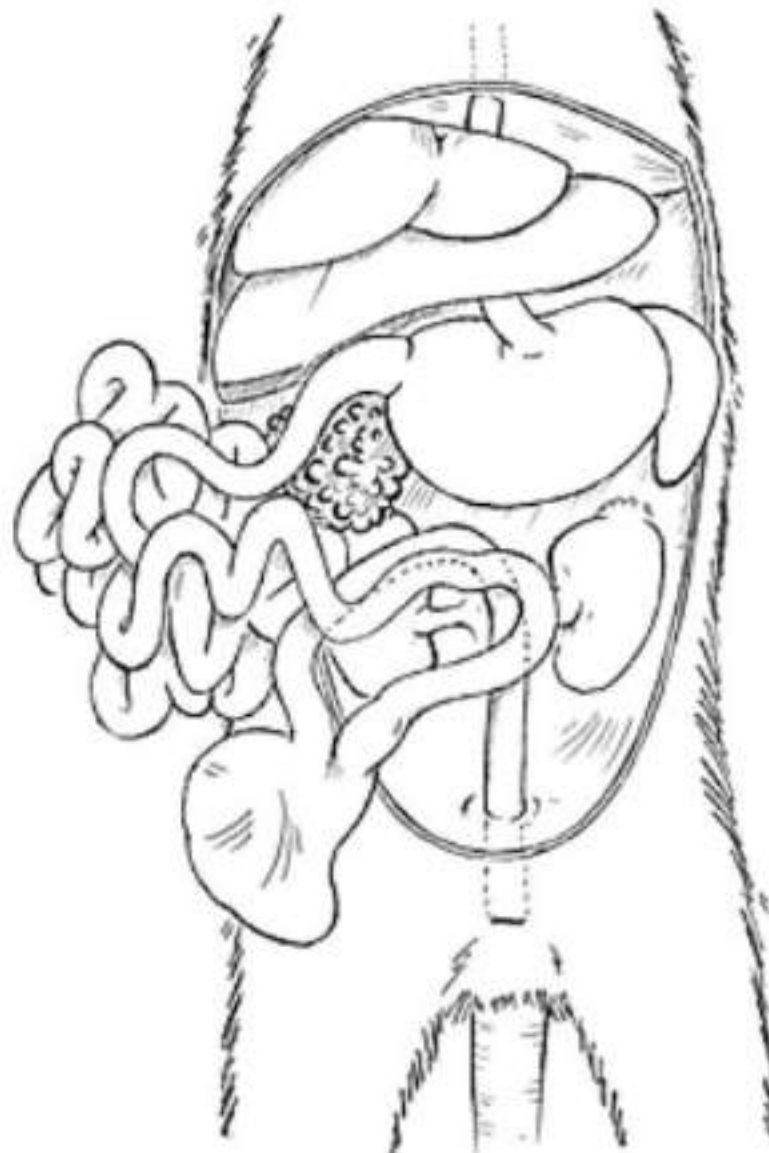


1. Selepas menjalankan eksperimen, bangkai haiwan perlu diuruskan dengan teliti sebelum
(R) dibuang. Yang manakah kategori bahan sisa biologi bagi Rajah 1?
After carrying out an experiment, animal carcasses that need to be managed with care before disposal. Which biological waste category does Diagram 1 belong to?



