



**UNIVERSITY OF RUHUNA – FACULTY OF ALLIED HEALTH SCIENCES**

**DEPARTMENT OF PHARMACY**

**FOURTH BPHARM PART I EXAMINATION – OCTOBER/NOVEMBER 2019**

**PH 4141 CELL BIOLOGY & IMMUNOLOGY (SEQ)**

**TIME: TWO HOURS**

**INSTRUCTIONS**

- Answer **all** questions in the booklet provided.
- No paper should be removed from the examination hall.
- Do not use any correction fluid.
- Use illustrations where necessary.

**01.**

- 1.1 Briefly describe the first line defense immune system. **(30 marks)**
- 1.2 Describe the characteristics of immunoglobulins, different types and their functions. **(50 marks)**
- 1.3 Write a short note on the mechanism of cellular immunity. **(20 marks)**

**02.**

2.1

- 2.1.1 Define the term “hypersensitivity”. **(05 marks)**
- 2.1.2 List the types of hypersensitivity. **(05 marks)**

2.2 While illustrating your answer with examples, mechanism and diagnosis, explain the type I sensitivity. **(40 marks)**

2.3 Describe the components involved in human immune system and their mechanism of immune system against pathogens. **(30 marks)**

2.4 Write a short note on mechanism of tumor immunity. **(20 marks)**

03.

3.1 Write a short note on clinical applications of stem cells.

(20 marks)

3.2

3.2.1 State the organization of mammalian cell.

(10 marks)

3.2.2 Briefly describe, the functions of the components of the organized mammalian cell.

(20 marks)

3.2.3 Write **two** differences between a mammalian cell and a bacterial cell.

(10 marks)

3.3 Describe cell signaling and the different types of cell signaling in a biological system.

(40 marks)

04.

4.1 Briefly describe the apoptosis process and importance to a biological system.

(25 marks)

4.2

4.2.1 Define the term "cellular homeostasis".

(05 marks)

4.2.2 State the importance of cellular homeostasis for cells.

(05 marks)

4.2.3 Using examples and diagrams where required, discuss briefly the function of cell membrane in homeostasis.

(15 marks)

4.3 Write short notes on following.

4.3.1 Cell cycle

(15 marks)

4.3.2 Structure of chromosome and gene

(15 marks)

4.4 Briefly describe the properties of cancer cells.

(20 marks)

@@@@@@@@@@