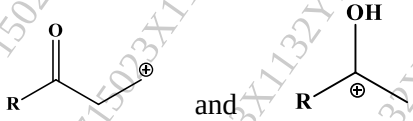
Time: [2 Hours] **[Total Marks: 40]**

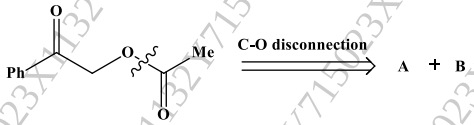
Q.1. Answer the following in brief. Draw structures wherever required. **10M**

i. Define: a. Functional group addition b. Synthon **2M**

ii. Suggest suitable synthetic equivalents for the following synthons **2M**

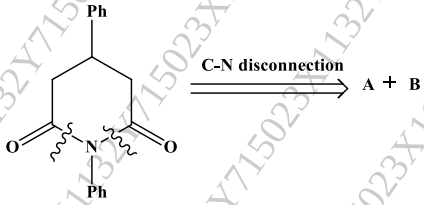


iii. Identify synthon A and B in the given retrosynthesis reaction **2M**



iv. Explain 'Functional group interconversion' with a suitable example **2M**

v. Identify A and B in the given heterocyclic retrosynthesis **2M**



Q.2. Explain the concept of functional group addition and functional group removal involved in synthon approach using suitable example **6 M**

Q.3**. Answer any one** **6M**

A. What is umpolung? Explain its utility in disconnection.

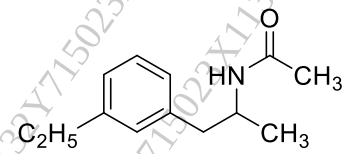
B. Explain any one guideline of disconnection giving an example that includes the analysis and synthesis.

Q.4. Design the retrosynthetic scheme and write the synthesis for the following compound Paracetamol **6M**

Q.5.**Answer any one question.** **6M**

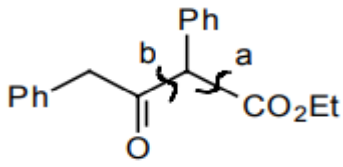
A. Depict the retrosynthetic pathway for thiophene using a suitable strategy of disconnection.

B. Design a retrosynthetic pathway for:



X1132Y715023X1132Y715023X1132Y715023X1132Y715023

Q.6. Analyse both disconnections and choose one, justify **6M**



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