

CHUKA



UNIVERSITY

**UNIVERSITY EXAMINATIONS****RESIT/SPECIAL EXAMINATION****EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF  
BIOCHEMISTRY****BIOC 416: BIOCHEMISTRY PATHOLOGY AND TOXICOLOGY****STREAMS: BIOC****TIME: 2 HOURS****DAY/DATE: THURSDAY 26/07/2018****11.30 A.M. – 1.30 P.M.****INSTRUCTIONS:** *Answer ALL questions*

1. A 65-year –old man was admitted to the emergency department in an unconscious state. Apparently, he had become increasingly depressed after death of his younger son two months ago. Previously before his death he had been a moderate drinker, but consumption of alcohol had increased markedly over the last few weeks. He had also been eating poorly. His elder son had dropped around to see him on Sunday morning and found him unconscious in the living room couch with two empty bottles of whisky. Three more bottles were also found on the living room table.

On examination he could not be roused, his breathing was deep and noisy.

Alcohol could be smelt in his breath, and his temp was 36°C

•Lab findings:

•Blood alcohol 550mg/dl

•Blood glucose 50mg/dl

•Blood lactate 8 mmol/L

•pH 7.21

(a) Give a detailed account on the metabolism of alcohol in this patient (10 marks)

(b) What is the biochemical basis for all the laboratory findings in this patient? (10 marks)

2. (a). Highlight how Proto-oncogenes, Oncogenes and Tumor suppressor genes modulate tumor formations (10 marks)

(b). Discuss the clinical significance of tumor markers (10 marks)

**3.** (a). Describe the three mechanisms involved in hemostasis (10 marks)

(b). Explain how the extrinsic and intrinsic coagulation pathways lead to the common pathway, and the coagulation factors involved in each (10 marks)

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