Rajah 1
Diagram 1

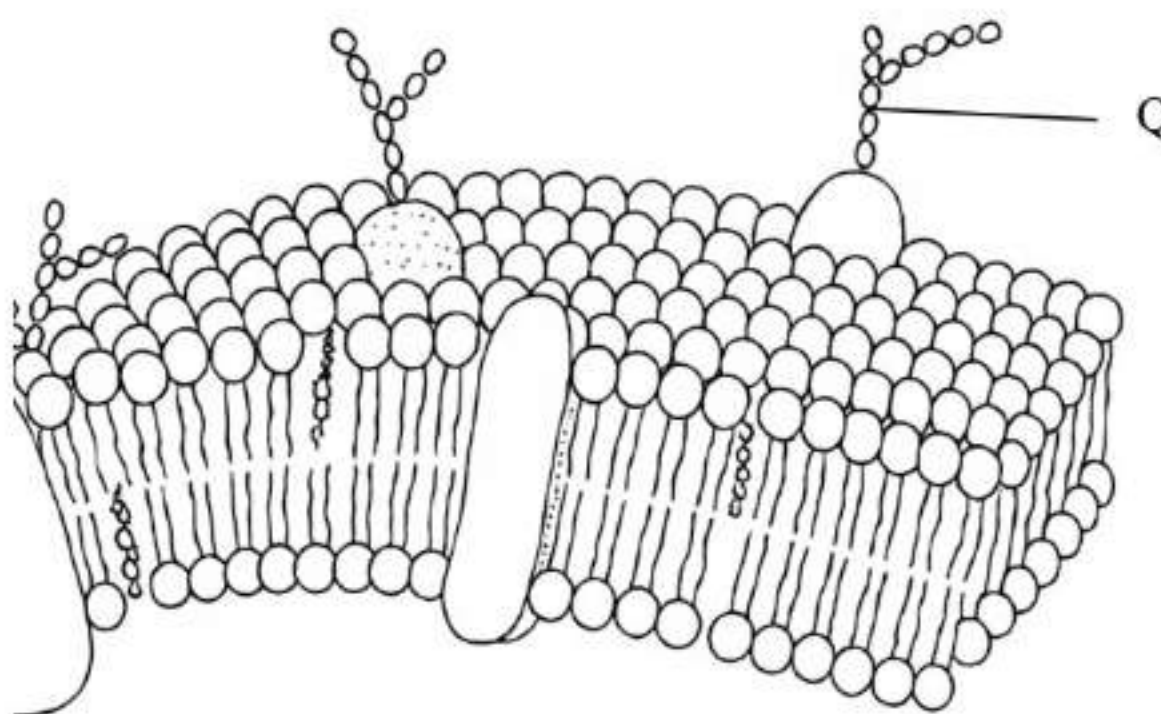
- A Kategori A
Category A
- B Kategori B
Category B
- C Kategori C
Category C
- D Kategori D
Category D

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2. Antara yang berikut, komponen sel manakah yang mempunyai struktur membran berganda?
(R) *Which of the following cell components has a double membrane structure?*

- A Mitokondria
Mitochondrion
- B Ribosom
Ribosome
- C Membran plasma
Plasma membrane
- D Jasad Golgi
Golgi apparatus

3. Rajah 2 menunjukkan struktur membran plasma.
(R) *Diagram 2 shows the structure of the plasma membrane.*



Rajah 2
Diagram 2

Apakah struktur Q?
What is structure Q?

