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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
(TAKE HOME)
SEMESTER II
SESSION 2019/2020**

COURSE NAME : HUMAN PHYSIOLOGY
COURSE CODE : BEU 20103
PROGRAMME CODE : BEJ
EXAMINATION DATE : JULY 2020
DURATION : 3 HOURS
INSTRUCTION : ANSWER ALL QUESTIONS.
OPEN BOOK EXAMINATION

THIS QUESTION PAPER CONSISTS OF **FOUR (4)** PAGES

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TERBUKA

Q1 All sensory pathways begin with a stimulus sensed by sensory receptors, in the form of physical energy that acts on a group of muscle. Vision, taste, smell and hearing are the special senses that could stimulate organs movement.

- (a) Explain the role of the afferent division of the nervous system. (1 mark)
- (b) Give **THREE (3)** common problems of vision. (3 marks)
- (c) Summarize the neural pathway for olfaction. (3 marks)
- (d) Indicate the part of the brain that is related to the following function.
 - (i) Regulates body temperature : _____.
 - (ii) Regulates heart rate : _____.
 - (iii) Suppresses unimportant sensations : _____.
 - (iv) Regulates food intake : _____.
 - (v) Regulates coordination of voluntary movement : _____.
 - (vi) Regulates secretions of the anterior pituitary gland : _____.
 - (vii) Regulates coughing and sneezing : _____.
 - (viii) Regulates muscle tone : _____.
 - (ix) Regulates visual and auditory reflexes : _____.
 - (x) Regulates blood pressure : _____.(5 marks)

Q2 Human skin is the outer covering of the body and is the largest organ of the integumentary system. It has a total area of about 20 square feet.

- (a) Illustrate the three layers of skin with their important features. Label clearly. (9 marks)
- (b) Categorize the characteristics in **Part Q2(b)(i)** until **Part Q2(b)(vi)** to the correct skin layer.
 - (i) Contains rapidly dividing cells : _____.
 - (ii) Mostly connective tissue : _____.
 - (iii) Contains melanocytes : _____.



- (iv) Contains keratinocytes : _____.
- (v) Contains sensory nerve endings : _____.
- (vi) No direct blood supply : _____.

(3 marks)

- (c) Explain how sweating helps maintain body temperature

(2 marks)

- Q3** (a) Diarrhea can be unpleasant, but it does have a purpose. Explain **ONE (1)** advantage and disadvantage of diarrhea.

(2 marks)

- (b) The primary function of cardiovascular system is to transport materials to and from all parts of the body. Determine **THREE (3)** essential characteristics which truly useful and is a must when an artificial heart is being developed and tested.

(6 marks)

- (c) Patient with low immune system may be susceptible to diseases like pneumonia, rheumatoid arthritis, yeast infection of the mouth, or protozoan infection of the intestines.

- (i) Acquired immunodeficiency syndrome (AIDS) is a chronic and potentially life-threatening condition which weakens the ability to fight infection. Determine the least likely disease that may be contracted by patient with AIDS based on statement in **Part Q3(c)**.

(1 mark)

- (ii) Explain your reason based on the answer given in **Part Q3(c)(i)**.

(3 marks)

- (d) Find the relationships between plasma, tissue fluid, and lymph in terms of movement of water throughout the body.

(6 marks)

- Q4** (a) Point out the functions of the cerebellum and the frontal lobes of the cerebrum with respect to muscle contraction.

(4 marks)

- (b) Identify **THREE (3)** of the body's physiological responses to exercise and explain how each helps maintain homeostasis.
(6 marks)
- (c) Compare and tabulate the characteristics of smooth muscle and cardiac muscle based on shape or size, function and location.
(6 marks)
- (d) State **FOUR (4)** systems of the body and their major functions.
(4 marks)
- (e) Analyze **THREE (3)** effects on human body if homeostasis fails to maintain.
(6 marks)

-END OF QUESTIONS-