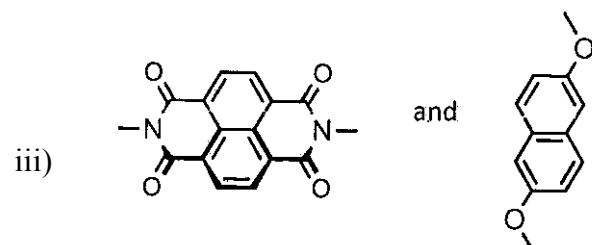
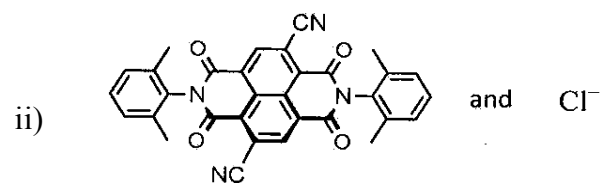
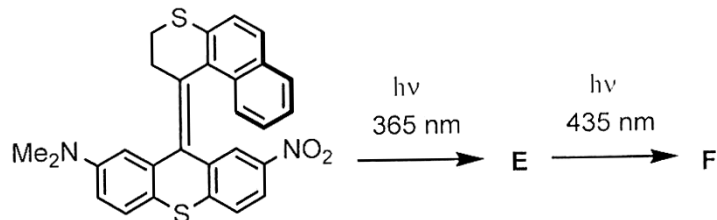


[4]



5. Draw the structures of **E** and **F** with suitable stereochemistry. 2+1



6. Write down Yukawa-Tsuno equation and explain each term. Explain the solvolysis mechanism of *p*-substituted cumyl chloride which exhibits 'r = 1' and 'ρ = -4.52'. 3+1

Ex/SC/CHEM/PG/CORE/TH/XIII-O/2023(S)

M. SC. CHEMISTRY (SPECIAL SUPPLEMENTARY)

EXAMINATION, 2023

(4th Semester)

PAPER: XIII-O

[ORGANIC CHEMISTRY SPECIAL]

Time : Two Hours

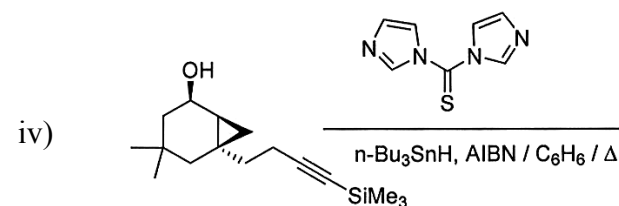
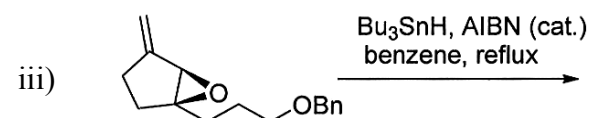
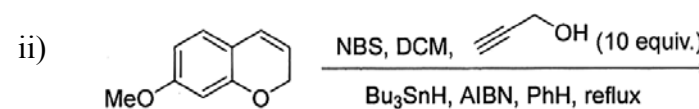
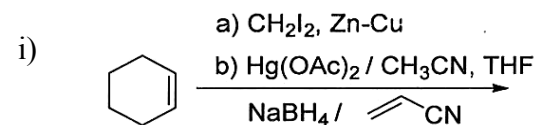
Full Marks : 40

(20 marks for each Unit)

Use a separate answer script for each Unit.

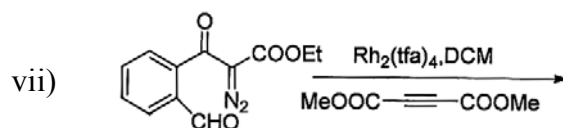
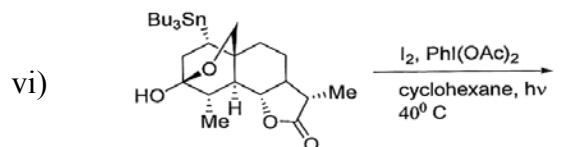
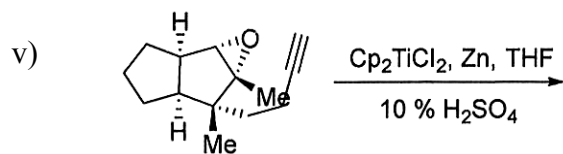
UNIT – O-4131

1. a) Predict the product(s) with proper stereochemistry of the following reactions and explain the plausible mechanism (*Answer any five*). 3×5



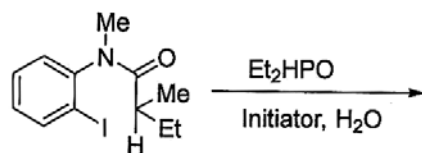
[Turn over

[2]



b) The radical initiated polymerization of a 1 : 1 mixture of dimethyl fumarate and vinyl acetate takes place largely to give a polymer in which the monomer units are present in alternate fashion along the chain – explain the above observation with plausible mechanism. 3

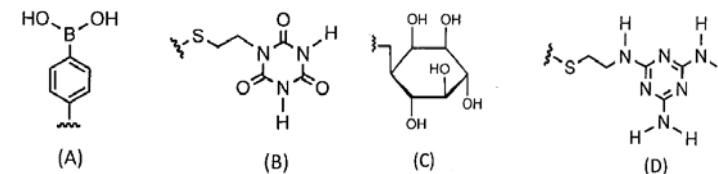
c) Identify the product and suggest the mechanism. Write down the structure of the most suitable initiator for this reaction. $1\frac{1}{2} + 1\frac{1}{2}$



[3]

UNIT – O-4132

2. What type of combination in the following recognition moieties (A-D) will you use at the water-lipid interfacial region to obtain artificial membrane fusion and why? How will you utilize supramolecular chemistry for artificial membrane fusion mediated targeted drug delivery? 2+2



3. What are the strategies will you use to synthesize rotaxane molecules? Write down the structure of a rotaxane-based pH sensitive molecular shuttle. Draw the structure of a catenane molecule where rotation of a ring within another ring can be observed by redox chemistry. 2+2+2

4. What type of noncovalent interactions present in the following molecules? 1+1+1

