



UNIVERSITY OF JAFFNA, SRI LANKA
BACHELOR OF SCIENCE IN MEDICAL LABORATORY SCIENCES
FOURTH YEAR FIRST SEMESTER EXAMINATION – FEBRUARY 2017

MLSCM 4103 CLINICAL BIOCHEMISTRY II

Date: 27.02.2017

Time: 3 hours

ANSWER ALL SIX QUESTIONS.

1. Write short notes on the following:

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| 1.1 Twenty four (24) hours urine Vaniline mandellic acid (VMA) | (25 marks) |
| 1.2 Wilson disease | (25 marks) |
| 1.3 Apo A1/ B 100 ratio | (25 marks) |
| 1.4 Gastric function test | (25 marks) |

2. A 50 year old woman presented to the medical clinic with increased weight gain especially in the trunk, moon face and thin wrinkled skin. She was suspected to have Cushing Syndrome.

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| 2.1 List three (03) causes for Cushing Syndrome. | (15 marks) |
| 2.2 What is the baseline investigation that has to be done in this patient? | (10 marks) |
| 2.3 Name one (01) dynamic function test that can be done as the second line test in this patient. | (15 marks) |
| 2.4 Explain briefly how the investigation mentioned in 2.3 is done including patient preparation, procedure and interpretation of results. | (40 marks) |
| 2.5 List two (02) further investigations that can be done in this patient if the investigation mentioned in 2.3 is not within the normal range. | (20 marks) |

3. A 55 year old man presented to the emergency unit with altered consciousness and mild jaundice. His abdomen was distended and he was suspected to have chronic liver disease. His past history revealed jaundice once before at the age of 50 years which was managed conservatively.

3.1 List the basic investigations you will do in this patient and the probable changes seen in each of them. (40 marks)

3.2 His ultrasound scan of abdomen revealed ascitis and the liver showed cirrhotic changes. His peritoneal fluid was sent for analysis to you. What tests will you do in the peritoneal fluid for this patient? (20 marks)

3.3 List **four** (04) causative diseases that have led to the present condition in this patient. (10 marks)

3.4 List the investigations for each of the condition mentioned in 3.3 to differentiate between them. (30 marks)

4.

4.1.

4.1.1 List **four** (04) types of renal function tests that are used to assess the different functions of the kidney. (10 marks)

4.1.2 What is estimated glomerular filtration rate (eGFR)? (10 marks)

4.1.3 List **two** (02) situations where eGFR cannot be used in clinical practice. (10 marks)

4.2

4.2.1 Describe briefly the sample collection and handling of urine samples for microscopy. (20 marks)

4.2.2 List **two** (02) non pathologic and **two** (02) pathologic causes for urine turbidity. (10 marks)

4.2.3 How the urinary casts are formed. (10 marks)

4.2.4 List **two** (02) risk factors that can cause cast formation. (10 marks)

4.2.5.

- 4.2.5.1 List **two** (02) pathological crystals that can be observed in urine under the microscope. (05 marks)
- 4.2.5.2 Draw the sketches of each crystal mentioned in 4.2.5.1 giving the important identifying feature. (15 marks)

5.

- 5.1 Define quality assurance. (10 marks)
- 5.2 What are the elements of quality assurance programme? (30 marks)
- 5.3. You are requested to run an internal quality control programme in a Chemical Pathology laboratory working for 24 hours a day.
- 5.3.1 Enumerate the characteristics of the quality control material to be ordered. (10 marks)
- 5.3.2 How will you prepare and store the quality control materials. (10 marks)
- 5.3.3 List the control rules to be used when following this programme. (40 marks)

6.

- 6.1 A 65 year old man who is on treatment for Hypertension and Diabetes mellitus of 15 years duration came to the diabetic centre for routine bi-annual testing.
- 6.1.1 List **three** (03) important investigations you will do in this patient other than the routine fasting and postprandial plasma glucose which were done monthly in the medical clinic. (15 marks)
- 6.1.2 Describe briefly the patient preparation, procedure for sample collection and storage for each of the investigations mentioned in 6.1.1. (45 marks)
- 6.2
- 6.2.1 List **three** (03) causes of hypoglycaemia in adults. (15 marks)
- 6.2.2 List **four** (04) symptoms of hypoglycaemia. (10 marks)
- 6.2.3 List **three** (03) investigations you can do in a hypoglycaemic patient. (15 marks)