SULIT

BAHAGIAN PEPERIKSAAN DAN PENILAIAN
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI
KEMENTERIAN PENGAJIAN TINGGI

JABATAN KEJURUTERAAN ELEKTRIK

PEPERIKSAAN AKHIR

SESI I : 2022 / 2023

BEU30073: ANATOMY AND PHYSIOLOGY

TARIKH : 9 JANUARI 2023
MASA : 8.30 AM – 11.30 AM (3 JAM)

Kertas ini mengandungi **SEMBILAN (9)** halaman bercetak.
Bahagian A: Struktur (4 soalan)
Bahagian B: Esei (1 soalan)
Dokumen sokongan yang disertakan : Tiada

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIARAHKAN

(CLO yang tertera hanya sebagai rujukan)

SECTION A: 80 MARKS
BAHAGIAN A: 80 MARKAH

INSTRUCTION:
This section consists of **FOUR (4)** structure questions. Answer **ALL** questions.

ARAHAN:
*Bahagian ini mengandungi **EMPAT (4)** soalan struktur. Jawab **SEMUA** soalan.*

QUESTION 1
SOALAN 1

CLO1
C1

(a) Organelles are cellular components in the cytoplasm. There are nucleus, mitochondria, chloroplasts, vacuoles, ribosomes, Golgi apparatus, lysosomes, centrioles and endoplasmic reticulum. State the function of two organelle.

Organel adalah komponen sel dalam sitoplasma. Antaranya ialah nucleus, mitokondria, kloroplas, vakuola, ribosom, radas Golgi, lisosom, sentriol dan retikulum endoplasma. Nyatakan fungsi antara kedua organel tersebut.

[4 marks]
[*4 markah*]

CLO1
C2

(b) There are two types of blood pressure which are systolic and diastolic pressure. Compare these two types of blood pressure.

Terdapat dua jenis tekanan darah iaitu tekanan sistolik dan diastolik. Bandingkan dua kategori tekanan darah tersebut.

[6 marks]
[*6 markah*]

CLO1
C3

(c) The heart is a muscular organ about the size of a fist, located behind and slightly left of the breastbone. The heart pumps blood through the network of arteries and veins called the cardiovascular system. Sketch the flow of blood within the heart by stressing the path of oxygenated and deoxygenated blood.

Jantung adalah organ berukuran sebesar kepalan tangan, terletak di belakang dan sedikit kiri tulang dada. Jantung mengepam darah melalui rangkaian arteri dan urat yang disebut sistem kardiovaskular. Lakarkan aliran darah di dalam jantung dengan menekankan jalan darah beroksigen dan deoksigenasi.

[10 marks]
[*10 markah*]

QUESTION 2

SOALAN 2

CLO1
C2

(a) One of the enzymes that is involved in human digestive system is hydrochloric acid. Elaborate the function of this enzyme.

Salah satu enzim yang terlibat dalam sistem pencernaan manusia adalah asid hidroklorik. Huraikan fungsi enzim ini.

[4 marks]
[*4 markah*]

CLO1
C3

(b) In digestive system, food is processed by the digestive organs so that nutrients can be absorbed from the intestines and circulate around the body. Write the process of food digestion from mouth to large intestine.

Dalam sistem pencernaan, makanan diproses oleh organ pencernaan sehingga nutrien dapat diserap dari usus dan diedarkan di sekitar tubuh. Tuliskan proses pencernaan makanan dari mulut ke usus besar.

[6 marks]
[*6 markah*]

CLO1
C4

(c) Respiration in mammal is the process of gaseous exchange between an organism and its environment. Figure out how the process of inhalation and exhalation take place.

Pernafasan pada mamalia adalah proses pertukaran gas yang berlaku antara organisma dan persekitarannya. Kenalpasti bagaimana proses penyedutan dan pernafasan berlaku.

[10 marks]
[*10 markah*]

QUESTION 3

SOALAN 3

CLO1
C2

(a) Follicle Stimulating Hormone (FSH) and Luteinizing Hormone (LH) are examples of hormones secreted by the pituitary gland for the reproductive system in women. Explain the function of these hormones.

Follicle Stimulating Hormone (FSH) *dan Luteinizing Hormone* (LH) *adalah contoh hormon yang dirembeskan oleh kelenjar pituitari untuk sistem pembiakan pada wanita. Terangkan fungsi hormon ini.*

[4 marks]

[*4 markah*]

CLO1
C3

(b) Ahmad and Mia have been married for 5 years and still have not been blessed with children. Various efforts have been made by them to get children. Based on your knowledge, share several options that can be suggested to these couples.

