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PART 2

BIOLOGI

Tingkatan 4



RAKAMAN SEMINAR



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2017 BIOLOGY SPM PAPER 2 2019 BAC SPM BIOLOGY P2**SECTION A**

- 1) **Chapter 3 (Form 4)**
Simple diffusion, Food preservation,
Active transport
- 2) **Chapter 2 (Form 5)**
Locomotion of fish 
- 3) **Chapter 4 (Form 4)**
Cellulose
Enzymes (Application & Activation energy)
- 4) **Chapter 7 (Form 4)**
Human respiratory system, Smoking
- 5) **Chapter 4 (Form 5)**
Ovarian cycle, Contraceptive pills

SECTION B

- 6) **Chapter 3 (Form 5)**
Reflex action
Afferent neurone VS Efferent neurone
Depressant effect on impulse transmission
- 7) **Chapter 1 (Form 5)**
Interstitial fluid
Normal artery VS Artery with plaque
Natural passive & Artificial active immunities
- 8) **Chapter 6 (Form 4)**
Eating habit
Good and bad effects of eating burger 
- 9) **Chapter 9 (Form 4)**
Air pollution, Deforestation

FORM 5

CHAPTER 1

Diagram 3.1 shows parts of the lymphatic system and blood circulatory system in a human body.

Rajah 3.1 menunjukkan bahagian-bahagian sistem limfa dan sistem peredaran darah dalam badan manusia.

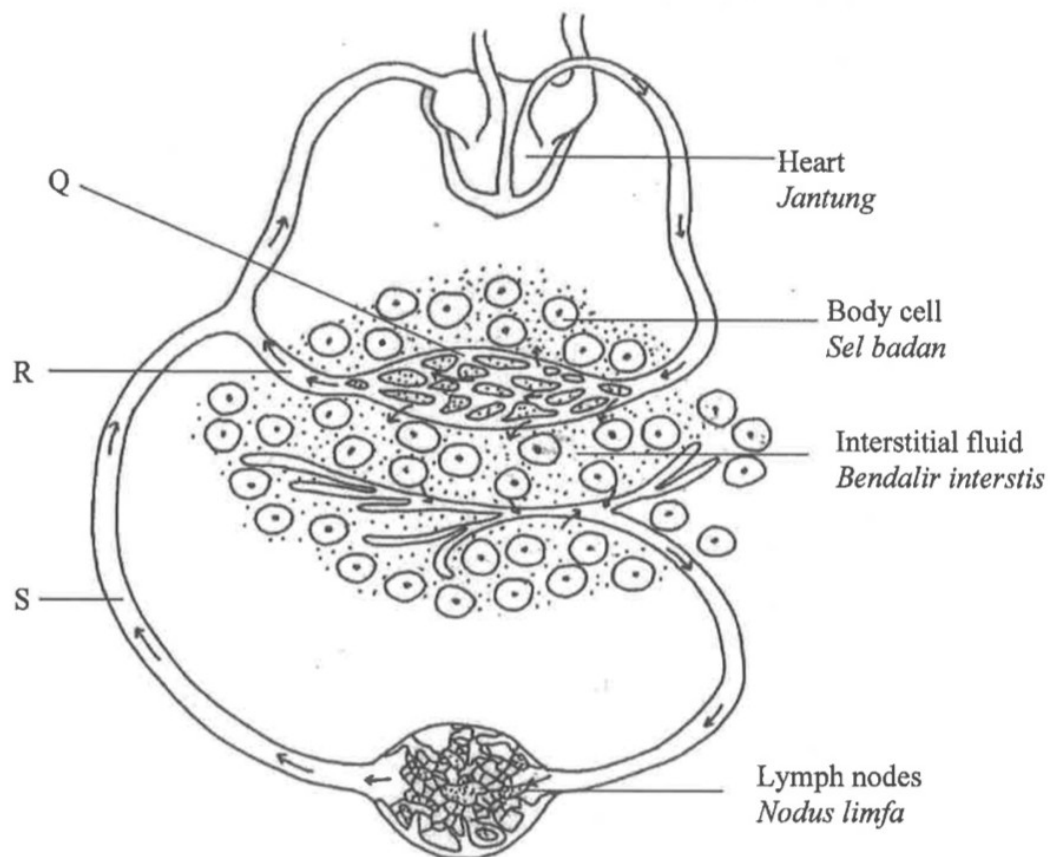


Diagram 3.1
Rajah 3.1

(a) Based on Diagram 3.1:
Berdasarkan Rajah 3.1:

(i) Name structure R.
Namakan struktur R.

[1 mark]
[1 markah]

- (ii) State **one** substance that can be found in S.

*Nyatakan **satu** bahan yang boleh dijumpai dalam S.*

.....

[1 mark]

[1 markah]

- (b) (i) Explain how structure Q allows substances to pass through it efficiently.

Terangkan bagaimana struktur Q membenarkan bahan untuk merentasinya dengan efisien.

.....

.....

.....

[2 marks]

[2 markah]

- (ii) Explain how the interstitial fluid is returned back into the blood capillaries at the venous end.

Terangkan bagaimana bendalir interstis dikembalikan semula ke dalam kapilari darah berhampiran hujung venul.

