

SG - 249

Total No. of Pages : 3

Seat No.	
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M.Sc. (Part - II) (Semester - IV) (CBCS) Examination,
March - 2023
ORGANIC CHEMISTRY
Chemistry of Natural Products (Paper - XV)
Sub. Code : 81566/86731

Day and Date : Friday, 16 - 06 - 2023

Total Marks : 80

Time : 10.30 a.m. to 01.30 p.m.

- Instructions :
- 1) Attempt all five questions.
 - 2) Question no. 1 is compulsory.
 - 3) All questions carry equal marks.
 - 4) Answer to the all questions (section-I and II) must be written in the same answer book.
 - 5) Figure to the right indicate marks.
 - 6) Attempt at least two questions from section-I and any two questions from Section-II.

Q1) Answer the following :

[16]

- a) Zingiberene $\xrightarrow{O_3}$?
- b) What is molecular formula of isoprene unit?
- i) $C_{12}H_{24}$
 - ii) C_5H_8
 - iii) $C_{10}H_{12}$
 - iv) C_6H_6
- c) β -Cuparenone on oxidation with HNO_3 gives _____.
- i) Benzene 1,4-dicarboxylic acid
 - ii) Benzene 1,3-dicarboxylic acid
 - iii) Benzene 1,2-dicarboxylic acid
 - iv) 1,4-dicarboxylic acid
- d) Camphor $\xrightarrow[\text{+HCN}]{\text{Iso-amyl nitrite}}$?
- e) The biosynthetic precursor for the steroids is _____.
- i) secologanin
 - ii) shikimic acid
 - iii) mevalonic acid
 - iv) α -ketoglutaric acid

P.T.O.

- f) What are Vitamins and pro-vitamins?
- g) Which of the following is not recognized as sex hormone?
 i) Testosterone
 ii) Cortisone
 iii) Estrone
 iv) Progesterone
- h) How many moles of CH_3I requires to quaternize codeine?
 i) Four
 ii) Two
 iii) Three
 iv) One
- i) How many chiral centers are present in oestrone?
- j) Riboflavin $\xrightarrow{\text{light}}$?
- k) What are sex hormones?
- l) What are lipids? Give one examples.
- m) Biotin $\xrightarrow[\text{CH}_3\text{COOH}]{\text{H}_2\text{O}_2 \text{ in}}$?
- n) Define the term biosynthesis?
- o) Codeine on oxidation with CrO_3 forms _____.
 i) Morpholine
 ii) Reserpine acid
 iii) Thebeinone
 iv) Codeinone
- p) What are the major five classes of lipids?

SECTION - I

- Q2)** a) Outline the synthesis of (\pm) oestrone using two different starting materials. [8]
- b) Point out the steps involved in the synthesis of progesterone from cholesterol. [8]
- Q3)** a) How will you establish structure of Abietic acid on the basis of analytical evidences? [10]
- b) How will you prove the structure of Camphoric acid? [6]

Q4) How will you confirm the following?

- Configuration of ephedrine.
- Stereochemistry of morphine of C_{14} .
- Stereochemistry of Reserpine at C_3 .

SECTION - II

Q5) a) What are Vitamins? Give functions of it in brief and discuss the analytical evidences in Support of structure of Vit. B1. [10]

b) Give an account on physiological functions of prostaglandins. [6]

Q6) a) How will you establish the position of two rings and functional nature in biotin? [8]

b) Point out the synthesis of cholesterol. [8]

Q7) Write a note on the following (Any two) : [16]

- Synthesis of Zingiberene.
- Biogenesis of Conin.
- Biogenesis of Lanosterol.

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