Ahmad dan Mia telah berkahwin selama 5 tahun dan masih belum dikurniakan zuriat. Pelbagai usaha telah dilakukan oleh mereka untuk mendapatkan anak-anak tersebut. Berdasarkan pengetahuan anda, kongsi beberapa pilihan yang boleh dicadangkan kepada pasangan ini.

[6 marks]

[*6 markah*]

CLO1
C4

(c) The urinary system or renal system consists of the kidney, ureter, bladder, and urethra. One of the functions of the kidney is to regulate the water level in our body. Based on your understanding, investigate how the urinary system responds to excess water in our body.

Sistem kencing atau sistem renal terdiri daripada buah pinggang, ureter, pundi kencing, dan uretra. Salah satu fungsi buah pinggang ialah mengawal paras air dalam badan kita. Berdasarkan pemahaman anda, siasat bagaimana sistem kencing bertindak balas terhadap lebihan air dalam badan kita.

[10 marks]
[*10 markah*]

QUESTION 4

SOALAN 4

CLO1
C3

(a) The pituitary gland can be divided into two types which are the posterior and anterior pituitary glands. Each of these glands secretes its own hormone. Write an example of a hormone secreted in these two glands and their role in the human body.

Kelenjar pituitari boleh dibahagikan kepada dua jenis iaitu kelenjar pituitari posterior dan anterior. Setiap kelenjar ini mengeluarkan hormonnya sendiri. Tulis satu contoh bagi hormon yang dirembeskan dalam kedua-dua kelenjar ini dan peranannya dalam tubuh manusia.

[4 marks]

[*4 markah*]

CLO1
C4

(b) The human body contains roughly 30 chemical messengers known as hormones, which regulate activities such as sleep, body temperature, hunger, and stress management. These hormones are products of the endocrine system, which along with the nervous system controls and coordinates our body processes. By using one example, correlate the interaction between the endocrine system and other organ systems.

Tubuh manusia mengandungi kira-kira 30 utusan kimia yang dikenali sebagai hormon, yang mengawal aktiviti seperti tidur, suhu badan, kelaparan, dan pengurusan tekanan. Hormon ini adalah produk sistem endokrin, yang bersama-sama dengan sistem saraf mengawal dan menyelaraskan proses badan kita. Dengan menggunakan satu contoh, kaitkan interaksi antara sistem endokrin dan sistem organ lain.

[6 marks]

[*6 markah*]

CLO1
C4

(c) Differences in the concentration of ions on opposite sides of a cellular membrane produce a voltage difference called the membrane potential. Correlate the difference in concentration of ions in terms of movement of ions, channel protein, and action potential.

Perbezaan kepekatan ion pada sisi bertentangan membran selular menghasilkan perbezaan voltan yang dipanggil potensi membran. Hubungkaitkan perbezaan kepekatan ion dari segi pergerakan ion, protein saluran, dan potensi tindakan.

[10 marks]
[*10 markah*]

SECTION B: 20 MARKS

BAHAGIAN B: 20 MARKAH

INSTRUCTION:

This section consists of **ONE (1)** essay questions. Answer **ALL** questions.

ARAHAN:

*Bahagian ini mengandungi **SATU (1)** soalan esei. Jawab **SEMUA** soalan.*

QUESTION 1

SOALAN 1

CLO1
C4

"Aminah has just been to the cinema with her friend to watch a new horror movie. While she is walking home alone she believes that she can hear footsteps following her and starts to panic. Without thinking she starts sprinting and gets home as fast as she can. She bursts through the front door, heart pounding, dripping with sweat and shaking."

Analyse the role of the autonomic nervous system and central nervous system by referring to Aminah's experience in your answer.

"Aminah baru sahaja pergi ke pawagam bersama rakannya untuk menonton filem seram baru. Semasa dia berjalan pulang ke rumah sendirian dia percaya bahawa dia dapat mendengar jejak kaki orang yang mengikutinya dan mula panik. Tanpa berfikir, dia mula berlari dan pulang secepat mungkin. Dia menerobos pintu depan, jantung berdegup kencang, menitiskan peluh dan gementar."

Analisis peranan sistem saraf autonomi dan sistem saraf pusat, merujuk kepada pengalaman Aminah dalam jawapan anda.

[20 marks]

[*20 markah*]

SOALAN TAMAT