.....

.....

.....

[2 marks]

[2 markah]

- (c) Another function of lymphatic system is to provide a body defence mechanism.

Explain the role of lymph nodes that aid in the body defence mechanism.

Fungsi lain sistem limfa ialah menyediakan mekanisma pertahanan badan.

Terangkan peranan nodus limfa dalam mekanisma pertahanan badan.

.....

.....

.....

[2 marks]

[2 markah]

(d)

Situation:

An old man has been sick for six months and he was bed ridden. His muscles became weak and he could not move his limbs due to excess of interstitial fluid in the lower parts of his body.

His doctor suggested him to undergo physiotherapy immediately.

Situasi:

Seorang lelaki tua telah jatuh sakit dan terlantar selama enam bulan. Otot beliau menjadi lemah dan tidak dapat menggerakkan kakinya disebabkan pengumpulan bendalir interstis di bahagian anggota bawah badan.

Doktor mencadangkan beliau menjalani fisioterapi dengan segera.

Based on the situation above, explain how the skeletal muscles and the structure of lymphatic vessel can prevent the condition from happening.

Berdasarkan situasi di atas, terangkan bagaimana otot rangka dan struktur salur limfa boleh mengelakkan keadaan tersebut daripada berlaku.

.....

.....

.....

.....

.....

[4 marks]

[4 markah]

Diagram 4.1 shows the blood circulatory system in organism P and organism Q.

Rajah 4.1 menunjukkan sistem peredaran darah bagi organisma P dan organisma Q.

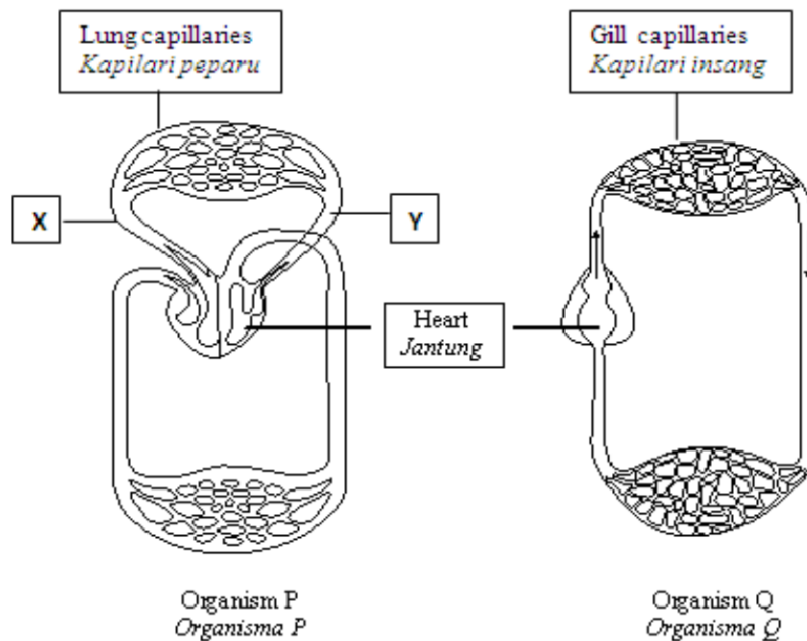


Diagram 4.1
Rajah 4.1

- (a) State the type of blood circulatory system of organism P and organism Q.
Nyatakan jenis sistem peredaran darah bagi organisma P dan organisma Q.

Organism P:

Organisma P:

Organism Q:

Organisma Q:

[2 marks]

[2 markah]

- (b) State **one** difference between the heart of organism P and organism Q.
Nyatakan **satu** perbezaan di antara jantung organisma P dan organisma Q.

[1 mark]

[1 markah]

- (c) Explain why blood vessel X has higher pressure than vessel Y.
Terangkan mengapa salur darah X mempunyai tekanan lebih tinggi dari salur darah Y.

[2 marks]
 [2 markah]

- (d) The blood circulatory system is also involved in the production of antibodies in the body defense mechanism.
 Diagram 4.2 shows the concentration of antibody in the blood of individuals A and individuals B for a period of 10 weeks to acquire immunity.
 Both of them were given two injections respectively.

Sistem peredaran darah terlibat dalam penghasilan antibodi untuk mekanisme pertahanan badan.

Rajah 4.2 menunjukkan kepekatan antibodi di dalam darah kedua-dua individu A dan B dalam jangka masa 10 minggu untuk mendapatkan keimunan.

Kedua – dua mereka masing- masing telah diberikan dua suntikan.

