



UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION  
SEMESTER II  
SESSION 2023/2024**

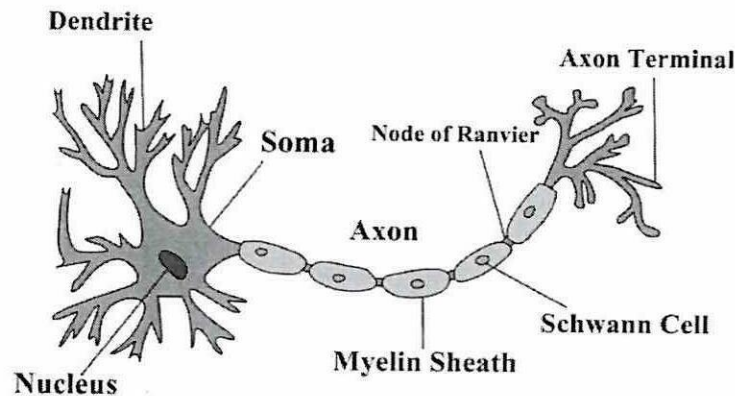
- COURSE NAME : HUMAN PHYSIOLOGY
- COURSE CODE : BEJ35103
- PROGRAMME CODE : BEJ
- EXAMINATION DATE : JULY 2024
- DURATION : 3 HOURS
- INSTRUCTIONS :
1. ANSWER ALL QUESTIONS
  2. THIS FINAL EXAMINATION IS CONDUCTED VIA
    - Open book
    - Closed book
  3. STUDENTS ARE **PROHIBITED** TO CONSULT THEIR OWN MATERIAL OR ANY EXTERNAL RESOURCES DURING THE EXAMINATION CONDUCTED VIA CLOSED BOOK

THIS QUESTION PAPER CONSISTS OF FIVE (5) PAGES

**TERBUKA**

CONFIDENTIAL

**Q1** Central nervous system (CNS) and peripheral nervous system (PNS) are two systems that control human movement and activity. Given the structure of a neuron that composed of terminal, nucleus, axon, and dendrites, in **Figure Q1.1**.



**Figure Q1.1** Neuron structure

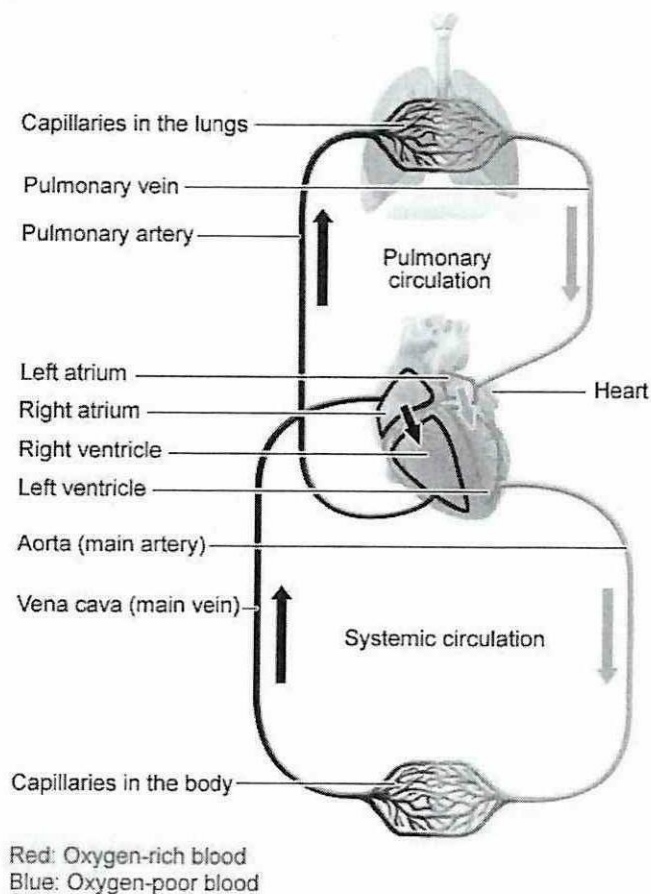
- (a) Analyse the pathway of transmitting and receiving information in neurons. (6 marks)
- (b) Discuss **TWO (2)** possible damages in nervous system when someone does not reflect to the stimuli that induces to the body (4 marks)
- (c) Describe in detail **FOUR (4)** major types of somatic receptors in PNS based on the type of stimulus to which they are most sensitive. (8 marks)

