



EASTERN UNIVERSITY, SRI LANKA
THIRD YEAR FIRST SEMESTER EXAMINATION
IN SCIENCE-2021/2022 (Sep/Oct 2024)
CH3011 CHEMISTRY OF NATURAL PRODUCTS-I

Answer **all** questions

Time Allowed: **One** hour

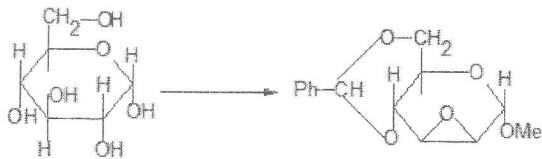
- 1) a) Draw the structural formulae of two isomers of Glucose and Fructose. (10 marks)
- b) Explain Kiliani-Fisher synthesis for aldopentose and Wohl's degradation for aldohexose. (20 marks)
- c) What are osazone formation reaction? Describe the mechanism involved in the formation of a glucosazones. (20 marks)
- d) What is mutarotation in relation to monosaccharides? Explain the mutarotation by using D-glucose as an example. (20 marks)
- e) Show by means of reaction schemes how the following conversions may be effected. Specify reagents and essential experimental conditions.

i)



Cond.

ii)



(30 marks)

2) a) Discuss the structure and formation of sucrose and lactose.

(20 marks)

b) Write equations to illustrate that the cleavage reaction of the following monosaccharides with periodic acid

i) HOCH_2COR

ii) HCOCHOHR

(20 marks)

c) Citral shows two types of geometrical isomerism, *cis* and *trans*.

i) Write the possible structures of citral.

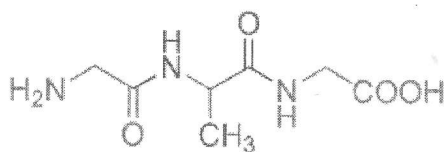
ii) What will happen if citral undergoes oxidation with alkaline KMnO_4 followed by chromic acid.

(20 marks)

d) Outline one method to synthesis camphor from readily available compounds.

(20 marks)

e) Show how the tripeptide(X) could be synthesized starting from the individual amino acids.



(X)

(20 marks)

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