

12

Index no:.....



UNIVERSITY OF RUHUNA – FACULTY OF MEDICINE
ALLIED HEALTH SCIENCES DEGREE PROGRAMME
FIRST BPHARM PART II EXAMINATION - JANUARY 2018
PH 1254 HUMAN BIOLOGY II (SEQ)

TIME: THREE HOURS

INSTRUCTIONS

- There are **six (06)** questions in the Parts A, B, C, D and E of the SEQ paper.
- 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. State the major hormone secreted by the adrenal medulla in humans. (05 marks)
 - 1.2. State **five** actions of the above hormone. (20 marks)
 - 1.3. State **three** main types of hormones secreted by the adrenal cortex. (15 marks)
 - 1.4. State **three** causes for Cushing syndrome. (15 marks)
 - 1.5. State **five** features of Cushing syndrome. (15 marks)
 - 1.6. Describe the changes that you would see in muscle and bones in Cushing syndrome. (30 marks)
- 2.1. State the average water content of an average build (70kg) adult. (10 marks)
 - 2.2. Briefly describe the distribution of above mentioned amount of water. (20 marks)
 - 2.3. Briefly describe the ion distribution in different body fluid compartments of the body. (20 marks)

PART B

- 2.4. Describe briefly the mechanism of generation of an action potential in a neuron describing the function of different ion channels. (25 marks)
 - 2.5. What is the difference between an excitatory postsynaptic potential and an inhibitory postsynaptic potential? (25 marks)
- 3.1. What is the 'renal clearance' of a substance? (20 marks)
 - 3.2. Name **five** substances which are reabsorbed in the proximal tubules of the kidney. (20 marks)
 - 3.3. Describe **two** important factors which influence the movement of water out from the collecting duct. (20 marks)
 - 3.4. Name **two** hormones produced/formed by the kidney and describe briefly their functions. (20 marks)
 - 3.5. Name **two** H⁺ buffering mechanism of renal tubules. (20 marks)

PART C

- 4.
- 4.1. Explain the following terms in relation to skeletal muscles.
- 4.1.1. Absolute refractory period (10 marks)
- 4.1.2. Tetany (10 marks)
- 4.2. Explain the difference between isotonic and isometric muscular contraction. (15 marks)
- 4.3. Explain how competitive neuromuscular blockers (i.e. Curare group of drugs) cause muscle paralysis. (15 marks)

PART D

- 4.4. A 46 year-old lady presented with amenorrhea for some uncertain duration. Following investigations doctor found that her FSH was high and estrogen level was very low. She was diagnosed as menopausal.
- 4.4.1. What is menopause? (10 marks)
- 4.4.2. Physiologically explain the presence of low estrogen and high FSH levels in her. (30 marks)
- 4.4.3. List **five** post-menopausal symptoms. (10 marks)

PART E

- 5.
- 5.1. List the organs of the urinary system. (10 marks)
- 5.2. Describe the functions of the different organs in female reproductive system using a labeled diagram. (30 marks)
- 5.3. Describe the functions of the different organs in male reproductive system using a labeled diagram. (30 marks)
- 5.4. Describe the components of the reticular-endothelial system. (30 marks)

PART F

- 6.
- 6.1. What are the main divisions of the nervous system? (30 marks)
- 6.2. Name the cranial nerves responsible for sense of,
- 6.2.1. Vision (05 marks)
- 6.2.2. Hearing (05 marks)
- 6.2.3. Taste (05 marks)
- 6.3. Name **three** organs which have endocrine function and some other non-endocrine function. (15 marks)
- 6.4. State briefly the blood supply of the thyroid gland. (20 marks)
- 6.5. Name the superficial veins of the upper limb and the lower limb. (20 marks)

@@@@@@@@