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UNIVERSITY OF RUHUNA – FACULTY OF ALLIED HEALTH SCIENCES

DEPARTMENT OF PHARMACY

FOURTH BPHARM PART I EXAMINATION – APRIL 2023

PH 4141 CELL BIOLOGY & IMMUNOLOGY – SEQ PAPER

TIME: TWO HOURS

INSTRUCTIONS

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

1.

- 1.1. Write three characteristics of stem cells. *(15 marks)*
- 1.2. List four different types of stem cells based on their differentiation potential. *(20 marks)*
- 1.3. Briefly describe embryonic stem cells. *(30 marks)*
- 1.4. Describe the cell signaling process in terms of its three stages. *(35 marks)*

2.

- 2.1. What are the two main fragments of an antibody? *(10 marks)*
- 2.2. What are the functions of two main fragments? *(20 marks)*
- 2.3. Write a brief account on monoclonal antibodies. *(30 marks)*
- 2.4. Briefly describe “cross reactivity” in relation to antibody. *(40 marks)*

3.

- 3.1. Write two primary lymphoid organs and two secondary lymphoid organs. *(10 marks)*
- 3.2. What are natural killer (NK) cells in the immune system? Briefly describe. *(20 marks)*
- 3.3. Write four types of cells in the immune system which are capable of phagocytosis and what are the four main steps in phagocytosis? *(30 marks)*
- 3.4. Explain the two main mechanisms of adaptive immune response. *(40 marks)*

4.

- 4.1. What are the two types of reactions that are known as immediate type hypersensitivity and delayed type hypersensitivity? (20 marks)
- 4.2. What is the typical time duration between the exposure to an antigen and the onset of a reaction in the above two hypersensitivity types? (20 marks)
- 4.3. Briefly describe the mechanism of immediate type hypersensitivity. (30 marks)
- 4.4. Write a short account on immune complex mediated hypersensitivity. (30 marks)

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