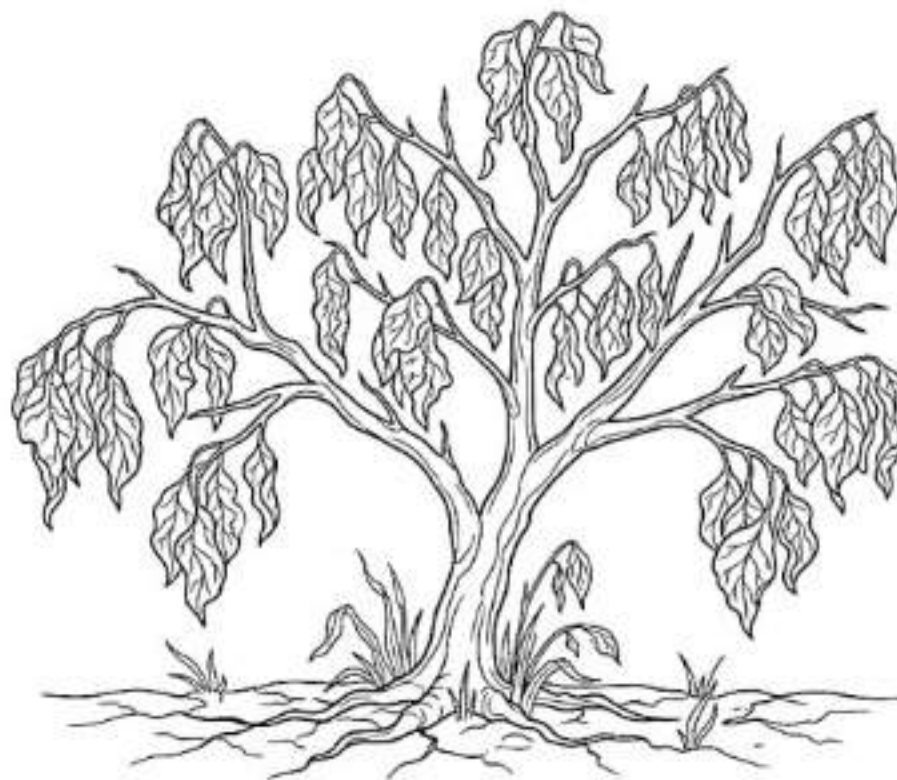
- A Glikolipid
Glycolipid
- B Kolesterol
Cholesterol
- C Glikoprotein
Glycoprotein
- D Protein pembawa
Carrier protein



4. Rajah 3 menunjukkan keadaan tumbuhan selepas diberi baja berlebihan yang mengakibatkan air keluar daripada sel-sel tumbuhan.

(R)

Diagram 3 shows the condition of a plant after being given excessive fertiliser resulting in water moving out of the plant cells.



Rajah 3
Diagram 3

Antara yang berikut, manakah menerangkan keadaan sel bagi tumbuhan tersebut?
Which of the following describe the condition of the plant cell?

- A Vakuol mengembang dan menolak sitoplasma serta membran plasma ke dinding sel.
The vacuole expands and pushes the cytoplasm and plasma membrane against the cell wall.
- B Vakuol mengecil dan sitoplasma mengecut menyebabkan membran plasma tertarik daripada dinding sel.
The vacuole and cytoplasm shrink, causing the plasma membrane to be pulled away from the cell wall.
- C Vakuol pecah dan sitoplasma mengembang menyebabkan membran plasma mengecut.
The vacuole ruptures and the cytoplasm expand, causing the plasma membrane to shrink.
- D Vakuol pecah dan sitoplasma mengecut menyebabkan membran plasma tertarik daripada dinding sel.
The vacuole ruptures and cytoplasm shrink, causing the plasma membrane to be pulled away from the cell wall.



5. (T) Seorang individu didapati mempunyai aras kolesterol dalam darah yang tinggi. Doktor menasihatkannya supaya mengurangkan pengambilan makanan yang tinggi kandungan asid lemak tepu bagi mengurangkan risiko penyakit kardiovaskular.

An individual is found to have a high blood cholesterol level. The doctor advises him to reduce the intake of high in saturated fatty acid to lower the risk of cardiovascular diseases.

Antara yang berikut, makanan yang manakah sumber utama asid lemak tepu?

Which of the following foods is the main source of saturated fatty acid?

- A Ikan salmon
Salmon
- B Avokado
Avocado
- C Mentega
Butter
- D Minyak jagung
Corn oil

6. Antara yang berikut yang manakah adalah sifat enzim yang **betul**?

(S) *Which of the following are the **correct** properties of enzymes?*

- I Tindak balas enzim adalah sangat spesifik
Enzymes reactions are highly specific
- II Enzim diperlukan dalam kuantiti yang sedikit
Enzymes are needed in small quantities
- III Tindak balas enzim adalah tidak berbalik
Enzyme reaction is irreversible
- IV Tindak balas enzim boleh diperlahankan dengan kofaktor
Enzyme reaction can be slowed down by cofactors

- A I dan II sahaja
I and II only
- B I dan III sahaja
I and III only
- C II dan III sahaja
II and III only
- D II dan IV sahaja
II and IV only

7. Antara yang berikut, sel yang manakah merupakan hasil meiosis?
(S) Which of the following cells is the product of meiosis?

