

PE – 497
(534) M.Sc.CHEMISTRY (Fourth Semester)
Examination June 2022 Compulsory/Optiona
Group - Paper -IV
CHEMISTRY OF NATURAL PRODUCT

Time : Three Hours]

[Maximum Marks : 80
[Minimum Pass Marks : 29

नोट : दोनों खण्डों से निर्देशानुसार उत्तर दीजिए। प्रश्नों के अंक उनके दाहिनी ओर अंकित हैं।

Note : Answer from both the Sections as directed. The figures in the right-hand margin indicate marks.

Section-A

Q 1. Attempt following question :-

2x10=20

- (a) Write the structure of β carotene; How many Isoprene units are present in it?
- (b) What is Tilden reagent? what is its use?
- (c) Give an example of diterpenoid with structure:
- (d) Write name and structure of one adrenocortical hormone.
- (e) Sketch the Structure of morphine.
- (f) Comment on physiological action of alkaloid.
- (g) Sketch the structure of cholesterol and Write which Carbon atoms angular methyl groups are present?
- (h) What products are obtained by Thermal degradation of cyanidin chloride?
- (i) What is IsoFLAVONES an example with structure, Comment on the relation between β carotene and vitamin A.
- (j) What is cyanidin chloride?

Section – B

12x5=60

2. (a) Write a note on isolation and separation of terpenoids from essential oil.
- (b) Discuss the structure of menthol.

Or

- (a) What is isoprene rule?
- (b) Elucidate the structure of CITRAL and give its synthesis.
3. Discuss following degradative methods used for structure establishment of alkaloids:-
 - (i) Hoffmann exhaustive methylation method.
 - (ii) Emde method
 - (iii) Van Brauns method

Or

- (a) Comment on classification of alkaloids based on nitrogen heterocyclic ring.
- (b) Discuss analytical and Synthetic evidences to establish Structure of Nicotine.
4. Give Woodward's synthesis of cholesterol.

Or

Discuss structure and Synthesis of following hormones:-

- (i) Testosterone (ii) Oestrone
5. (a) Discuss the degradative and Synthetic evidences to establish the structure of QUERCETIN.
- (b) Show Structure relationship between Quercetin and cyanidin chlorides.

Or

Explain following pathway for biosynthesis of flavanoids:-

- (i) Aromatic pathway (ii) SHIKIMIC ACID PATHWAY.
6. Discuss structure and Synthesis of haemoglobin.

Or

Discuss Structure of chlorophyll. What is the structural difference between chlorophyll a and b chlorophyll b.

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