

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE
OF BACHELOR OF SCIENCE IN BIOCHEMISTRY

BIOC 416: MEDICAL BIOCHEMISTRY I

STREAMS: BSC (BIOCHEM)

TIME: 2 HOURS

DAY/DATE: MONDAY 02/12/2019

2.30 P.M. –4.30 P.M.

INSTRUCTIONS:

- (i) Answer questions ONE and any other TWO questions
- (ii) Do not write on the question paper

QUESTION 1 (COMPULSORY) – 30 MARKS

- (a) Giving specific examples, briefly discuss viral oncogenesis [5 marks]
- (b) (i) What is neurotoxicity [1 mark]
- (ii) Briefly describe four neurotoxic injuries affecting the neuronal structure or function. [4 marks]
- (c) Define Acute Myeloid Leukemia (AML). State 4 predisposing factors to acquisition of AML. [5 marks]
- (d) (i) Explain the biochemical sequence of events leading to profound hypoglycaemia in an apparently healthy subject 36 hours after an alcoholic binge.
- (ii) How does the alcohol deterrent, antabuse (disulfiram), work? [5 marks]
- (e) State three characteristics of ideal tumor markers. State their roles in the management of cancers. [6 marks]

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- (f) (i) Describe Hodgkin's lymphoma (HL). [1 mark]
(ii) Briefly describe the causes, symptoms and diagnosis of Hodgkin's lymphoma.

[3

marks]

QUESTION 2 (20 MARKS)

- (a) Discuss 5 biomarkers of ethanol abuse. [10 marks]
(b) There is a 3-4 fold variability in the rate of alcohol elimination by humans because of various genetic and environmental. Describe 5 factors modifying alcohol elimination rate.

[10

marks]

QUESTION 3 (20 MARKS)

- (a) Explain how the extrinsic and intrinsic coagulation pathways lead to the common pathway, and the coagulation factors involved in each. [10 marks]
(b) Highlight how pro-oncogenes, oncogenes and Tumor suppressor genes modulate tumor formations. [10 marks]

QUESTION 4 (20 MARKS)

- (a) (i) Differentiate between leukemia and lymphoma. [2 marks]
(ii) Discuss the four main types of leukemia. [8 marks]
(b) Discuss the clinical significance of tumor markers. [10 marks]
