

Q.P. Code : 60788

Fourth Semester M.Sc. Degree Examination,  
September/October 2020

(CBCS Scheme)

Chemistry

Paper C4020C - STEREOCHEMISTRY AND  
RETROSYNTHETIC ANALYSIS

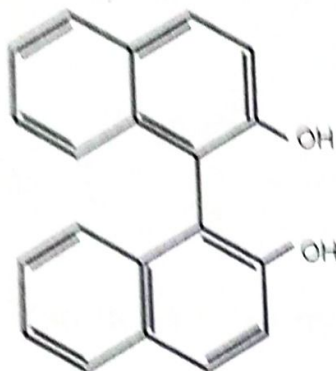
Time : 3 Hours

[Max. Marks : 70

Instructions to Candidates : Answer Q.No. 1 and any five of the remaining.

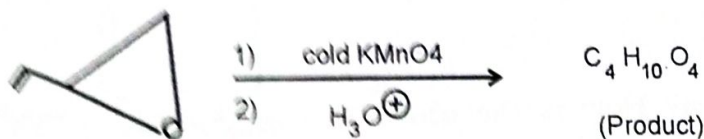
1. Answer any **TEN** of the following questions : (10 × 2 = 20)

(a) Assign with explanation, the configuration of the following compound :

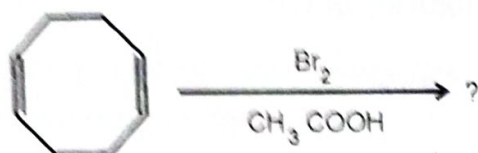


(b) Illustrate 'rule of shift' with an example.

(c) In the following transformation, draw all the stereo isomers of the product and designate them as chiral or achiral.



(d) Predict the product and propose suitable mechanism :



(e) Give synthetic equivalent for the following :





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3. Discuss :

(a) Distance rule

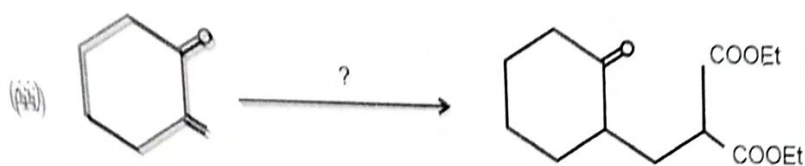
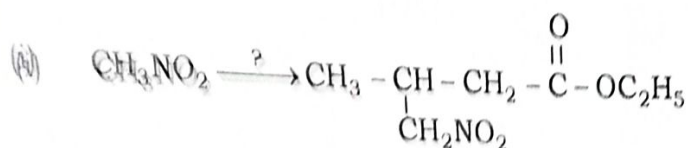
(b) Mills rule

(c) Determination of absolute stereochemistry by anomalous X-ray scattering technique.

(3 + 3 + 4)

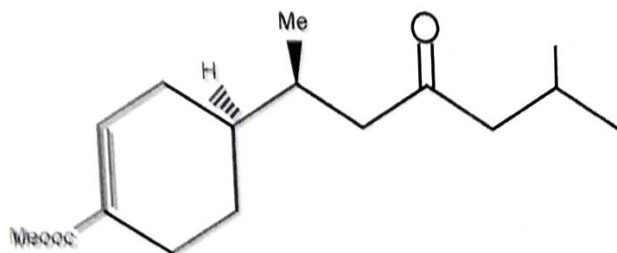
4. (a) Briefly describe any two techniques for the protection and deprotection of carbonyl groups.

(b) How are the following conversions realized?



(4 + 6)

5. (a) With suitable explanation, suggest a logical retro analysis for the compound given below :



(b) Formulate the retroanalysis of longifolene. Outline its synthesis. (5 + 5)

6. (a) Citing appropriate examples, discuss the optical activity of nitrogen containing compounds.

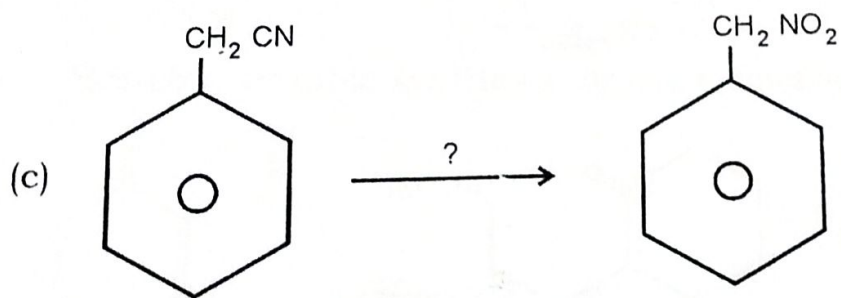
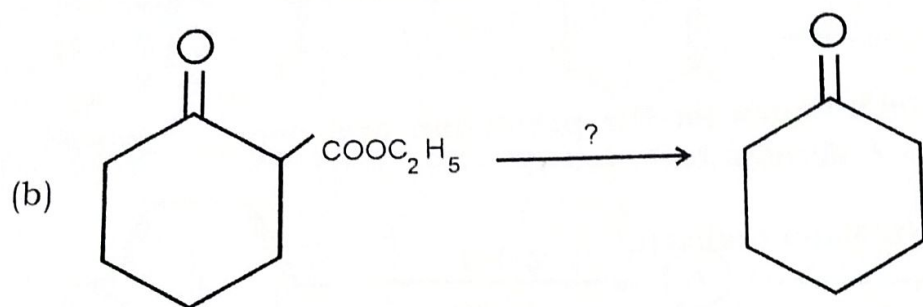
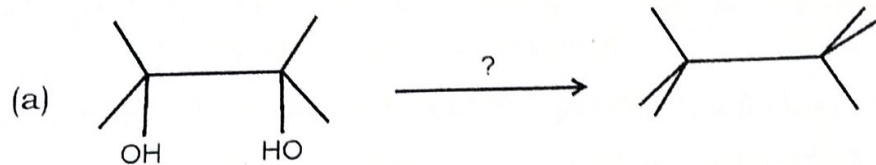
(b) Draw the Fischer projection formulae of each diastereomer of 4-methyl-hex-2-ene. Assign R/S notation to them. (5 + 5)

7. (a) Highlight the difference between one group and two group disconnections. Explain taking proper examples.

(b) Suggest the retro-analysis for the synthesis of Vitamin-D. (4 + 6)

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8. How are the following transformations achieved?



**(3 + 3 + 4)**