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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
MDU5451/MLU3242 – CELL BIOLOGY AND BASIC BIOCHEMISTRY – LEVEL 5
FINAL EXAMINATION DURATION: THREE (03) HOURS

DATE: 26TH FEBRUARY 2019

TIME: 09.30AM – 12.30 PM

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)

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(Total: 20 marks)

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

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

- 1)
- 2)
- 3)

2.2. Mention the type of specimen collection container which requires for the three (03) samples which you listed in 2.1. (3 marks)

- 1)
- 2)
- 3)

2.3. List four (04) advantages of Gel Inclusion Specimen Collection Tubes. (4 marks)

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

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

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(Total: 20 Marks)

3. Bile acids are surface active detergent molecules which are produced in the liver.

3.1. Give two (02) examples for bile salts. (4 marks)

1)

2)

3.2. Briefly describe the enterohepatic circulation of bile salts. (6 marks)

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3.3. Briefly describe the role of bile acids in the digestion and absorption of fat.
(10 marks)

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(Total: 20 marks)

4. There are four major mechanisms of communication between cells. And these mechanisms are depending primarily on the distance between the signaling and responding cells. Signaling molecules are used for this process.

4.1. List the four (04) of above-mentioned mechanisms. (04 marks)

1)

2)

3)

4)

4.2. Mention three (03) major functions of signaling molecules. (06 marks)

1)

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2)

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3)

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4.3. Give four (04) examples of signaling molecules stating their site of synthesis and function. (10 marks)

Signalling molecule	Site of synthesis	Function
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(Total: 20 Marks)

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PART C – Essay Questions

1. Write an essay on “Stages of the Cell Cycle” (30 marks)
2. Write an essay on major groups of plasma lipoproteins (30 marks)