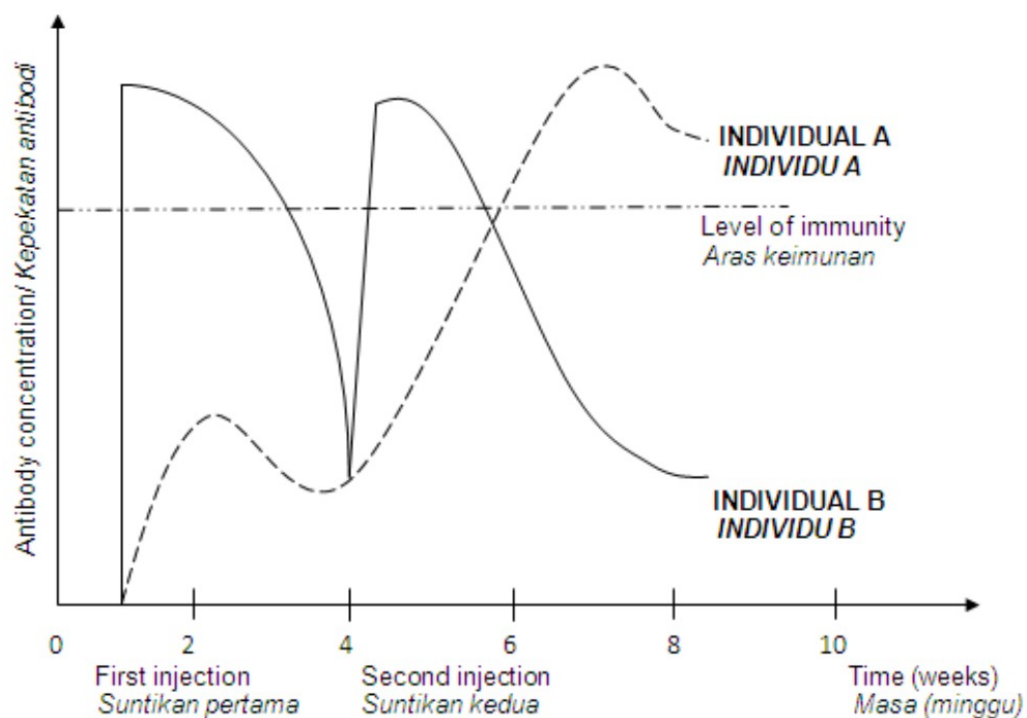


Diagram 4.2
 Rajah 4.2

- (i) What type of immunity is obtained by A and B respectively?
Apakah jenis keimunan yang diperolehi oleh individu A dan B masing-masing?

A: _____

B: _____

[2 marks]

[2 markah]

- (ii) Explain why individual A has to be given the second injection which contained the same vaccine.
Terangkan mengapa individu A harus diberi suntikan kedua bagi vaccine yang sama.

[2 marks]

[2 markah]

- (e) AIDS is caused by HIV (Human Immunodeficiency Virus). AIDS patients are easily infected with various types of diseases and will eventually die, even from harmless disease.
Explain how HIV affects the body's immune system.

Penyakit AIDS disebabkan oleh virus HIV (Human Immunodeficiency Virus). Pesakit AIDS mudah dijangkiti oleh pelbagai jenis penyakit dan akhirnya akan mati walaupun oleh penyakit yang tidak berbahaya.

Terangkan bagaimana HIV memberi kesan kepada sistem pertahanan badan.

[3 marks]

[3 markah]

CHAPTER 3

Diagram 5.1 shows a 'fight or flight' situation which involve a hormone secreted by organ R shown in Diagram 5.2.

Rajah 5.1 menunjukkan situasi 'lawan atau lari' yang melibatkan sejenis hormon dirembes oleh organ R seperti pada Rajah 5.2.

