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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER I
SESSION 2016/2017**

COURSE NAME : HUMAN PHYSIOLOGY
COURSE CODE : BEU 20103
PROGRAMME : BEJ
EXAMINATION DATE : DECEMBER 2016/JANUARY 2017
DURATION : 2 1/2 HOURS
INSTRUCTION : ANSWER ALL QUESTIONS
PLEASE WRITE ALL THE ANSWERS ON
THIS QUESTIONS BOOKLET

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THIS QUESTION PAPER CONSISTS OF TEN (10) PAGES

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Q1 Body is structurally organized into a total function unit and form the biochemical level to the whole body that support life. Within the physiological system, there are the cellular, system, and organism physiology. All of the areas are related and connected to each other to maintain a stable community.

(a) Name the **FIVE (5)** organization levels in the body.

(5 marks)

(b) Describe the structures of organization levels as mentioned in **Q1(a)**.

(5 marks)

(c) Explain each function of organization level as mentioned in **Q1(a)**.

(5 marks)

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(d) Skin consists of three layers: epidermis, dermis, and hypodermis.

(i) Explain the **THREE (3)** functions of skin.

(3 marks)

(ii) Predict **ONE (1)** effect when skin soaks in water for a long time.

(2 marks)

Q2 Central nervous system (CNS) and peripheral nervous system (PNS) are the two systems that involved to manage and control human movement. In both systems, receptors response subjected to adequate stimulus so that any action or movement could be done.

(a) Name **TWO (2)** types of receptor that are responsible in nervous system.

(2 marks)

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- (b) Discover the alteration of the two receptors mentioned in **Q2(a)**, in conducting the action potential to Central Nervous System (CNS).

(10 marks)

- (c) Illustrate the two receptors mentioned in **Q2(a)** during the stimulus triggered until the action potential is conducted to CNS.

(8 marks)

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- Q3** (a) Electromyograph is a technique for evaluating and recording the electrical activity produced by skeletal muscles during major and minor movement. Explain and discuss the reflection of muscle and other organs, when electrical shock is applied to one body.

(10 marks)

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(b) Osteoporosis is a disease that causes thinning of bone tissue and reduces bone density. Commonly, the disease attacks elderly people by decreasing the bone strength thus, increasing the risk of a broken bone.

(i) Discuss the causes of osteoporosis.

(4 marks)

(ii) Describe the symptoms of osteoporosis.

(3 marks)

(iii) Consider the possible treatment of osteoporosis.

(3 marks)

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Q4 (a) An electrocardiogram (ECG) is a recording of the electrical current flowing through the heart. In a normal ECG wave, there are three distinct waves; P wave, QRS complex, and T wave. Between the waves, two segments are located; PR segment and ST segment.

(i) With the aid of ECG waveform, define the P wave, PR segment, QRS complex, ST segment, and T wave.

(5 marks)

(ii) For each wave and segment defined in **Q4(a)(i)**, explain the correlation to the heart activity.

(5 marks)

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- (b) Cardiovascular system and lymphatic systems have very close relation in maintaining homeostasis in human body. Differentiate the cardiovascular system and lymphatic system in terms of the location, function, structure, medium transfer, and movement factors.

(10 marks)

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Q5 (a) Respiratory system is a biological system that consists of two sections; upper airways and respiratory tract. An upper airway is a section that allows air to get in and out of the lungs, while respiratory tract is a system of passageways which contain network of tubes.

(i) Describe the gas exchange in respiratory system.

(4 marks)

(ii) Discuss the conducting zone of respiratory tract.

(4 marks)

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(b) Exchange of oxygen (O_2) and carbon dioxide (CO_2) occur in two levels; in lungs and tissues. Compare the process of O_2 and CO_2 exchange;

(i) between alveoli and the blood.

(6 marks)

(ii) between blood and the systemic tissues.

(6 marks)

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-END OF QUESTIONS-

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