



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

**DEPARTMENT OF PHARMACY**

**FIRST BPHARM PART I EXAMINATION – NOVEMBER 2020**

**PH 1144 HUMAN BIOLOGY I – SEQ**

**TIME: THREE HOURS**

**INSTRUCTIONS**

- There are **six** questions in **A, B, C, D, E, F and G** parts.
- Answer each part in a separate booklet.
- No paper should be removed from the examination hall.
- Do not use any correction fluid.
- Use illustrations where necessary.

**PART A**

1.

1.1. Outline the following.

1.1.1. Passive Transport

(15 marks)

1.1.2. Active transport

(15 marks)

1.2. Write short notes on the following with examples.

1.2.1. Receptor tyrosine kinases

(15 marks)

1.2.2. G-Protein coupled receptors

(15 marks)

1.2.3. Reversible antagonist

(15 marks)

**PART B**

1.3.

1.3.1. State three functions of the stomach.

(15 marks)

1.3.2. Name two types of secretory cells in the stomach.

(10 marks)

2.

2.1.

2.1.1. State three phases of regulation of gastric secretion.

(15 marks)

2.1.2. Describe the stimuli and inhibitors to hydrogen ion secretion by the parietal cell.

(20 marks)

2.1.3. Describe the methods available to reduce acid secretion in the treatment of peptic ulcers.

(15 marks)

## PART C

2.2.

- 2.2.1. Define anaemia. *(10 marks)*
- 2.2.2. Describe the variation of haemoglobin concentration according to the definition. *(10 marks)*
- 2.2.3. State three clinical conditions that can lead to iron deficiency anaemia. *(09 marks)*
- 2.2.4. State three clinical features of iron deficiency anaemia. *(09 marks)*
- 2.2.5. State the three major mechanisms involved in the arrest of bleeding. *(12 marks)*

## PART D

3.

- 3.1. List the modes of CO<sub>2</sub> transfer in the blood? *(15 marks)*
- 3.2. What is intrapleural pressure? *(10 marks)*
- 3.3. Describe how the intrapleural pressure and alveolar pressure change during inspiration and expiration. *(40 marks)*
- 3.4. Describe the role of chemoreceptors in the regulation of respiration. *(35 marks)*

## PART E

4.

- 4.1. Explain the effect of the following on cardiac output.
- 4.1.1 End diastolic volume *(10 marks)*
- 4.1.2 Heart rate *(10 marks)*
- 4.1.3 Gravity *(10 marks)*
- 4.2. Describe how the baroreceptor mechanism help in the regulation of blood pressure. *(20 marks)*
- 4.3. Using a diagram, explain the effect of changes in the threshold for firing on cardiac arrhythmogenesis. *(20 marks)*
- 4.4. Write four different types of shock. *(10 marks)*
- 4.5. Explain how the renal artery stenosis causes hypertension. *(10 marks)*
- 4.6. Write four complications of hypertension. *(10 marks)*

**PART F**

**5.**

- 5.1. State the important events that occur during the first three weeks of intrauterine development. **(25 marks)**
- 5.2. Briefly describe the components of the pulmonary circulation. **(25 marks)**
- 5.3. Name the organs/structures of the respiratory system. **(25 marks)**
- 5.4. Briefly describe the structures involved in gas exchange barrier. **(25 marks)**

**PART G**

**6.**

6.1.

- 6.1.1. Describe four main tissue types found in the human body. **(20 marks)**
- 6.1.2. Give examples of the sites where each tissue type is found in. **(25 marks)**

6.2.

- 6.2.1. Describe the basic arrangement of the human gastrointestinal tract. **(25 marks)**
- 6.2.2. Illustrate the structure and arrangement of associated glands of the gastrointestinal tract. **(30 marks)**

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