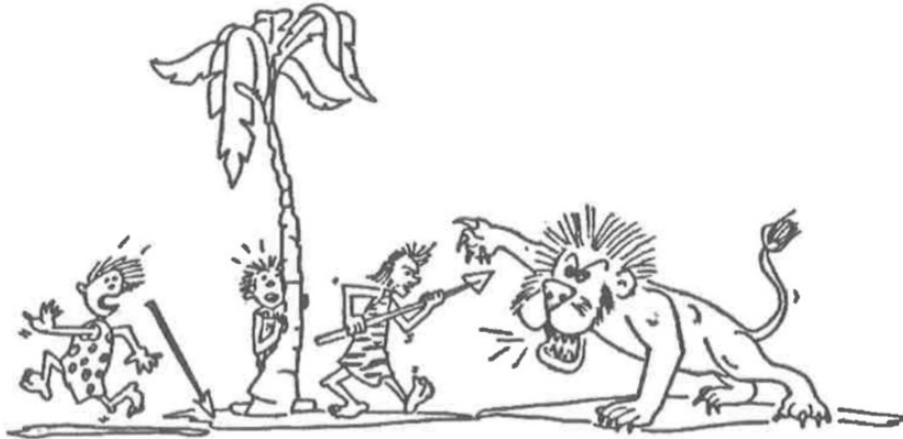


Diagram 5.1

Rajah 5.1

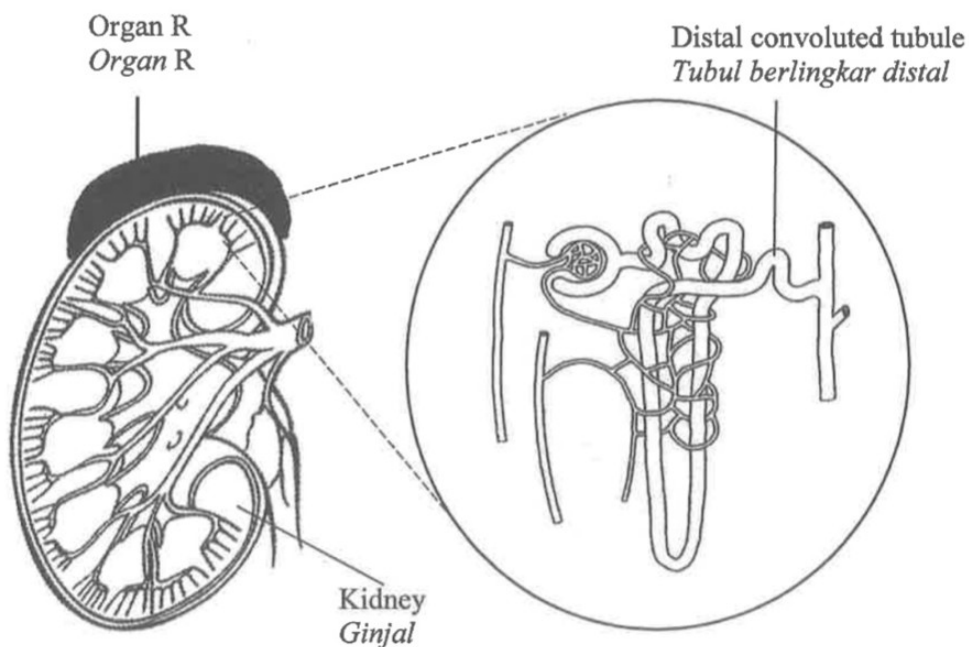


Diagram 5.2

Rajah 5.2

- (a) (i) Name the hormone secreted by organ R that response to the situation.
 Namakan hormon yang dirembeskan oleh organ R untuk menghasilkan gerakbalas terhadap situasi tersebut.

[1 mark]
 [1 markah]

- (ii) State **two** physiological changes that occurs to the men due to the secretion of the hormone name in (a) (i).

*Nyatakan **dua** perubahan fisiologi yang berlaku pada lelaki-lelaki tersebut akibat rembesan hormon yang dinamakan di (a) (i).*

1.

2.

[2 marks]

[2 markah]

- (b) Explain how the nervous system and endocrine system work together in a 'fight or flight' situation.

Terangkan bagaimana sistem saraf dan sistem endokrin bekerjasama di dalam situasi 'lawan atau lari'.

.....

.....

.....

.....

[3 marks]

[3 markah]

- (c) The following information is given by a neurologist.

Berikut adalah pernyataan diberikan oleh ahli neurologi.

Adrenal insufficiency is a condition in which the adrenal glands do not produce adequate amount of hormones such as noradrenaline and aldosterone. Lack of aldosterone causing craving for salty food due to the urinary losses of sodium ions.

Kemerosotan fungsi adrenal ialah satu keadaan di mana kelenjar adrenal tidak merembeskan hormon noradrenalina dan aldosteron secukupnya. Kekurangan hormon aldosteron menyebabkan individu cenderung untuk

Based on the information above, explain how adrenal insufficiency affect the process at the distal convoluted tubule?

Berdasarkan pernyataan di atas, terangkan bagaimana ketidakcekan fungsi adrenal memberi kesan terhadap proses di tubul berlingkar distal?

.....

.....

.....

.....

[3 marks]
[3 markah]

- (d) Table 5 shows the percentage of substances in the urine of a healthy person and Mr. A

Jadual 5 menunjukkan peratus bahan-bahan dalam air kencing individu sihat dan Encik A

Substances <i>Bahan-bahan</i>	Concentration substances in urine (%) <i>Kepekatan bahan-bahan dalam air kencing (%)</i>	
	Healthy individual <i>Individu sihat</i>	Mr. A <i>Encik A</i>
Glucose <i>Glukosa</i>	0.0	5.0
Amino acid <i>Asid amino</i>	0.0	5.0
Urea <i>Urea</i>	20.0	20.0
Sodium ions <i>Ion natrium</i>	1.0	1.0

Table 5
Jadual 5

Explain why the percentage of glucose and amino acid in the urine of Mr. A differs from a healthy individu.

Terangkan mengapa peratus glukosa dan amino asid di dalam air kencing Encik A berbeza daripada individu sihat.

.....

.....

.....

.....

[3 marks]
[3 markah]

5. Diagram 5.1 (a) shows impulse pathway that occur in human nervous system. Diagram 5.1 (b) shows responded that occur to the hand when touch the flame. *Rajah 5.1 (a) menunjukkan laluan impuls yang berlaku dalam sistem saraf manusia. Diagram 5.1 (b) menunjukkan gerakbalasbalas yang berlaku pada tangan apabila tersentuh api.*

