



## CHE 510

M.Sc. (II<sup>nd</sup> SEMESTER) EXAMINATION, 2023-24

(CBCS MODE)

CHEMISTRY

Natural Products

5328

Time : Three Hours]

[Maximum Marks : 75

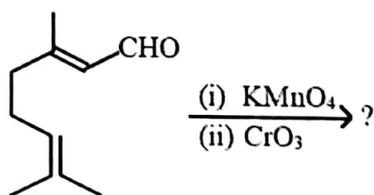
**Note:** There are **three** sections (A, B and C) and candidate has to attempt questions from all sections. Marks are indicated against each section.

### Section-A

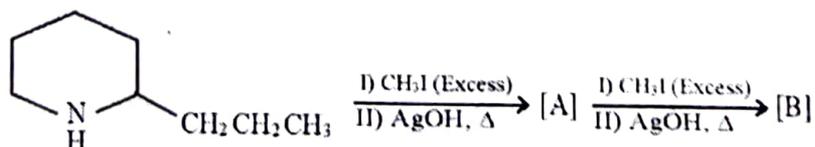
1. Answer **all** questions : 5×3=15

(a) Write the chemical name and Haworth's Structure of Lactose.

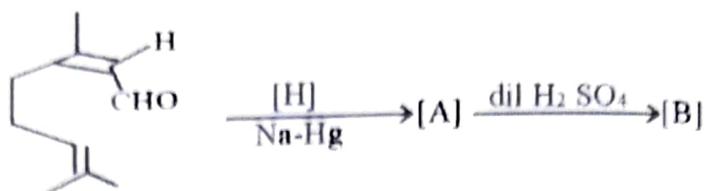
(b) Predict the products in the following reaction :



(c) Predicts the products in the following reaction.



- (d) Predicts the products in the following reaction



- (e) How will you differentiate among anthocyanins, flavones and flavonols by characteristic colour reaction ?

### Section-B

**Note:** Answer **all** questions of the following :  $4 \times 5 = 20$

2. Outline the synthesis of :

- (a) Papaverine

**Or**

- (b) Nicotine

3. Give one synthesis of :

- (a) Chrysin

**Or**

- (b) Quercetin

4. (a) Explain quercetin is 3, 3', 4', 5, 7-pentahydroxy flavona.

**Or**

- (b) Explain the formation of various products formed from papaverine as a result of oxidation with  $\text{KMnO}_4$

5. (a) Outline the synthesis of lactose.

**Or**

- (b) Outline the Synthesis of citral.

### SECTION-C

**Note:** Answer any **two** questions of the following :  $2 \times 20 = 40$

6. What are disaccharides ? Discuss the structure of sucrose.
7. How will you establish the structure of  $\alpha$ -terpineol ? Give one synthesis in support of it.
8. Controlled Oxidation of quinine with chromic acid gives quininic acid and meroquinine. Elucidate the structure of quininic acid. Also prove that quinoline half of quinine is joined to second half through secondary alcoholic group.

9. How amino acids act as precursors for the biosynthesis alkaloids. What fundamental reactions are involved ? Explain the biogenesis of any one group of alkaloid.

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