

CEMA(HN)-06

West Bengal State University
B.A./B.Sc./B.Com. (Honours, Major, General) Examinations, 2014

PART-III

CHEMISTRY- Honours

Paper- VI

(New and Old Syllabus)

Duration : 4 Hours

Full Marks : 100

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

(New Syllabus)

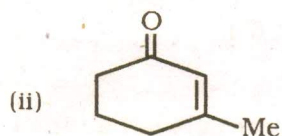
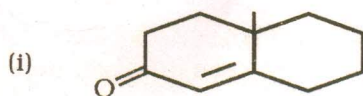
Use separate answer scripts for [CEMAT-36-OA & CEMAT-36OB]
and for CEMAT-36-PA & CEMAT-36PB]

CEMAT-36-OA

Answer two questions, taking one from each Unit.

UNIT - I

1. a) Explain the terms 'synthetic equivalent' and 'functional group interconversion' with suitable examples. 3
- b) Mention two criteria for a good protecting group. 2
- c) Work backwards to devise synthetic route to the following molecules.

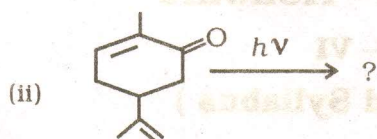
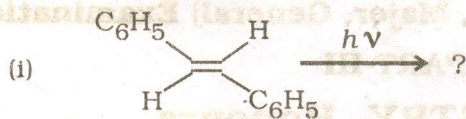


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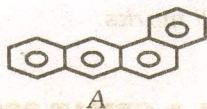
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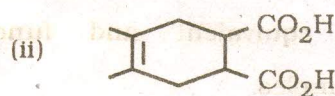
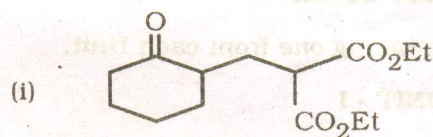
- d) Complete the following reactions from FMO considerations : $1\frac{1}{2} + 1\frac{1}{2}$



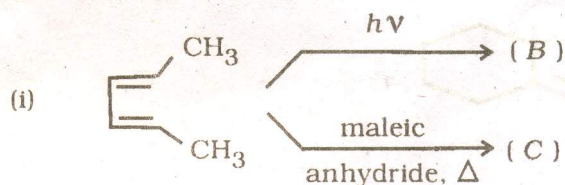
- e) Name the polynuclear hydrocarbon (A). 1



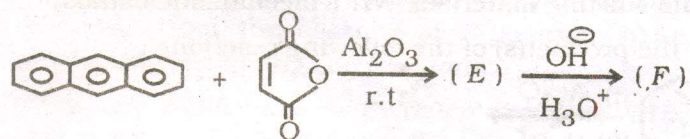
2. a) Give the retrosynthetic analysis and an efficient synthesis of the following compounds : $2 \times 1\frac{1}{2}$



- b) Identify (B), (C) and (D) in the following reactions and explain their formation by FMO theory. 2×3



- c) Identify the products and explain the following sequences of reactions :



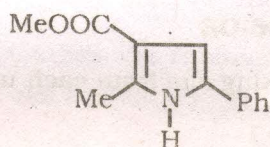
2

- d) In protecting an aldehyde to thioacetal, there is an inversion of polarity at the carbonyl carbon, but no such effect is observed in case of oxyacetal of the aldehyde. Explain.

2

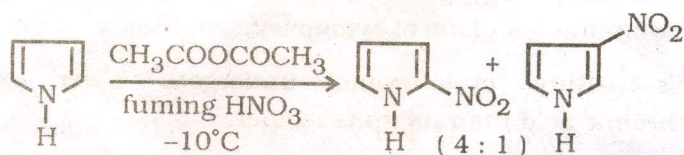
Unit - II

3. a) Outline the synthesis of the pyrrole derivative.



2

- b) Explain the following observation :



What strategy would you take to get 3-nitropyrrole as the major product ?

2 + 1

- c) Compare the basicity of pyrrole and pyridine. 2
- d) Write down the steps involved in metronidazole synthesis. 2
- e) Outline the synthesis of Paracetamol and mention its uses. 3

