

III Semester M.Sc. Examination, January 2019
(CBCS)
CHEMISTRY

302 – OC : Chemistry of Natural Products

Time : 3 Hours

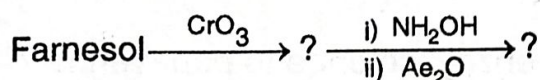
Max. Marks : 70

Instruction : Answer question No. 1 and any five of the following.

1. Answer any ten of the following :

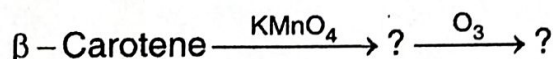
(10×2=20)

a) Predict the products in the following :



b) What is isoprene rule ? Explain with example.

c) Formulate the reaction in the following :

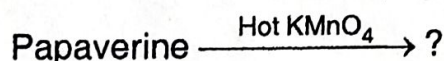


d) How the presence of secondary amino group in ephedrine was confirmed ?

e) How the following interconversion is achieved ?



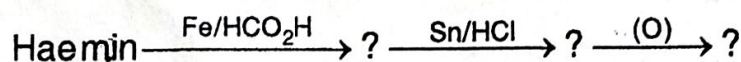
f) Predict the product.



g) Draw the structure of purine base present in nucleic acids.

h) What are the deficiency diseases of Vitamin B₁₂ ?

i) Formulate the reaction in the following :



j) Write the stereochemical structure of PGE1 and PGE2. Indicate the differences between them.

k) Explain the role of insect pheromones in pest control.

l) What are prostaglandins ? Give any two biological functions of prostaglandins ?



2. a) Outline the steps involved in the synthesis of menthol, starting from m-cresol.
- b) Give evidences to prove the presence of carboxyl group in abietic acid at position - 4. (5+5=10)

3. a) How santonin was converted into desmotroposantonin ?
- b) Explain any one synthesis of β -Carotene.
- c) How camphor was commercially synthesized ? (3+4+3=10)

4. a) Explain the photochemical synthesis of Nuciferine.
- b) Sketch the synthesis of dimethyl morphal. (4+6=10)

5. a) How do you convert 3, 4-dimethoxy benzoyl chloride to papaverine ?
- b) Write notes on :
- i) Arndt-Eiestert synthesis
- ii) Von-Braun degradation. (4+6=10)

6. a) Indicate the relationship between chlorophyll-a and chlorophyll-b. Formulate their reaction with
- i) KOH Solution
- ii) Ethanotic solution of hydrated oxatic acid.
- b) How the structure of nucleotide have been established ? (6+4=10)

7. Write notes on :
- a) Hydroxy protecting groups.
- b) Methods of formation of internucleotide bonds.
- c) Biosynthesis of Prostaglandin. (3+3+4=10)

8. a) Outline the synthesis of Brevicommin.
- b) Explain the up John's synthesis of PGE3. (4+6=10)
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