

This question paper contains 3 printed pages]

ST—122/123—2022

FACULTY OF SCIENCE AND TECHNOLOGY

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

MAY/JUNE, 2022

(CBCS Pattern)

ORGANIC CHEMISTRY

Paper XVI (OCH-512/2-OCH-532/2)

(Natural Products)

(Thursday, 30-6-2022)

Time : 2.00 p.m. to 5.45 p.m.

Time— 3.45 Hours

Maximum Marks—75

N.B. :— (i) All questions are compulsory.

(ii) Figures to the right indicate full marks.

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

(a) Give detailed classification of vitamins. Give the conversion of Vitamin A₁ to Vitamin A₂.

(b) What are terpenoids ? Give structure determination of menthol.

(c) Give synthesis of Quinic acid.

(d) Discuss the nature of side chain in cholesterol.

(e) What are Prostaglandins ? Give physiological effects of PGE and PGF₂X.

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

(a) What are anthocyanins ? Give synthesis of Quercetin.

(b) Give structure determination of retinol.

P.T.O.

- (c) Explain biosynthesis of terpenoids.
- (d) Explain the size of Ring A, B and C in cholesterol.
- (e) Write a note on Natural Pyrethroids.
3. (A) What are Rotenones and Pheromones ? Give their structure. Give their functions. 7

Or

Explain the position of double bond and hydroxyl group in cholesterol.

- (B) Answer the following : 8
- (a) Give the conversion of Camphor to Camphoric acid and Camphoronic acid.
- (b) Write note on deficiency syndrome of Vitamins.
4. (A) Give the structure determination of Zingiberene along its synthesis. 7

Or

What are alkaloids ? Explain the presence of ethylenic double bond and secondary alcoholic –OH group in quinine.

- (B) Give synthesis for : 8
- (a) Citral
- (b) Flavone
5. (A) Select the *correct* Alternative from the following : 5
- (i) is the chief alkaloid in opium.
- (a) Quinine (b) Morphine
- (c) Nicotine (d) Atropine

- (ii) of the following is used as insecticide, piscicide and pesticide.
- (a) Rotenone (b) Ascorbic acid
(c) Morphine (d) Citral
- (iii) Flavane when boiled with conc. KOH gives.....
- (a) Salicylic acid
(b) Acetophenone
(c) *O*-hydroxy acetophenone
(d) All of the above
- (iv) plays a key role in development of male reproductive tissues.
- (a) Oestrone (b) Oestriol
(c) Progesterone (d) Testosterone
- (v) is a water soluble vitamin presents in citrus fruits.
- (a) Vitamin A (b) Vitamin B
(c) Vitamin C (d) Vitamin D

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

10

- (i) Conversion of Cholesterol in Progesterone
(ii) Synthesis of Farnesol
(iii) Diels Hydrocarbon.