

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF BACHELOR OF SCIENCE  
IN BIOMEDICAL SCIENCE AND TECHNOLOGY

**BMET 424: CLINICAL PATHOLOGY**

**STREAMS: BMET (Y4, S2)**

**TIME: 2 HOURS**

**DAY/DATE: MONDAY 20/04/2020**

**8.30 A.M – 10.30 A.M.**

**INSTRUCTIONS**

- Answer question *one* and *anyother two* questions

**QUESTION 1 (COMPULSORY) (30 MARKS)**

- a) A GP was called to see a 21 - year - old female student who had been complaining of a flu-like illness for 2 days. The illness had become worse, with symptoms of fever, vomiting and abdominal tenderness in the right upper quadrant. On examining the patient, the doctor found that she was pyrexial and jaundiced. The liver was enlarged and tender. On questioning her, the doctor found that she had recently returned from a long holiday in Asia. A sample of urine appeared dark, and bilirubin was present and urobilinogen was increased. A blood sample was taken for liver function tests, the results of which were as follows:

Serum	Result	Reference range
Albumin	40	35–50g/L
ALP activity	190	40–125 U/L
ALT activity	560	10–50 U/L
Bilirubin, total	110	3–16 $\mu$ mol/L
GGT activity	60	5–35 U/L

Explain the most likely diagnosis.

(5 Marks)

- b) Highlight 5 instructions that should be followed for the correct use of urine test strip.

(6 Marks)

c) Outline 5 principal reasons for requesting biochemical tests. (5 Marks)

d) A 28 - year - old man requested cholesterol testing because his father had died of a myocardial infarction in his thirties, his paternal grandfather had developed angina in his early forties and died suddenly in his late forties, presumably of an infarction, and there was a further history of ischaemic heart disease at a young age in his more extended family. The GP noted that he had tendon xanthomas on his knuckles and on his Achilles tendons. He took plenty of exercise, followed a healthy diet and was not overweight, did not smoke and was normotensive.

Explain the history and the following results. (6 Marks)

Serum	Result	Reference range
Cholesterol	10.6	mmo/L
Triglyceride	1.4	0.6–1.7 mmo/L
HDL	1.9	0.5–1.6 mmo/L
Cholesterol:HDL	5.6	
LDL cholesterol	8.1	mmo/L

e) Briefly describe urea breath test. (4 Marks)

f) Identify 4 proteins of major diagnostic interest in Myocardial Infarction. (4 Marks)

**QUESTION 2 (20 MARKS)**

a) Discuss various tests done to identify diseases involving cerebrospinal fluid.(14 Marks)

b) Describe the diagnosis of thromboembolic disease. (6 Marks)

**QUESTION 3 (20 MARKS)**

a) Explain the diagnosis of acute and chronic pancreatitis. (10 Marks)

b) Discuss 4 biochemical tests done in the diagnosis of myocardial infarction and ischaemia. (10 Marks)

**QUESTION 4 (20 MARKS)**

a) Describe 3 most common tests done by majority of the laboratories in the investigation of plasma lipid abnormalities. (10 Marks)

b) Discuss the tests done to evaluate absorption of carbohydrates, fats, amino acids and bile acids. (10 Marks)

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