DD-298

M. Sc. EXAMINATION, Dec. 2017

(Fourth Semester)

(Re-appear Only)

CHEMISTRY

CH-616-B

Organic Chemistry Special-V

(Natural Products-2)

Time : 3 *Hours*] [*Maximum Marks :* 100

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit IV

7. Write short notes on the following : **20**

(i) Reducing and Non-reducing sugar

(ii) Anomeric effect

(iii) Epimers and anomers

(iv) Mutarotation.

8. (a) Give the synthesis of $PGF_2\alpha$. **10**

(b) How will you establish the structure of Maltose ? **10**

Unit I

1. (a) How the structure of santonin was established ? **10**

(b) What is Barbier-Wieland degradation ? Give application of this degradation in the synthesis of abietic acid. **10**

2. Establish the following : **20**

(i) Isomerism in Citral

(ii) Absolute configuration of γ-cadinene

(iii) Allylic hydroxyl group in farnesol

(iv) Presence and position of conjugated system of double bonds in Zinzibrene.

Unit II

3. (a) Give an account of general methods used for isolation and structure determination of alkaloids. **10**

(b) Discuss the synthesis and stereochemistry of quinine. **10**

4. (a) Explain the following : **10**

(i) Position of carboxylic group in lysergic acid

(ii) Position of double bond in morphine.

(b) Give the synthesis of papaverine. **10**

Unit III

5. (a) Prove that the side chain in cholesterol molecule is built up of eight carbon atoms and it terminates in an isopropyl group. **10**

(b) Give the synthesis of thyroxine. **10**

6. Explain the following : **20**

(i) Conversion of cholesterol into lithocholic acid

(ii) Presence of α, β-unsaturated carbonyl group in testosterone

(iii) Position of hydroxyl and ketone group is Oestrone

(iv) Conversion of cholesterol in 5β-cholenic acid.