THE OPEN UNIVERSITY OF SRI LANKA
FACULTY OF HEALTH SCIENCES
DEPARTMENT OF MEDICAL LABORATORY SCIENCES
ACADEMIC YEAR 2018/2019 – SEMESTER II

BACHELOR OF MEDICAL LABORATORY SCIENCES (BMLS) HONOURS
MDU4303 – CLINICAL BIOCHEMISTRY II – LEVEL4
FINAL EXAMINATION DURATION: THREE (03) HOURS

DATE: 7TH NOVEMBER 2019 TIME: 01.30PM – 04.30 PM

PART B – Structured Essay Questions (40 marks)

1. **Disorders of carbohydrate metabolism occur in many forms. The commonest is diabetes mellitus.**

1.1. Name the metabolic product which will be accumulated due to pyruvate metabolism disorders? (2 marks)

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1.2. State two (02) laboratory investigations which could be used to diagnose the deficiency in pyruvate dehydrogenase complex. (4 marks)

I. .....

II. .....

1.3. Briefly describe the reason for accumulation of the metabolite stated in 1.1. in disorders of pyruvate metabolism. (2 marks)

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1.4. Briefly describe the diagnosis of diabetes mellitus. (12 marks)

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(Total : 20 Marks)

2. **Routine lipid and lipoprotein determinations are carried out by most clinical laboratories. Reference methods also have been developed and these methods are important in the standardization of lipid and lipoprotein assays. Basic lipids measured in the clinical laboratories include cholesterol, triglycerides, HDL cholesterol and LDL cholesterol.**

2.1. List two (02) benefits of performing lipid profile test? (4 marks)

I. .....

II. .....

2.2. Briefly describe the specimen collection and storage for lipid profile (4 marks)

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2.3. Briefly describe the methods of measurement of serum high density lipoprotein (HDL). (6 Marks)

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2.4. Briefly describe the methods of measurement of serum low density lipoprotein (LDL). (6 Marks)

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(Total: 20 Marks)

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3. **Body fluids which are analysed in the clinical chemistry laboratory include blood, cerebro-spinal fluid (CSF), synovial fluid, amniotic fluid, pleural fluid, pericardial fluid, peritoneal fluid, saliva and sweat.**

3.1. State the preferred site for venipuncture. (2 marks)

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3.2. List three (3) site where skin puncture is usually done in order to collect capillary blood. (3 marks)

I. .....

II. .....

III. .....

3.3. List three (03) main sites of arterial puncture for arterial blood collection. (3 marks)

I. .....

II. .....

III. .....

3.4. List four (04) anticoagulants which are commonly used in blood specimen collection. (4 marks)

I. .....

II. .....

III. .....

IV. .....

3.5. List two (02) Controllable physiological factors which affect the composition of body fluids and briefly describe how each two factors will affect the body fluid composition (8 marks)

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(Total: 20 marks)

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4. Seminal fluid analysis is the most important diagnostic tool in the initial evaluation of male fertility.

4.1. List 6 (six) abnormalities which can appear in sperm cells. (3 marks)

I. .....

II. .....

III. .....

IV. .....

V. .....

VI. .....

4.2. List 3 (three) important instructions that you will give to a subject regarding collecting seminal fluid specimen. (3 marks)

I. .....

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II. .....

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III. .....

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4.3. List two (02) routine analysis which are performed in seminal fluid samples and briefly describe information which can be gathered from each analysis that you mentioned. (8 marks)

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4.4. List two (02) special tests which are performed in seminal fluid samples and briefly describe information which could be gathered from each analysis that you mentioned. (6 marks)

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(Total: 20 Marks)

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PART C – Essay Questions (30 marks)

1. Write an essay on "Hyperglycemia in diabetes mellitus" (30 marks)
2. Write an essay on "importance of stool analysis" (30 marks)

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