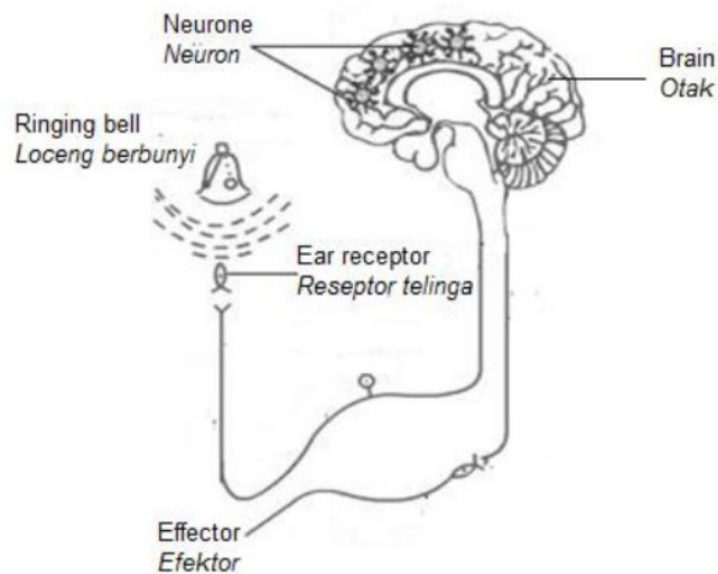


Diagram 5.1(a) / *Rajah 5.1 (a)*

Flame
Nyalaan lilin

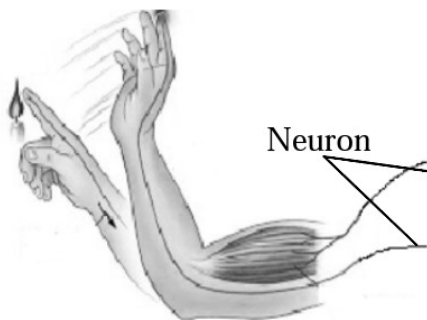


Diagram 5.1(b) / *Rajah 5.1 (b)*

- (a) Name the type of tindakan in Diagram 5.1 (a) and 5.1 (b)
Namakan jenis tindakan dalam Rajah 5.1 (a) dan 5.1 (b)

Diagram 5.1(a) / *Rajah 5.1(a)* :

Diagram 5.2(b) / *Rajah 5.2(b)*:.....

[2 marks]

- (b) (i) Draw paths nerve impulses Diagram 5.1 (a) using the arrows () $\longrightarrow$
Lukis laluan impuls saraf Rajah 5.1(a) menggunakan anak panah ($\longrightarrow$)

[1 mark]

- (ii) Complete Diagram 5.1 (b) by drawing a cross section of the central reflex action in appropriate box and label the neurons involved.

Lengkapkan Rajah 5.1(b) dengan melukis keratan rentas pusat tindakan reflex di dalam kotak yang disediakan dan labelkan neuron yang terlibat.

[2 marks]

- (c) State one similarity and one difference responses in Diagram 5.1 (a) and 5.1 (b)
Nyatakan satu persamaan dan satu perbezaan gerakbalas dalam Rajah 5.1(a) dan 5.1(b)

Similarity/*Persamaan* :

.....

Difference/*Perbezaan* :

.....

[2 marks]

- (d) State of the importance of responses in
Nyatakan satu kepentingan gerakbalas dalam

Diagram 5.1(a) / *Rajah 5.1(a)*:

.....

.....

Diagram 5.1(b) / *Rajah 5.1(b)* :

.....

.....

[2 marks]

- (e) Muhammad Ali was a famous boxer in the world. At the end of his life, he suffered from nerves of Parkinson's disease. The disease is caused by insufficient secretion of dopamine in the brain.

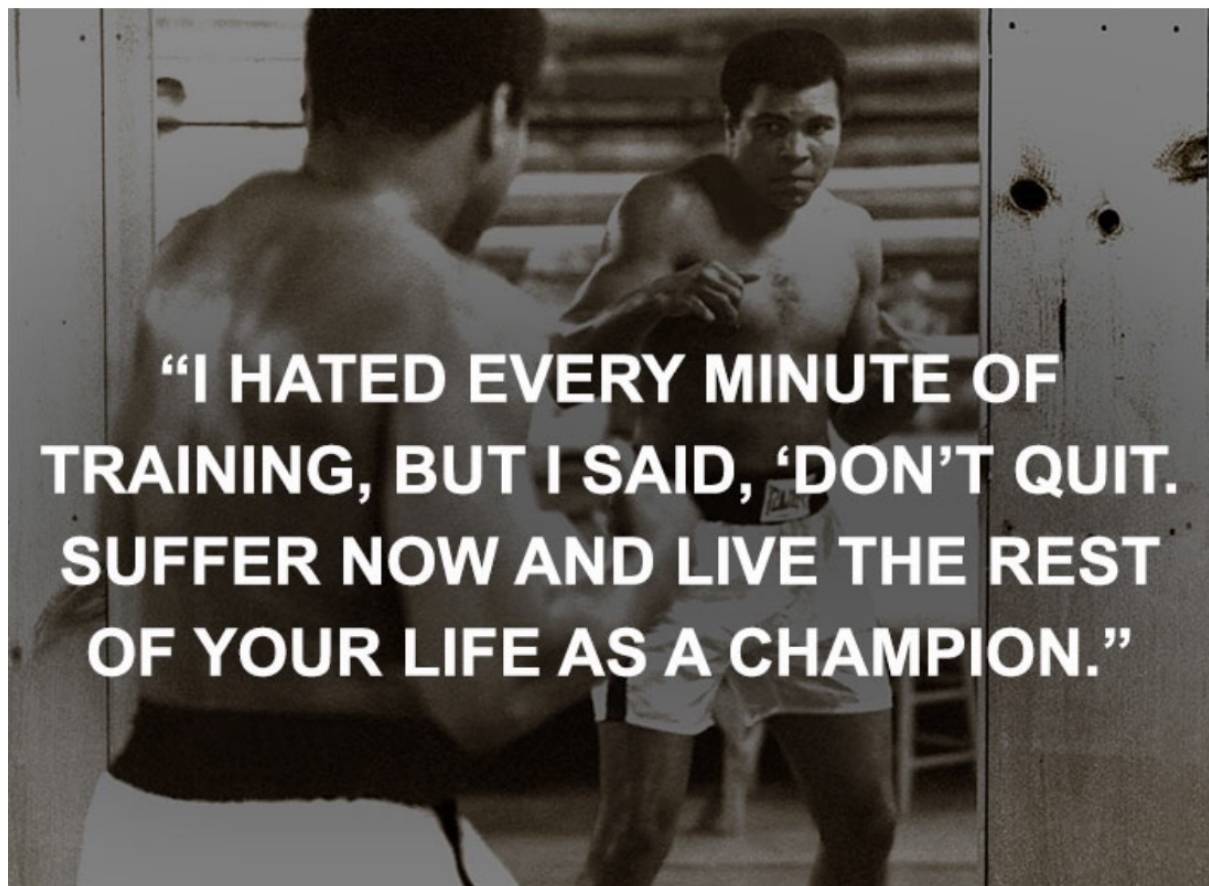
State three symptom of this disease.

