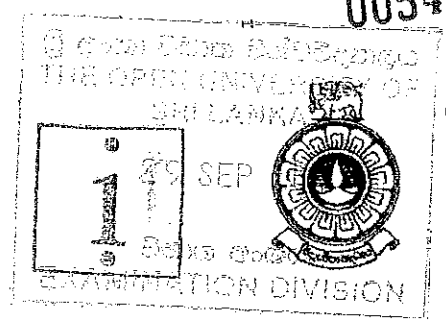


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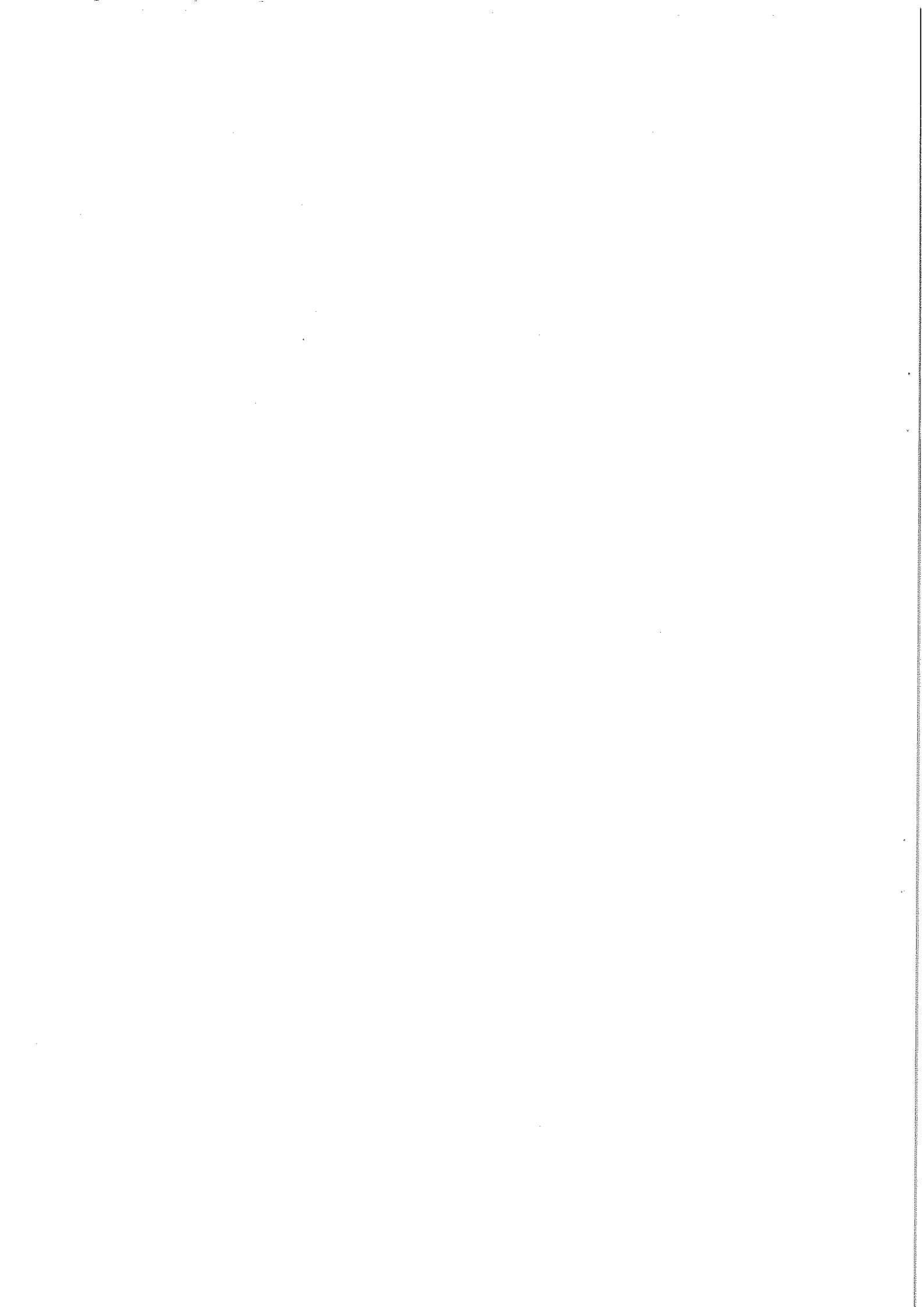
**THE OPEN UNIVERSITY OF SRI LANKA**  
**FACULTY OF HEALTH SCIENCES**  
**DEPARTMENT OF MEDICAL LABORATORY SCIENCES**  
**ACADEMIC YEAR 2019/2020 – SEMESTER I**



**BACHELOR OF MEDICAL LABORATORY SCIENCES (BMLS) HONOURS**  
**MLU3242/MDU5451 – CELL BIOLOGY AND BASIC BIOCHEMISTRY – LEVELS**  
**FINAL EXAMINATION** **DURATION: THREE (03) HOURS**

DATE: 29<sup>TH</sup> SEPTEMBER 2020

TIME: 01.30 PM – 04.30 PM



**PART B – Structured Essay Questions**

**1. Diabetes mellitus is a common metabolic disease characterized by increased blood glucose levels which lead to chronic complications such as retinopathy, neuropathy, nephropathy and cardiomyopathy.**

1.1. List three (03) laboratory tests which can be used to monitor the blood glucose control. (03 marks)

- A. ....
- B. ....
- C. ....

1.2. Briefly describe how blood glucose level is regulated after a meal in a healthy person. (07 marks)

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1.3. Briefly describe the development of following consequences mentioned below due to hyperglycemia in diabetes mellitus.

1.3.1. Polyuria

(05 marks)

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1.3.2. Polydipsia

(05 marks)

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**(Total: 20 marks)**

**2. Carbohydrates are aldehyde or ketone compounds with multiple hydroxyl groups.**

2.1. Give two (02) examples for pentose sugars. (02 marks)

- A. ....
- B. ....

2.2. Give two (02) examples for hexose sugars. (02 marks)

- A. ....
- B. ....

2.3. List three (03) functions of carbohydrates giving one example for each function that you listed. (06 marks)

- A. ....  
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- B. ....  
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- C. ....  
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2.4. Write a short note on "Disaccharides". (10 marks)

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(Total: 20 marks)

**3. Proteins play crucial roles in virtually all biological processes. Most proteins contain in varying proportions, the same 20 L- $\alpha$ -amino acids.**

3.1. Give three (03) examples for amino acids. (03 marks)

- A. ....
- B. ....
- C. ....

3.2. List five (05) types of bonds found in the protein structures. (05 marks)

- A. ....
- B. ....
- C. ....
- D. ....
- E. ....

3.3. Write a short note on "Classification of proteins based on function". (12 marks)

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(Total: 20 Marks)

**4. Creatine is a natural substance that is found in the muscles of humans and animals. It is composed of three amino acids called arginine, glycine and methionine.**

4.1. List two (02) methods which can be used to determine creatinine levels in serum/urine samples? (02 marks)

- A. ....
- B. ....

4.2. State the importance of measurement of serum/urine creatinine levels related to renal function. (04 marks)

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**PART C – Essay Questions**

1. Write an essay on “Properties of enzymes”. (30 marks)
2. Write an essay on “proteins of plasma membrane”. (30 marks)

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