

Shivaji College, University of Delhi

Department of Chemistry

Home Assignment (March 2024)

Name of Course: B.Sc. [Life Science]

Semester: II (B)

Name of Paper: Organometallics.....IR & U.V. Spectroscopy [Section: B]

Faculty Name: Dr. Nand Gopal Gini

Duration:

Date: 21-03-2024

Maximum Marks: 35
(scaled down to 5)

⇒ Attempt All questions:

5m Q.1. Explain with mechanism 'Claisen Ester Condensation' reaction.

6m Q.2. How can you synthesize the following compounds from acetoacetic ester? Write all the steps involved.

(a) Succinic Acid

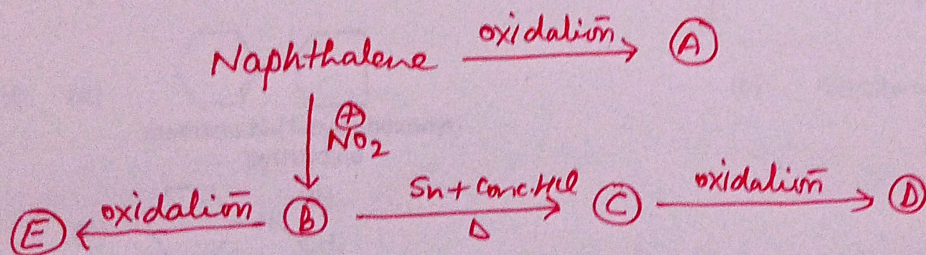
(b) 3-Ethylhexan-2,4-dione

(c) Adipic acid

(d) propanone

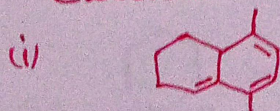
4m Q.3. The electrophilic substitution reaction in anthracene is preferred at 1-position, comment.

5m Q.4. Write the structures of A, B, C, D & E

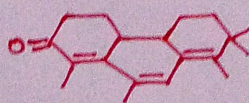


4m Q.5. Explain with example Bathochromic shift, hypsochromic shift, hyperchromic shift & hypochromic shift.

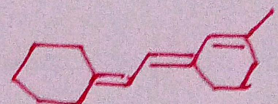
6m Q.6. Calculate λ_{max} for the following compounds:



(ii)

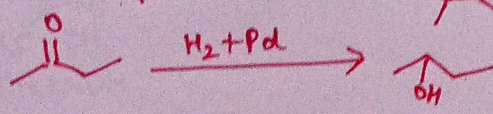


(iii)



3+2=5m

Q.7.

(i)  How can you assure the product formation by I.R. Spectra?

(ii) why in $\text{CH}_2=\text{CH}-\text{C}(=\text{O})-\text{H}$ the $\bar{\nu}(\text{cm}^{-1})$ are lower for $\text{C}=\text{C}$ & $\text{C}=\text{O}$ than in non conjugated $\text{C}=\text{C}$ & $\text{C}=\text{O}$?