**Q2** The skeletal system is made up of bones and creates support structure for tissue and organs. The axial skeleton includes the bones that form the skull, laryngeal skeleton, vertebral column, and thoracic cage. Meanwhile, the appendicular skeleton comprises the bones appended to the central axis.

- (a) Highlight **FOUR (4)** functions of the skeletal system. (4 marks)
- (b) Identify the importance of having two regions of skull bone that are cranium and facial bones. (4 marks)
- (c) Bones are classified according to their shape. List down **FOUR (4)** types of bones and characterise each type. (8 marks)

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**Q3** Figure Q3.1 illustrates the relationship of respiratory and circulatory systems where lungs and heart are the main organ of the systems. The circulatory system consists of pulmonary and systemic circuits that work together for blood circulation in body.



**Figure Q3.1** Circulatory system consists of pulmonary and systemic circuits

- Explain the mechanism between respiratory and circulatory system to circulate the blood and oxygen throughout the body. (8 marks)
- Distinguish the differences between external and internal respiration processes. (6 marks)
- Explain **THREE (3)** main structures of the cardiovascular system that contribute to the blood circulation in human body. (6 marks)
- Pneumonia is one of the respiratory tract infections that causes the air sacs of the lungs to fill up with fluid. Predict the long-term effect of pneumonia on human body when it is not treated and recovered well. (6 marks)

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**Q4** Lymphatic system is a part of the circulatory system and a vital part of the immune system. It is a network of tubes throughout the body that drains fluid from tissues and empties it back into the bloodstream.

(a) Identify and explain the differences between lymphatic and circulatory systems.

- (i) Main function
- (ii) Transportation of fluid
- (iii) Carrying component
- (iv) Blood vessel type

(8 marks)

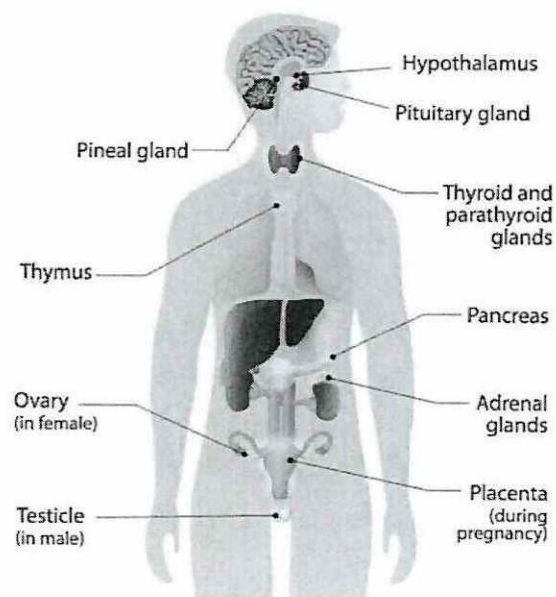
(b) Explain in your own words the reason of having one-way system in lymphatic system, and two-way system in blood vascular system.

(6 marks)

(c) Suggest **THREE (3)** strategies to prevent lymph disease such as lymphedema that is swelling of a body part caused by lymphatic fluid build-up in the tissues.

(6 marks)

**Q5** As shown in **Figure Q5.1**, hypothalamus, pituitary gland, thyroid gland, adrenal gland, pancreas, and gonads are endocrine glands that located in human body of endocrine system.



**Figure Q5.1** Glands located in endocrine system

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- (a) Based on **Figure Q5.1**, explain the function of those **SIX (6)** glands. (12 marks)
- (b) If hormone levels are too high or too low, discuss the problems that could occur in endocrine system. (4 marks)
- (c) Suggest **TWO (2)** ways to prevent endocrine problems. (4 marks)

**- END OF QUESTIONS -**

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