Muhammad Ali merupakan seorang peninju yang terkenal di dunia. Pada akhir hayatnya, dia mengidap penyakit saraf iaitu penyakit Parkinson. Penyakit ini disebabkan oleh kekurangan rembesan bahan dopamine di otak.

Nyatakan tiga symptom bagi penyakit ini.

1.
2.
3.

[3 marks]



CHAPTER 4

- (a) Diagram 6.1 shows a human foetus in his mother's uterus.
Rajah 6.1 menunjukkan fetus manusia di dalam uterus ibunya.

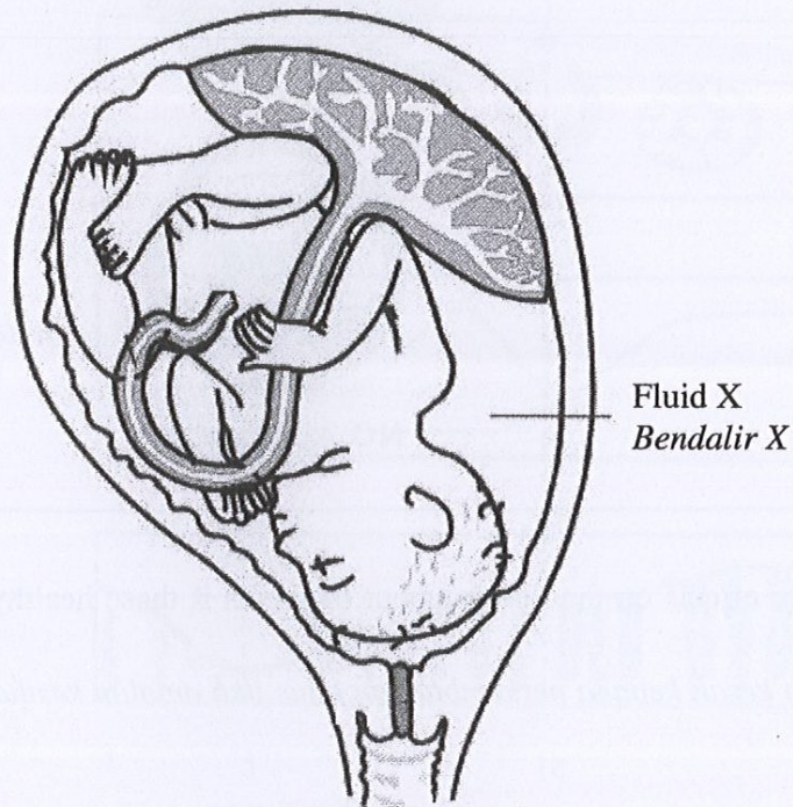


Diagram 6.1
Rajah 6.1

Explain the function of fluid X
Terangkan fungsi bendalir X

[4 marks]
[4 markah]

- (b) Diagram 6.2 shows three healthy practises for pregnant women.
Rajah 6.2 menunjukkan tiga amalan sihat bagi wanita hamil.



Explain the effects on the development of foetus if these healthy practises are not followed.

Terangkan kesan kepada perkembangan fetus jika amalan kesihatan tersebut tidak diikuti.

[6 marks]

[6 markah]

CHAPTER 5

SOALAN 2

Colour blindness is a sex-linked inheritance which a person cannot differentiate between certain colours. . This disease can be inherited

Buta warna adalah sejenis penyakit terangkai seks di mana seseorang itu tidak dapat membezakan di antara sesuatu warna. Penyakit ini boleh diwarisi.

A normal male for colour blind married to a woman who is color blind. Complete the schematic inheritance diagram below.

