
UNIVERSITI SAINS MALAYSIA

KSCP Semester Examination
Academic Session 2007/2008

June 2008

ZCT 531/4 – Human Anatomy and Physiology
[Anatomi & Fisiologi Manusia]

Duration: 3 hours
[Masa : 3 jam]

Please ensure that this examination paper contains **FIVE** printed pages before you begin the examination.

*[Sila pastikan bahawa kertas peperiksaan ini mengandungi **LIMA** muka surat yang bercetak sebelum anda memulakan peperiksaan ini.]*

Instruction: Answer all **FIVE** questions. Students are allowed to answer all questions in Bahasa Malaysia or in English.

*[**Arahan:** Jawab semua **LIMA** soalan. Pelajar dibenarkan menjawab semua soalan sama ada dalam Bahasa Malaysia atau Bahasa Inggeris.]*

SECTION A

1. (a) Name the 4 most common elements found in the human body.
Berikan nama 4 unsur yang biasa sekali ditemui pada tubuh manusia.
(5/100)
- (b) Sketch a schematic diagram of a cell membrane and explain how its structure contributes to the various ways materials are transferred across it.
Lakarkan gambarajah berskema bagi membrane sel dan jelaskan bagaimana strukturnya menyumbang kepada cara-cara untuk bahan melintasinya.
(65/100)
- (c) Write short notes on red blood cells (erythrocytes).
Tuliskan nota ringkas tentang sel darah merah (eritrosit).
(30/100)
2. (a) Explain how an action potential is generated.
Jelaskan bagaimana sesuatu aksi potensial dijanakan.
(40/100)
- (b) Explain the processes involved in bringing oxygen from the atmosphere into the alveoli.
Jelaskan proses yang terlibat di dalam membawa oksigen dari atmosfera ke dalam alveolus.
(30/100)
- (c) Write short notes on white blood cells (leukocytes).
Tuliskan nota ringkas tentang sel darah putih (leukosit).
(30/100)
3. (a) Sketch the structure of a long bone and label its various parts.
Lakarkan struktur bagi suatu tulang panjang dan labelkan bahagian-bahagiannya.
(15/100)

- (b) Explain what happens at the ultrastructural level when a skeletal muscle contracts with shortening.
Jelaskan apa yang berlaku pada peringkat ultrastruktur apabila sesuatu otot rangka mengecut semasa berkontraksi.

(55/100)

- (c) Sketch the structure of skin and explain its function.
Lakarkan struktur kulit dan jelaskan fungsinya.

(30/100)

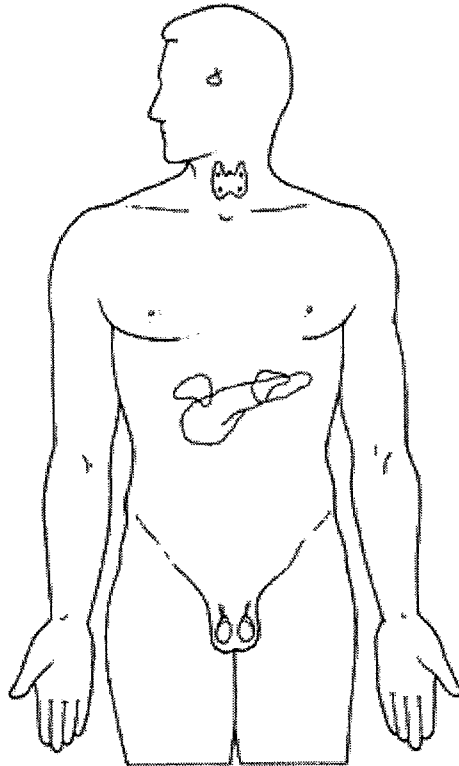
SECTION B

Question 1

Soalan 1

- (a) Describe the anatomy and physiology of the urinary system.
Huraikan anatomi dan fisiologi sistem urinari (40)
- (b) Write short notes on
Tuliskan nota ringkas tentang:
- (i) Thyroid gland
kelenjar tiroid
- (ii) homeostasis of calcium
homeostasis kalsium (40)
- (c) Name the endocrine organs that are illustrated in the following diagram and list the hormones produced by each organ named
Namakan kelenjar endokrin yang ada dalam rajah berikut dan senaraikan hormon yang dihasilkan oleh setiap kelenjar yang telah dinamakan (20)

Diagram for question 1 C:-
Gambarajah untuk soalan 1 C



Question 2

Soalan 2

- (a) Describe anatomy and physiology of the liver
Huraikan anatomi dan fisiologi organ hepar (hati) (50)
- (b) Write short notes on
Tuliskan nota ringkas tentang
- (i) spermatogenesis
spermatogenesis
 - (ii) nephron
nefron (40)

- (c) Define the following:
Terangkan maksud perkataan-perkataan berikut:
- (i) negative feedback in human physiology
suap balik negatif dalam fisiologi manusia
 - (ii) hormone
hormon
- (10)

Question 3
Soalan 3

- (a) Describe the anatomy and physiology of the female reproductive system
Huraikan anatomi dan fisiologi sistem pembiakan wanita (50)
- (b) Write short notes on
Tuliskan nota ringkas tentang:
- (i) adrenal gland
kelenjar adrenal
 - (ii) micturition
pengencingan
- (40)
- (c) List the functions of the stomach
Senaraikan fungsi organ gaster/perut (10)