

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

SPECIAL/RESIT

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE

BIOC 311/312: PHYTOCHEMISTRY

STREAMS: BCOM

TIME: 2 HOURS

DAY/DATE: FRIDAY 13/8/2021

8.30 A.M. – 10. 30 A.M.

INSTRUCTIONS:

QUESTION ONE (30 MARKS)

- a) (i) Differentiate between primary and secondary metabolites, giving an example of each. (4 marks)
- ii) Define a phytochemical compound. (1 mark)
- b) Compare and contrast the structure of flavonol and flavone. (5 marks)
- c) Describe the biochemical properties and importance of sulphur-containing secondary metabolites. (5 marks)
- d) Describe the pharmacological role of curcumin obtained from turmeric. (5 marks)
- e) Describe the pharmaceutical importance of Vinblastine and vincristine. (5 marks)
- f) Illustrate the structure of psoralen and give its significance. (5 marks)

QUESTION TWO (20 MARKS)

- a) With the aid of suitable structural illustrations, describe the acetate/mevalonate pathway for the synthesis of geranyldiphosphate. (10 marks)
- b) Explain in details the different classes of alkaloids. (10 marks)

QUESTION THREE (20 MARKS)

- a) Explain any ten (10) pharmaceutical and industrial application of terpenes. (10 marks)
 - b) Describe the mevalonate independent pathway for the biosynthesis of isoprenoids.
(10 marks)
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