Seorang lelaki normal untuk ciri buta warna berkahwin dengan seorang wanita buta warna.

Lengkapkan rajah skema pewarisan buta warna di bawah

Phenotype of parents :

Fenotip induk

:

Normal male

Lelaki normal

Colour blind female

Wanita buta warna

Genotype of parents :

Genotip induk

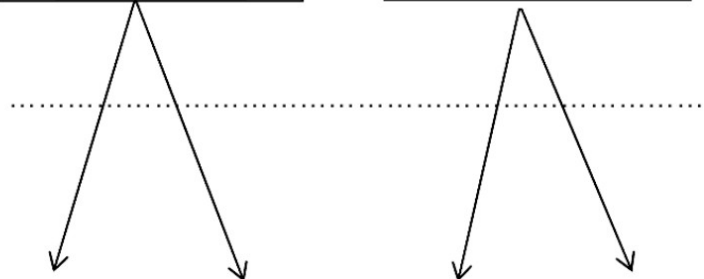
:

Process X

:

Proses X

:



Gamet

:

Gametes

Genotypes of offspring:

Genotip anak

Phenotype of offspring:

Fenotip anak

.....

- (a) Write the genotype of parents in the boxes provided in the diagram above.
Tulis genotip induk dalam petak yang disediakan dalam rajah di atas.

[2 marks/markah]

- (b) (i) Name process X
Namakan proses X

.....

[1 mark/markah]

- (ii) Write the gametes in the boxes provided in the diagram above.
Tuliskan gamet di dalam kotak yang disediakan dalam rajah di atas.

[2 marks/markah]

- (c) (i) Name the Mendel's Law that involved in the inheritance above. Explain your answer.
Namakan Hukum Mendel yang terlibat di dalam pewarisan di atas. Jelaskan jawapan anda.

.....
.....
.....

[2 marks/markah]

- (ii) Write the genotype and phenotype of the offspring in the space provided in the diagram above.
Tuliskan genotip dan fenotip bagi anak di dalam ruangan yang disediakan di atas.

[2marks/markah]

- (d) If a colour blind male married to a female carrier of colour blind, what is the probability of the couple to get colour blind son?
Sekiranya lelaki buta warna itu berkahwin dengan wanita pembawa bagi penyakit buta warna , apakah kebarangkalian pasangan ini mendapat anak lelaki yang buta warna?

.....
.....
.....
.....

[3marks/markah]

Diagram 7.1 shows the blood group of a married couple and their offspring. The couple has three boys and one girl but all of them have different types of blood group.

Rajah 7.1 menunjukkan jenis kumpulan darah bagi satu keluarga. Pasangan tersebut mempunyai tiga anak lelaki dan seorang anak perempuan dengan kumpulan darah yang berbeza.

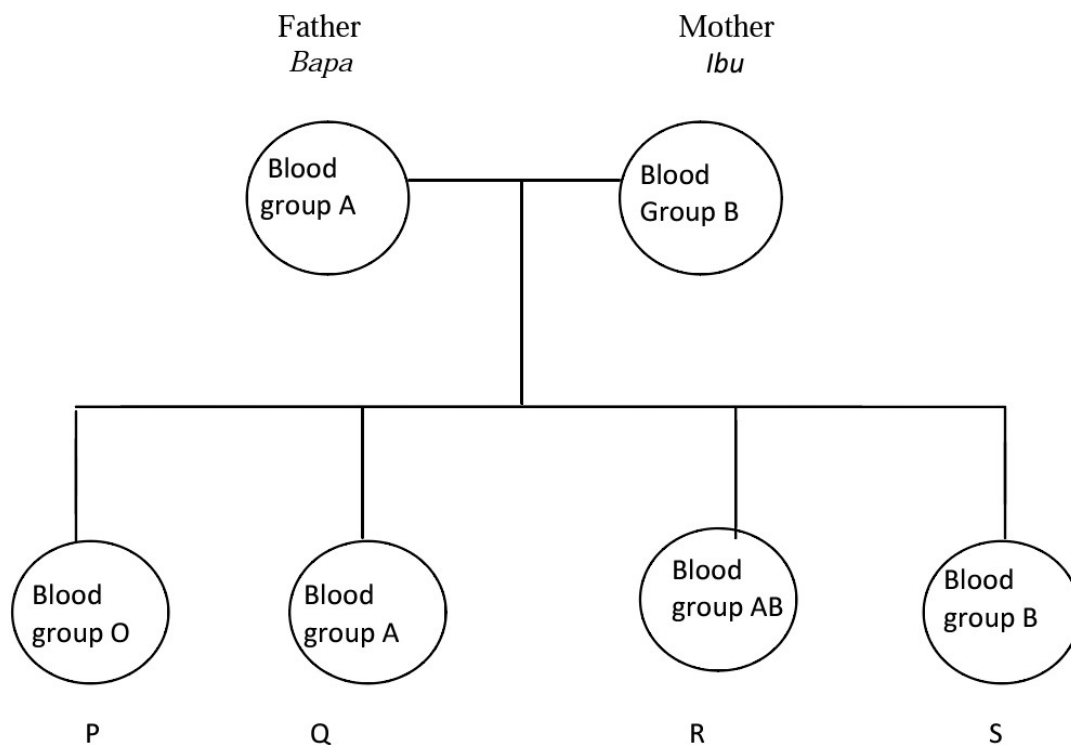


Diagram 7.1
Rajah 7.1

- (a) State the alleles that determine the ABO blood group.
Nyatakan alel-alel yang menentukan kumpulan darah ABO.

