

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI – 86  
(For candidates admitted during the academic year 2015-16 & thereafter)

SUBJECT CODE: 15CH/PI/NP24

M.Sc. DEGREE EXAMINATION, NOVEMBER 2019  
BRANCH IV- CHEMISTRY

COURSE: CORE

DEPT. NUMBER: .....

PAPER: CHEMISTRY OF NATURAL PRODUCTS

TIME: 30 MINUTES

MAXIMUM MARKS: 20

SECTION A

ANSWER ALL THE QUESTIONS

(20x1 =20 marks)

I. Choose the correct answer.

- Amino acids give a coloured product with \_\_\_\_\_.  
a) Biuret      b) Molisch test      c) Ninhydrin      d) Fehling's reagent
- The reagent used in the Edman degradation method is \_\_\_\_\_.  
a) Tosyl chloride      b) Phenylisothiocyanate      c) Diborane      d) SeO<sub>2</sub>
- Steroids yield Diel's hydrocarbon when distilled with \_\_\_\_\_.  
a) Palladium      b) Platinum      c) Sulphur      d) Selenium
- \_\_\_\_\_ are female or follicular hormones.  
a) Androgen      b) Estrogen      c) Progesterone      d) Gestogen
- The presence of carbonyl group in terpenes can be detected by \_\_\_\_\_.  
a) Phenyl hydrazine      b) Neutral FeCl<sub>3</sub>      c) Acetic anhydride      d) Tosyl chloride
- Ozonolysis is used to locate the number of \_\_\_\_\_ in terpenes.  
a) Alcoholic OH      b) Double bonds      c) Carbonyl groups      d) Phenolic OH
- The number of hydroxyl groups can be determined by treating an alkaloid with \_\_\_\_\_.  
a) acetic anhydride      b) methyl iodide      c) hydrazine      d) MeMgBr
- Von Braun's method uses \_\_\_\_\_ to determine the presence of secondary cyclic amines.  
a) CN-Br      b) Na/EtOH      c) C<sub>6</sub>H<sub>5</sub>COCl/NaOH      d) H<sub>2</sub>SO<sub>4</sub>
- Carbohydrates generally found in anthocyanins are  
a) Idose and Mannose      b) Glucose and Galactose  
c) Ribose and Talose      d) Rhamnose and Erythrose
- Flavonols have an -OH group in the \_\_\_\_\_ position.  
a) second      b) third      c) fourth      d) fifth

II. Fill in the blanks.

- Amino acids which are not synthesized in the body are called \_\_\_\_\_.
- Hydrogenation of cholesterol followed by oxidation with chromium trioxide yields \_\_\_\_\_.
- The number of isoprene units in sesquiterpenes is \_\_\_\_\_.
- Tertiary amines are determined by treating an alkaloid with \_\_\_\_\_.
- The basic structural unit of anthocyanins is \_\_\_\_\_.

**III. Answer in a line or two.**

16. Differentiate between globular and fibrous proteins.

17. Give the classification of sterols.

18. What is the isoprene rule?

19. What is the Herzog-Meyer method?

20. Differentiate between flavones and isoflavones.

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**TIME: 2.5 HOURS**

**MAXIMUM MARKS: 80**

**SECTION B**

**I. ANSWER ANY FIVE QUESTIONS (5 x 8 = 40 marks)**

1. How can the position of the hydroxy group and double bond be determined in cholesterol?
2. Discuss the structural elucidation of Quercetin.
3. Explain Hofmann exhaustive methylation method.
4. How can the position of the angular methyl group and carboxylic acid group be determined in abetic acid?
5. Discuss the chemical properties of amino acids.
6. Explain the structural relationship between flavonols and catechins.
7. Discuss the structural elucidation of conine.

**SECTION C**

**I. ANSWER ANY TWO QUESTIONS (2 x 20= 40 marks)**

1. a) Discuss the primary, secondary and tertiary structure of proteins. (12 marks)  
b) Elucidate the structure of Cyanidin. (8 marks)
2. a) Discuss the structural elucidation of Nicotine. (10 marks)  
b) Explain any three methods for the preparation of amino acids. (10 marks)
3. a) Discuss the structural elucidation of  $\beta$ -carotene. (12 marks)  
b) Explain the synthesis of progesterone. (8 marks)

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