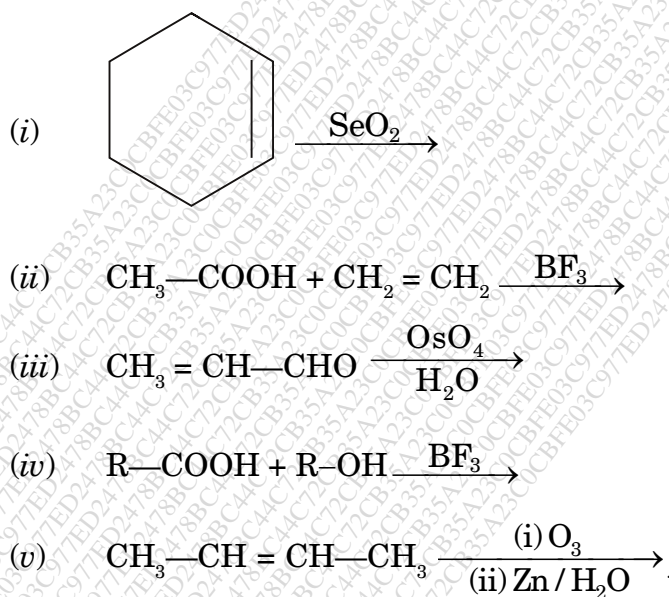
- (a) Give the electronic configuration of Lanthanides.
- (b) Write the compound and complexes of Palladium and Platinum in variable oxidation states.
- (c) What is Lanthanide contraction ? Give consequences of Lanthanide contraction.
- (d) Compare the Magnetic properties and stability of oxidation states of second and third transition series elements with first transition series elements.
- (e) Explain the Magnetic properties of Lanthanides and give the chemical formulae of Wilkinson's catalyst and Vaska compound.

2. Solve any *three* of the following :

- (a) What is stereoisomerism ? Write R and S forms of :
 - (i) 3-chloro 2-methyl pentane
 - (ii) 2-chlorobutane.
- (b) Explain Osazone formation of Glucose with mechanism.

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- (c) How will you prepare Urea by Wohler's method? What is the action of the following on Urea?
- Heat
 - SOCl_2
 - Acetyl chloride
 - Nitrous acid.
- (d) Explain the following with suitable examples :
- Walden Inversion
 - Distereoisomers.
- (e) Predict the product :



3. Solve any *two* of the following :

- (a) How will you prepare diazomethane from :
- N-Nitroso-N-Methyl Urethane
 - Nitrous oxide and methyl lithium. Explain the following chemical reactions of Diazomethane :
 - With phenol
 - Cyclopentanose
 - Ethanamine.

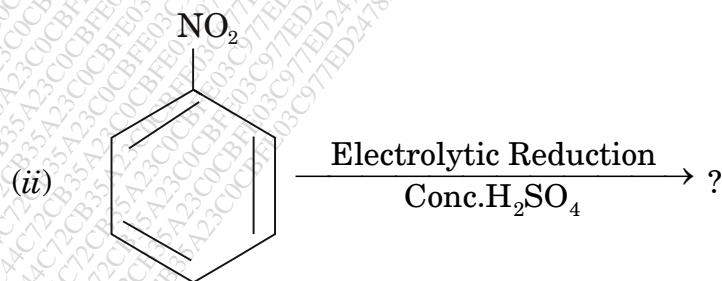
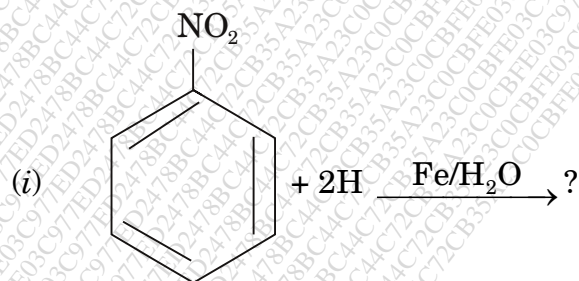
(b) Define the following terms :

- (i) Chiral Carbon
- (ii) Resolution
- (iii) Plane of Symmetry
- (iv) Racemic Mixture
- (v) Optical isomerism.

(c) How will you convert :

- (i) Glucose to Sorbitol
- (ii) Glucose to Glucosazone
- (iii) Phenol to Aniline
- (iv) Nitrobenzene to Aniline
- (v) Aniline to Phenyl isocyanide.

(d) Predict the product :



P.T.O.

