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



BACHELOR OF MEDICAL LABORATORY SCIENCES (BMLS) HONOURS
MDU3303 – CLINICAL BIOCHEMISTRY I – LEVEL 3
FINAL EXAMINATION DURATION: THREE (03) HOURS

DATE: 26TH FEBRUARY 2019

TIME: 09.30AM – 12.30 PM

INDEX NO:

PART B – Structured Essay Questions

1. Urine is produced by filtering blood through the glomerular filtration membrane of nephron and subsequent modifications which occurs in renal tubules. Hence urine shows how the kidneys are functioning and reflects the blood composition.

1.1. List three (03) types of urine samples which can be collect for biochemical investigations. (3 marks)

- 1)
- 2)
- 3)

1.2. List three (03) preservatives which are used for the urine samples. (3 marks)

- 1)
- 2)
- 3)

1.3. List two (02) changes of biochemical parameters can occur due to bacterial growth in a urine sample. (4 marks)

- 1)
- 2)

1.4. Briefly describe the importance of the assessment of physical properties of urine. (10 marks)

- 1)
- 2)

INDEX NO:

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(Total : 20 marks)

2. Point of care testing (POCT) refers to a test in the immediate vicinity of a patient to provide a rapid result outside the conventional laboratory. Reference data is used for the interpretation of results.

2.1. Give five (05) examples for point of care testing which are routinely done. (5 marks)

- 1)
- 2)
- 3)
- 4)
- 5)

2.2. List five (05) advantages of point of care testing (5 marks)

- 1)
- 2)
- 3)
- 4)
- 5)

2.3. What is a "reference interval" with reference to quantitative laboratory investigations. Describe briefly. (10 marks)

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INDEX NO:

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(Total: 20 marks)

3. Biological sample collection and preservation is the most vital aspect in laboratory medicine.

3.1. List three (03) biological samples which are used in clinical biochemistry. (3 marks)

- 1)
- 2)
- 3)

3.2. Mention the type of specimen collection container which requires for the three (03) samples which you listed in 3.1. (3 marks)

- 1)
- 2)
- 3)

3.3. List 4 advantages of Gel Inclusion Specimen Collection Tubes. (4 marks)

- 1)
- 2)
- 3)
- 4)

3.4. Briefly describe the activities which should be performed by the phlebotomist prior to the venous blood sample collection. (10 marks)

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INDEX NO:

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(Total: 20 Marks)

4. Photometry and Spectrophotometry have numerous applications in clinical biochemistry.

4.1. Briefly describe the working principle of the spectrophotometer. (5 marks)

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4.2. List five (05) basic components of a spectrophotometer. (5 marks)

- 1)
- 2)
- 3)
- 4)
- 5)

INDEX NO:

4.3. State the function/functions of the five (05) components that you have listed in
4.2. (10 marks)

- 1)
- 2)
- 3)
- 4)

(Total: 20 Marks)

INDEX NO:

PART C – Essay Questions

1. Write an essay on pre-analytical errors (30 marks)
2. Write an essay on major groups of plasma lipoproteins (30 marks)