THE OPEN UNIVERSITY OF SRI LANKA
FACULTY OF HEALTH SCIENCES
DEPARTMENT OF MEDICAL LABORATORY SCIENCES
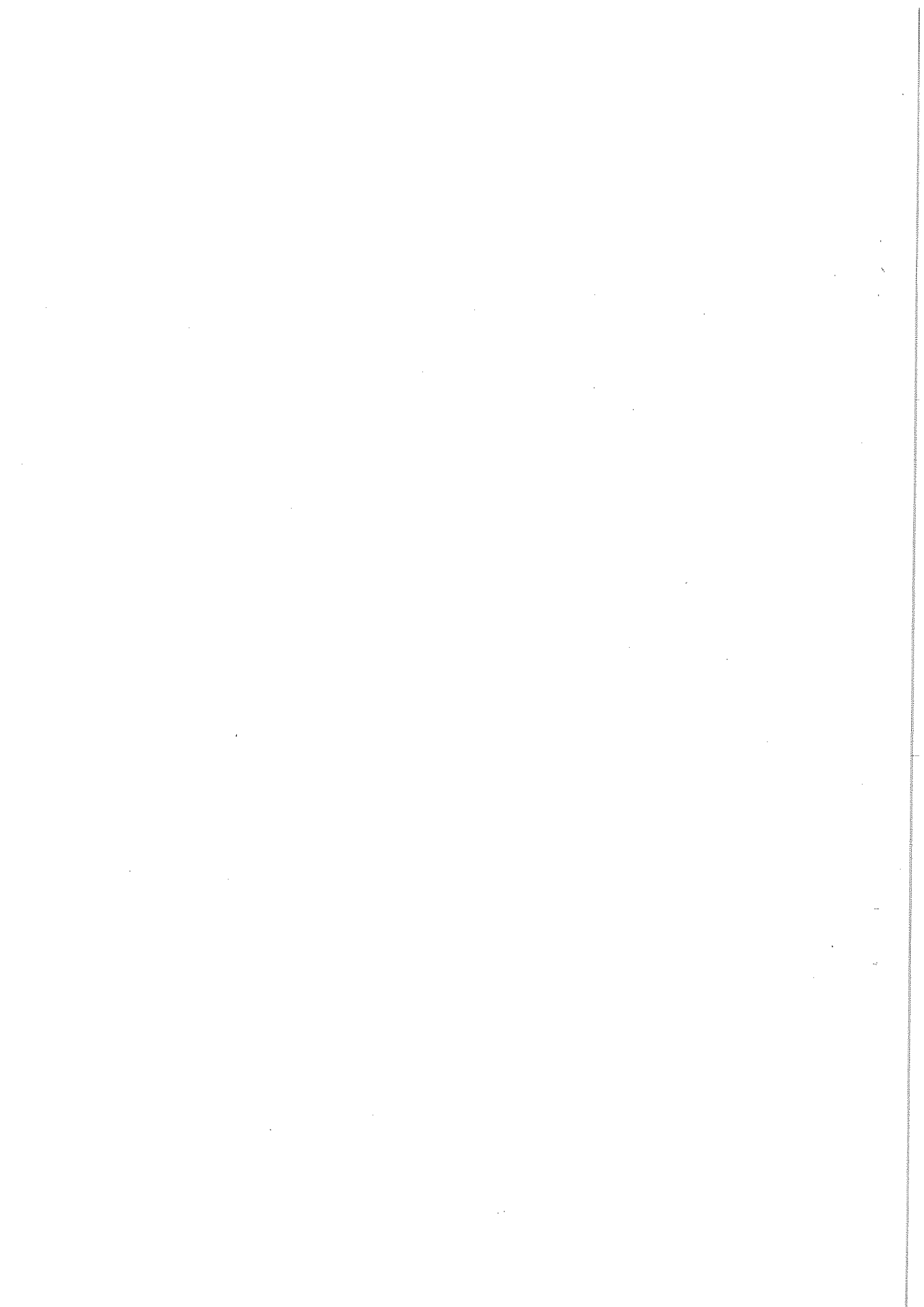ACADEMIC YEAR 2020/2021 – SEMESTER I

BACHELOR OF MEDICAL LABORATORY SCIENCES (BMLS) HONOURS
MDU6503 – CLINICAL BIOCHEMISTRY III – LEVEL6
FINAL EXAMINATION   DURATION: THREE (03) HOURS

DATE:03RD MARCH 2022   TIME: 09.30AM –12.30 PM

PART B – Structured Essay Questions (40 marks)

1. **The endocrine and nervous systems are the major regulators in flow of information between tissues and different types of cells.**

1.1. Briefly describe the association between hormones and receptors. (02 marks)

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1.2. State one (01) hormone secreted by each of the following cell types. (03 marks)

Cell type	Hormone secreted
Lactotrophs	E.g. Prolactin
Somatotrophs	....
Corticotrophs	....
Thyrotrophs	....

1.3. Briefly describe synthesis, secretion and regulation of cortisol hormone.

(05 marks)

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(Total: 10 Marks)

2. **Prenatal diagnosis is the identification of a disease or malformation of a fetus before born.**

2.1.   Compare prenatal screening tests and prenatal diagnostic tests.   (02 marks)

Prenatal screening tests	Prenatal diagnostic tests
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....	....

2.2.   List three (03) maternal and fetal risk factors that leads to prenatal diagnosis.

                                                  (03 marks)

Maternal risk factors	Fetal risk factors
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2.3. Briefly describe the application of "quadruple test" in prenatal screening tests.

(05 marks)

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(Total: 10 Marks)

3. **Iron is involved in oxygen transportation and oxygen contributes in numerous biochemical processes in humans.**

3.1. List four (04) forms of iron that are found in human body. (02 marks)

I. ....

II. ....

III. ....

IV. ....

3.2. State the significance of following in absorption of dietary iron in the small intestine.

.....(03 Marks)

I. Acidic pH of the stomach

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II. Bicarbonate in the pancreatic juice

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III. Ascorbic acid

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3.3. Briefly describe the importance of transferrin receptor determination. (05 marks)

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(Total: 10 Marks)

4. **Vitamins are non-caloric essential nutrients which are necessary for many metabolic processes in the body.**

4.1. Briefly explain why prolonged excessive intake of fat-soluble vitamins results in toxicity. (02 marks)

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4.2. State one (01) biological function of each of the following vitamins. (03 marks)

I. Vitamin A

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II. Vitamin D

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III. Vitamin C

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4.3. Briefly describe the causes of folate (vitamin B$_9$) deficiency. (05 marks)

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(Total: 10 Marks)

PART C – Essay Questions (30 Marks)

1. Write an essay on "Characteristic features of tumour markers and applications".

(15 marks)

2. Draw and label a time vs concentration curve of a prescribed drug and describe each phase of the curve.

(15 marks)