



III Semester M.Sc. Examination, December 2016  
(CBCS)  
CHEMISTRY  
302-OC : Chemistry of Natural Products

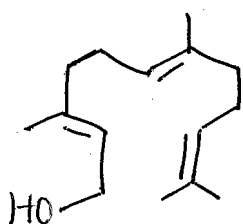
Time : 3 Hours

Max. Marks : 70

**Instruction:** Answer Question No. 1 and any five of the remaining questions.

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

a) Identify the isoprene units in the following compound.



- b) Formulate the synthesis of  $\alpha$ -terpineol.
- c) Give the mechanism of Wagner-Meerwein rearrangement of camphene.
- d) How do you establish the presence of methylenedioxy group in an alkaloid ?
- e) Propose a method of synthesis of coniine.
- f) Give the synthesis of cocaine.
- g) Predict the products in the following  
Haemin  $\xrightarrow{\text{Sn/HCl}}$  ?
- h) What are nucleotides and nucleosides ?
- i) Draw the structure of cobyrinic acid.
- j) Draw the stereochemical structure of thromboxane B<sub>2</sub>.
- k) Give a short synthesis of multistriatin.
- l) What are pheromones ? Illustrate their role in pest control.

P.T.O.



2. a) Mention the steps involved in the synthesis of reserpine.  
b) Elucidate the structure of Lysergic acid. **(6+4)**
3. a) Sketch the synthesis of Haemin.  
b) How do you synthesise 5, 6 – dimethyl benzimidazole ribofuranoside. **(6+4)**
4. a) Illustrate phosphotriester approach and its utility in the formation of internucleotide bonds with suitable examples.  
b) Formulate the synthesis of ribonucleotides using phosphoramidate approach. **(6+4)**
5. Discuss the steps involved in the synthesis of morphine. **10**
6. a) Elucidate in detail the structure of PGE<sub>3</sub>.  
b) Sketch the synthesis of (+)-disparlure. **(6+4)**
7. a) Outline the synthesis of Faranal.  
b) Sketch the synthesis of PGE<sub>1</sub> by Corey's approach. **(6+4)**
8. a) Show the steps involved in the preparation of β-carotene by Isler's method.  
b) Elucidate the structure of α-santonin. **(4+6)**
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