A



C



B

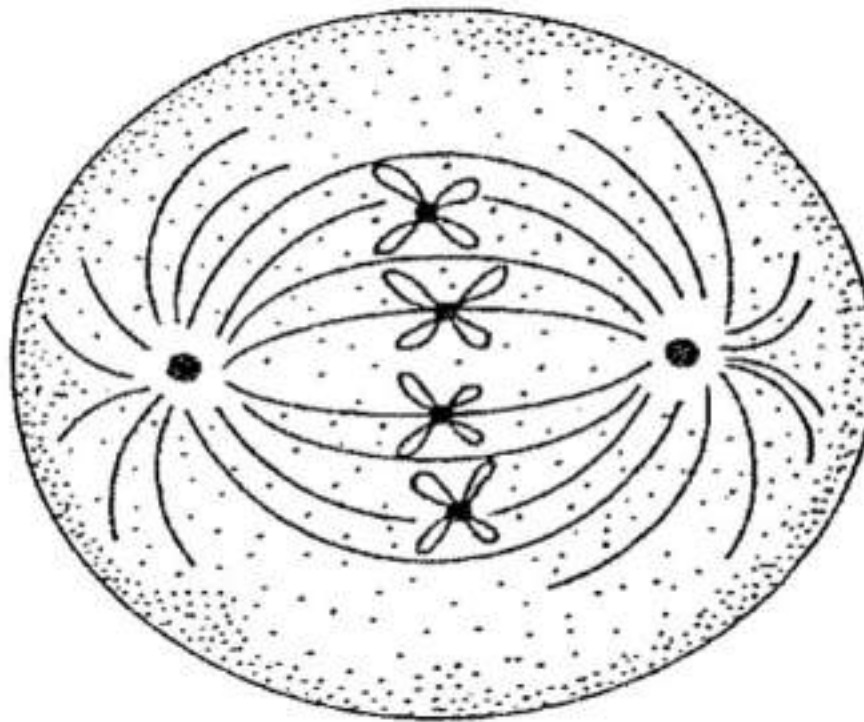


D



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8. Rajah 4 menunjukkan metafasa II bagi meiosis dalam satu sel haiwan.
(T) *Diagram 4 shows metaphase II of meiosis in an animal cell.*

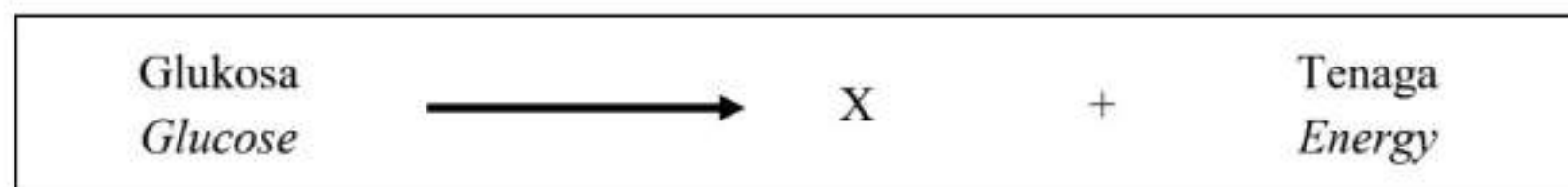


Rajah 4
Diagram 4

Apakah bilangan kromosom dalam gamet selepas sel membahagi dengan lengkap?
What is the number of chromosomes in a gamete after the cell completes its division.

- A 2
- B 3
- C 4
- D 5

9. Rajah 5 menunjukkan persamaan suatu proses yang berlaku dalam sel otot seorang atlet semasa melakukan aktiviti cergas.
(R) *Diagram 5 shows an equation of a process that takes place in the muscle cell of an athlete while doing a vigorous activity.*



Rajah 5
Diagram 5

Apakah X?
What is X?

