



III Semester M.Sc. Degree Examination, December 2016
(NS)
(2010-11 Scheme) (Repeaters)
CHEMISTRY
C-303 : OC : Chemistry of Natural Products

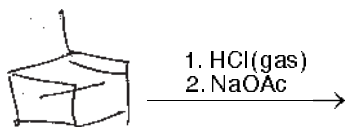
Time : 3 Hours

Max. Marks : 80

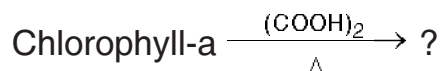
Instruction : Answer question 1 and **any five** of the remaining.

1. Answer **any ten** of the following. (10×2=20)

- Sketch the mode of union of isoprene units in abietic acid.
- Give a synthesis of α -terpineol.
- Draw all possible conformers of menthols.
- Predict the product and propose a mechanism.



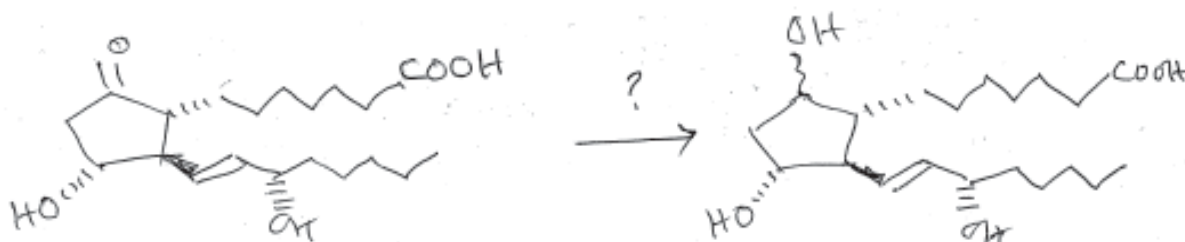
- What is the use of BrCN in the structural elucidation of alkaloids ?
- Give a synthesis of coniine.
- Predict the products of the following reaction.



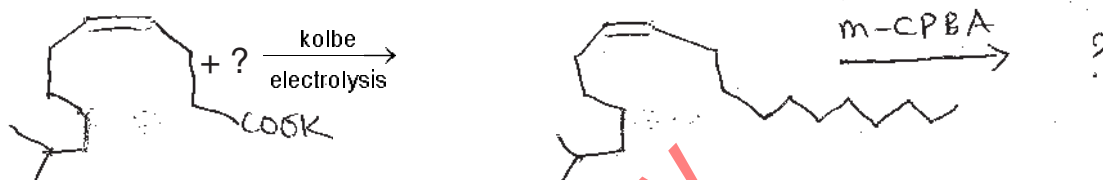
- Draw the structure of thymidylate.
- What is phosphodiester method of synthesing a oligonucleotide ? Explain with an example.
- Highlight the biological functions of prostaglandins .



k) How is the following conversion brought about ? Give a mechanism.



l) Complete the following equation and propose a mechanism for the first step.



2. a) Elucidate the structure of α -Pinene.
- b) Sketch a synthesis of morphine. (6+6=12)
3. a) Give the biosynthesis of squalene and explain how it gets cyclised into α -lanosterol.
- b) How is the structure of reserpine elucidated by chemical degradation studies ? (6+6=12)
4. a) Outline the synthesis of β -carotene.
- b) Give a photochemical synthesis of coradyline.
- c) Elucidate the structure of harmin. (3+3+6=12)
5. Sketch the synthesis of
 - a) Thromboxane B_2 .
 - b) dTpT by phosphoramidite method.
 - c) Faranal. (3×4=12)
6. a) How is the structure of PGE_2 elucidated ?
- b) Give an account of structure elucidation and synthesis of adenosine.
- c) Outline a stereoselective synthesis of grandisol. (3×4=12)
7. a) Give a solid phase synthesis of any one dinucleotide by phosphite triester method.
- b) Sketch a synthesis of chlorophyl-a. (4+8=12)