

This question paper contains 6 printed pages]

**NY—88—2023**

**FACULTY OF SCIENCE AND TECHNOLOGY**

**M.Sc. (Second Year) (Third Semester) EXAMINATION**

**NOVEMBER/DECEMBER, 2023**

**(New/CBCS Pattern)**

**ORGANIC CHEMISTRY**

**CH-512/2**

**(Natural Products)**

**(Thursday, 7-12-2023)**

**Time : 2.00 p.m. to 5.00 p.m.**

*Time—3 Hours*

*Maximum Marks—75*

*N.B. :— (i) Attempt all questions.*

*(ii) Figures to the right indicate full marks.*

1. Solve any *three* : 15

(i) Discuss the structure determination of Ascorbic acid.

(ii) Conversion of cholesterol to progesterone.

(iii) Write a note on Rotenones.

(iv) Give the synthesis of camphoronic acid.

(v) Explain structure determination of citral.

P.T.O.

2. Answer the following (any *three*) : 15

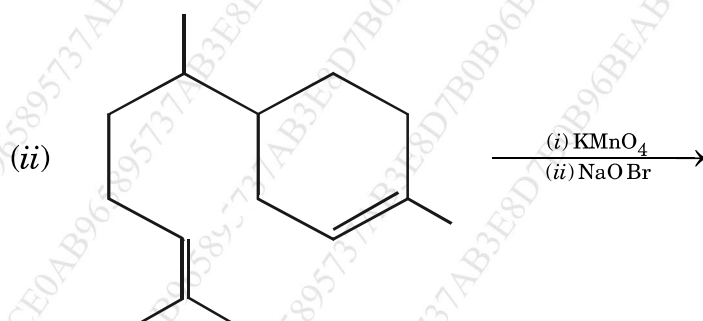
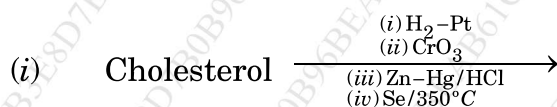
- Discuss Robinson synthesis for quercetin.
- What is Diel's hydrocarbon ? Explain in detail with its synthesis.
- Explain structure determination of Anthocyanin.
- Explain the presence of  $\gamma$ -lactone ring in Vitamin C.

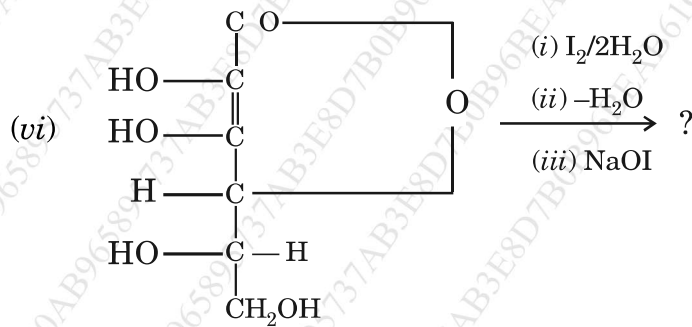
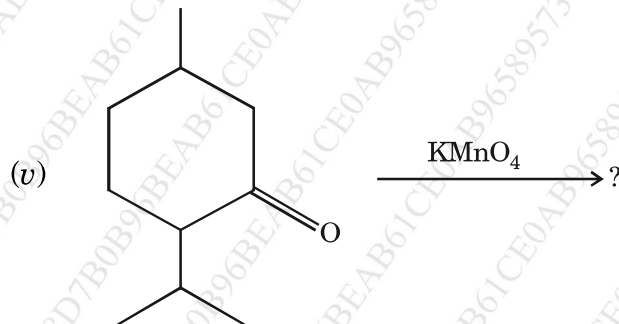
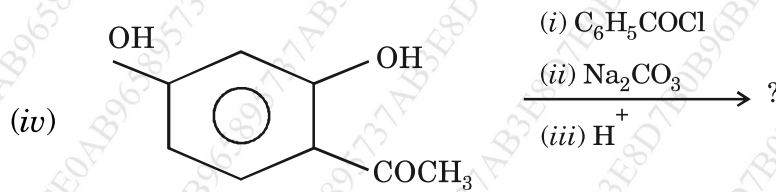
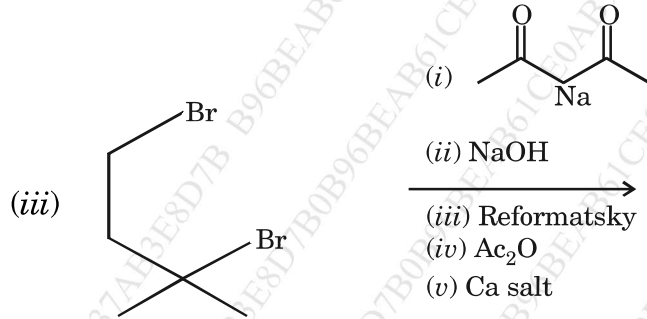
3. (a) What are Vitamins ? How are they classified ? Explain the deficiency diseases caused due to lack of vitamins and discuss the constitution of Retinol. 7

Or

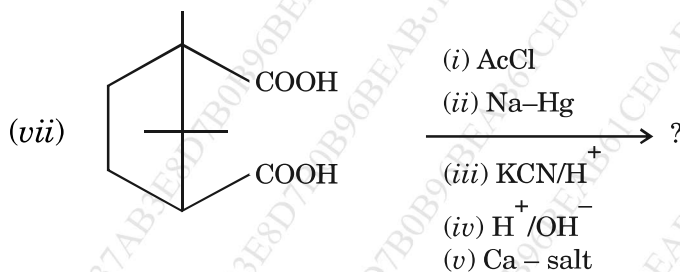
What are natural and synthetic pyrethroids ? Explain their biological activities.

(b) Predict the product (any *four*) : 8





P.T.O.



4. (a) What are pheromones? Give their classification and role as sex attractant and for plant protection. 7

*Or*

Discuss the presence of Angular methyl group of C-10 in cholesterol.

- (b) How will you convert : 8

- (a) Epiandrosterone to Androsterone  
(b) diogenin to progesterone.

*Or*

Explain the synthesis and physiological effects of  $\text{PGE}_2$ .

5. (a) Select correct alternatives from the following : 5

- (i) ..... is a water soluble vitamin.

- (a) Vitamin A  
(b) Vitamin B  
(c) Vitamin C  
(d) Both (a) and (c)

- (ii) Cholesterol is also called as .....
- (a) fatty ester
  - (b) fatty alcohol
  - (c) both (a) and (b)
  - (d) none of the above
- (iii) Oesterial is a ..... sex hormone.
- (a) Male
  - (b) Female
  - (c) Non-steroidal
  - (d) None of the above
- (iv) Quinine contains ..... alcoholic group.
- (a) Tertiary
  - (b) Secondary
  - (c) Primary
  - (d) None of the above
- (v) Cyanidin chloride on hydrolysis with HCl gives .....
- (a) Glucose
  - (b) Maltose
  - (c) Ribose
  - (d) Galastone

P.T.O.

WT

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(b) Write short notes on (any *two*) :

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- (a) Bombycol synthesis
- (b) Structure determination of quininic acid
- (c) Structure of meroquinene.

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