

00017

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



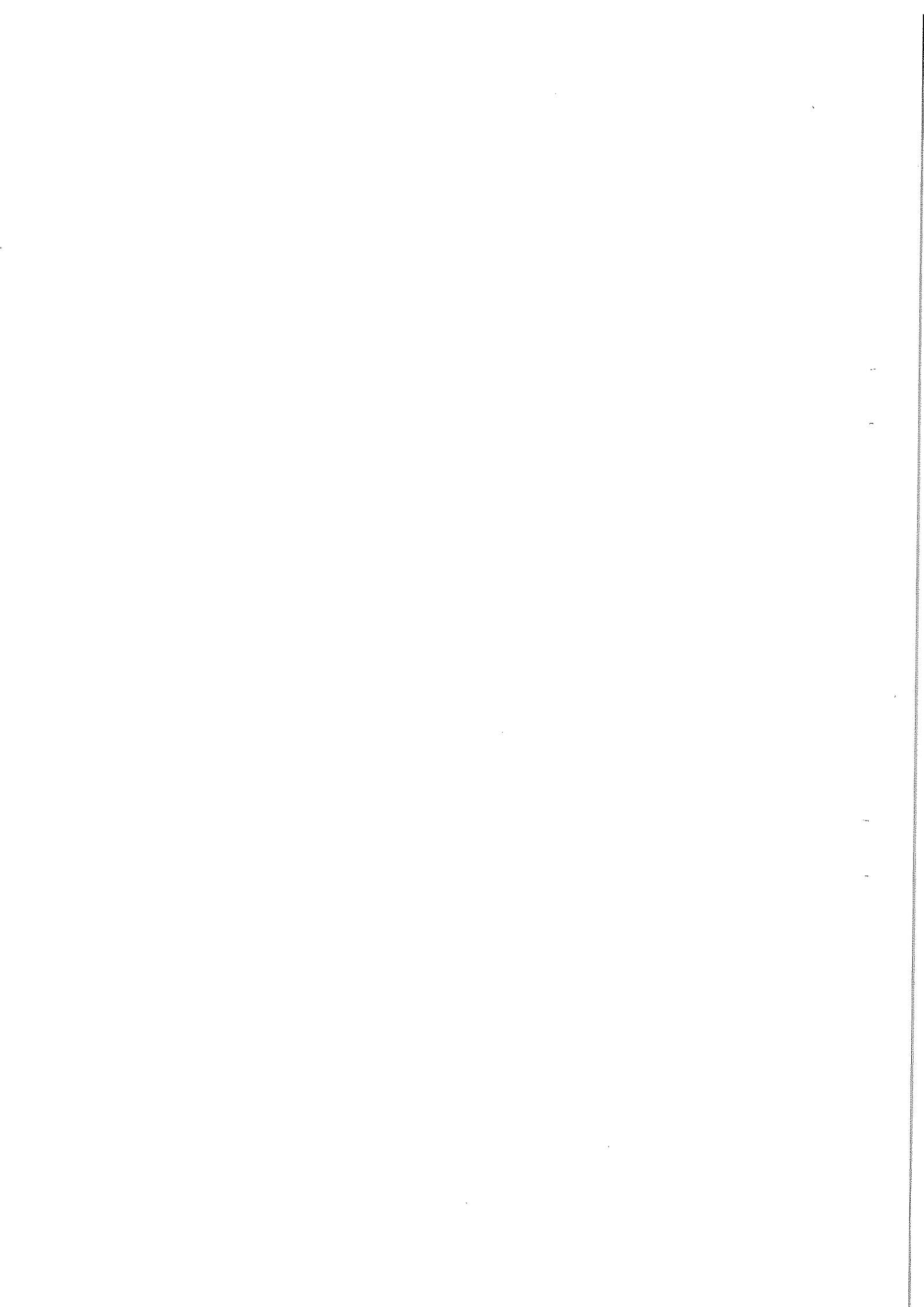
BACHELOR OF MEDICAL LABORATORY SCIENCES (BMLS) HONOURS  
MDU6550/MLU4241 – ADVANCED CLINICAL BIOCHEMISTRY – LEVEL 6  
FINAL EXAMINATION DURATION: THREE (03) HOURS

---

DATE: 27<sup>TH</sup> FEBRUARY 2019

TIME: 09.30AM – 12.30 PM

---



**PART B – Structured Essay Questions**

**1. Tumor markers are broadly, proteins, enzymes and hormones produced abnormally in large quantities by cells that had undergone malignant transformation. Tumor marker testing comes under clinical biochemistry.**

1.1. List four (04) applications of tumor markers. (04 Marks)

- a) .....
- b) .....
- c) .....
- d) .....

1.2. Give one example for each type of given tumor marker and state the associated cancer. (06 Marks)

Type of Tumor Marker	Example	Associated cancer
Oncofetal Antigens	.....	.....
Cancer Antigen (CA)	.....	.....
Hormones	.....	.....

1.3. Briefly describe the application of serum protein electrophoresis in detection of monoclonal immunoglobulins. (10 marks)

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

INDEX NO: .....  
 .....  
 .....  
 .....

(Total: 20 Marks)

**2. Clinical toxicology deals with analysis of drugs, other chemicals agents including heavy metals in body fluids and tissues for the purpose of diagnosis and treatment related to patient care.**

2.1. List five (05) factors which determine the severity of exposure of a toxic agent. (05 Marks)

- a) .....
- b) .....
- c) .....
- d) .....
- e) .....

2.2. List three (03) organs/systems in human which are involved in internal detoxification. (03 Marks)

- a) .....
- b) .....
- c) .....

2.3. Briefly describe how above-mentioned 2.2 organs/systems are involved in detoxification of toxins. (12 Marks)

.....  
 .....  
 .....  
 .....  
 .....  
 .....  
 .....  
 .....  
 .....  
 .....  
 .....

.....  
 .....  
 .....

(Total: 20 Marks)

**3. Thyroid Hormones are involved in the functions and regulation of every organ/system of the body. Therefore, hyper or hypo secretion of the hormones will cause symptoms in every major system in the body.**

3.1. List three (03) hormones secreted by the thyroid gland (03 Marks)

- a) .....
- b) .....
- c) .....

3.2. List three (03) functions of the thyroid hormone (03 Marks)

- a) .....
- b) .....
- c) .....

3.3. Briefly describe the regulation of thyroid hormone secretion. (10 Marks)

.....  
 .....  
 .....  
 .....  
 .....  
 .....  
 .....  
 .....  
 .....  
 .....  
 .....  
 .....  
 .....  
 .....  
 .....  
 .....

INDEX NO: .....

.....  
.....  
.....  
.....  
.....

3.4. List two (02) disorders associated with of Thyroid gland/hormones (02 Marks)

- a) .....
- b) .....

3.5. List two (02) laboratory investigations which can be performed to diagnose thyroid disorders. (02 Marks)

- a) .....
- b) .....

(Total: 20 Marks)

**4. Free radicals are atoms, molecules or ions with one or more unpaired electrons (odd number) and may have positive, negative, or zero charge. Free radicals, if not immediately quenched in the body, are believed to be involved in causing degenerative diseases, senescence (the aging process), and cancers.**

4.1. List two functions of free radicals in biological processes. (02 Marks)

- a) .....
- b) .....

4.2. Give two (02) examples for Reactive Oxygen Species (ROS) (02 Marks)

- a) .....
- b) .....



INDEX NO: .....

**PART C – Essay Questions**

1. Write an essay on “therapeutic drug monitoring”. (30 marks)
2. Write an essay on classification of hormones based on chemical nature. (30 marks)