[2 marks / markah]

- (b) Based on Mendel's First Law, with the help of Punnett square schematic diagram, explain why the blood of each member in the family is different

Berdasarkan Hukum Mendel yang pertama dan dengan bantuan rajah segiempat Punnett, terangkan kenapa setiap ahli dalam keluarga tersebut mempunyai jenis darah yang berbeza.

[4 marks / markah]

- (c) Male offspring P lost plenty of blood during an accident. He needs to replace the blood lost. Explain why her parents are not suitable donors to offspring P.

Anak lelaki P kehilangan banyak darah dalam satu kemalangan. Beliau perlu menggantikan darah yang hilang.

Terangkan mengapa ibubapanya bukan penderma yang sesuai kepada anak P.

[4 marks / markah]

- (d) Colour blindness is a defect in which the person cannot distinguish red and green colours. It is a sex-linked disease which can be inherited.

A normal man has a wife who is a carrier of colour blindness.

With the help of a schematic diagram, explain the possibility genetic combination (phenotype) of their children to inherit colour blindness

Buta warna ialah satu kecacatan di mana seseorang itu tidak dapat membezakan warna merah dan hijau. Ia merupakan penyakit gen terangkai seks yang boleh diwarisi.

Seorang lelaki normal mempunyai seorang isteri pembawa buta warna.

Dengan bantuan rajah skematik , terangkan kemungkinan kombinasi genetic (fenotip) untuk anak mereka mewarisi buta warna

[10 marks / markah]

Sila lengkapkan borang penilaian bagi Seminar SPM yang telah anda hadiri. Penilaian anda dapat membantu kami memahami tahap keberkesanan program ini dan seterusnya membolehkan kami meningkatkan kualiti perkhidmatan kami di masa hadapan.

Terima kasih!

Please fill up this form for the session that you are attending. Your evaluation will help us improve our service and help us understand the effectiveness of this program.

Thank you!

1. Nombor Telefon

Phone Number

2. Apakah subjek bagi seminar yang sedang anda sertai sekarang?

What is the seminar's subject that you're attending now?

☐ Bahasa Malaysia

☐ Kimia

☐ English

☐ Chemistry

☐ Sejarah

☐ Fizik

☐ Sains

☐ Physics

☐ Science

☐ Matematik Tambahan

☐ Matematik

☐ Additional Maths

☐ Mathematics

☐ Perniagaan

☐ Biologi

☐ Prinsip Perakaunan

☐ Biology

☐ Ekonomi

3. Pernahkah anda menonton mana-mana video BACfreeschool (sebelum ini dikenali sebagai EduNation)?

Have you ever watched any BACFreeschool's (previously known as EduNation) videos?

☐ Ya
Yes

☐ Tidak
No

4. Nilai kefahaman guru terhadap isi kandungan yang diajar bagi subjek ini.

Rate the teacher's understanding of this particular subject.

Sangat Rendah <i>Very Low</i>	Rendah <i>Low</i>	Sederhana <i>Intermediate</i>	Tinggi <i>High</i>	Sangat Tinggi <i>Very High</i>
☐	☐	☐	☐	☐

5. Nilai cara penyampaian guru bagi subjek ini.

Rate the teacher's delivery of the subject.

Sangat Tidak Menarik <i>Very Uninteresting</i>	Tidak Menarik <i>Not Interesting</i>	Sederhana <i>Intermediate</i>	Menarik <i>Interesting</i>	Sangat Menarik <i>Very Interesting</i>
☐	☐	☐	☐	☐

6. Nilai tahap kepuasan terhadap nota tambahan yang telah diberikan.

Rate your satisfaction level with the notes given.

Sangat Tidak Berpuashati <i>Very Unsatisfied</i>	Tidak Berpuashati <i>Not Satisfied</i>	Sederhana <i>Intermediate</i>	Berpuashati <i>Satisfied</i>	Sangat Berpuashati <i>Very Satisfied</i>
☐	☐	☐	☐	☐

7. Nilai tahap kebergunaan isi kandungan seminar.

Rate the usefulness of the seminar's content to your SPM preparation.

Sangat Tidak Berguna <i>Not Very Useful</i>	Tidak Berguna <i>Not Useful</i>	Sederhana <i>Intermediate</i>	Useful <i>Berguna</i>	Sangat Useful <i>Very Useful</i>
☐	☐	☐	☐	☐

8. Bagi pendapat anda, 3 jam untuk satu sesi seminar adalah...

In your opinion, 3 hours per session is...

- ☐ terlalu pendek.
too short.
- ☐ bersesuaian.
just right.
- ☐ terlalu panjang.
too long.

9. Adakah anda mempunyai sebarang maklum balas/komen bagi meningkatkan prestasi kami?

Do you have any additional comments, questions, or concerns you would like to share?