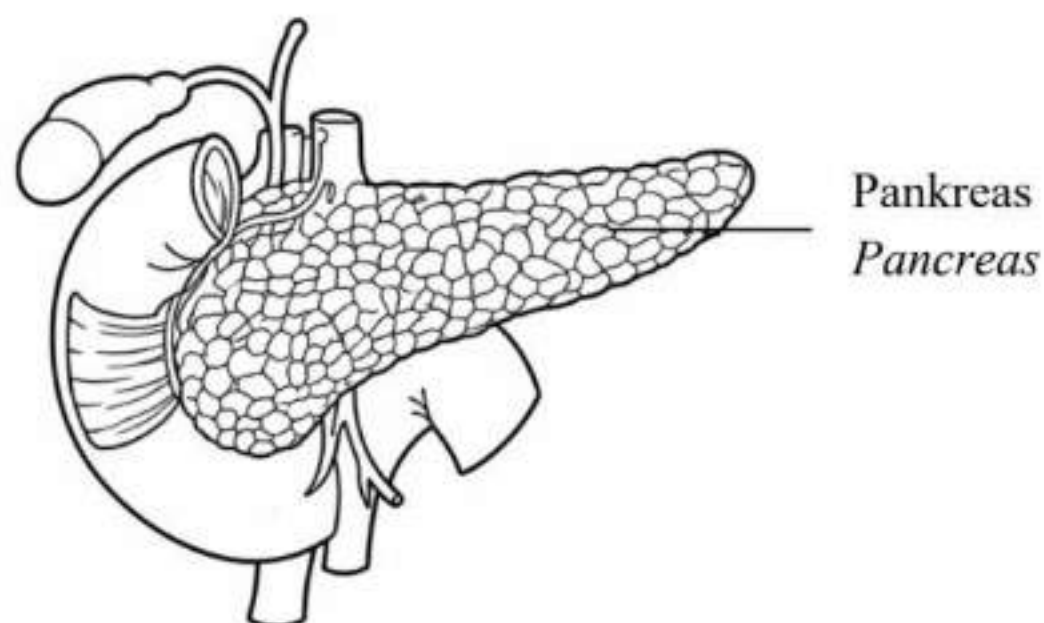
- A Oksigen
Oxygen
 - B Karbon dioksida
Carbon dioxide
 - C Asid laktik
Lactic acid
 - D Etanol
Ethanol
10. Antara berikut yang manakah berlaku semasa manusia menghembus nafas?
(R) *Which of the following happens during exhalation in human?*
- A Otot interkosa luar mengecut
External intercostal muscles contract
 - B Isipadu rongga toraks bertambah
Volume of the thorax cavity increase
 - C Sangkar rusuk dinaikkan ke atas dan ke arah depan.
Ribcage move upwards and outwards.
 - D Otot diafragma mengendur dan diafragma melengkung ke atas
Diaphragm muscles relax and the diaphragm moves upwards

11. (S) Seorang pemburu telah tertembak rakannya secara tidak sengaja. Sebutir peluru menembusi dadanya tetapi tidak terkena jantungnya. Mangsa mengalami sesak nafas yang teruk dan meninggal dunia di tempat kejadian. Terangkan mengapa mangsa tidak dapat bernafas dengan normal.

A hunter accidentally shot his friend. A bullet penetrated his chest but missed his heart. The victim suffered severe shortness of breath and died at the scene. Explain why the victim was unable to breathe normally.

- A Tekanan rongga torak lebih tinggi dari tekanan atmosfera.
Thoracic cavity pressure is higher than atmospheric pressure.
- B Tekanan rongga torak lebih rendah dari tekanan atmosfera.
Thoracic cavity pressure is lower than atmospheric pressure.
- C Tekanan rongga torak sama dengan tekanan atmosfera.
Thoracic cavity pressure is same as atmospheric pressure.
- D Tekanan rongga torak tidak berubah.
Thoracic cavity pressure does not change.

12. Rajah 6 menunjukkan satu organ yang berperanan dalam sistem pencernaan manusia.
(R) *Diagram 6 shows the organ which plays a role in the human digestive system.*



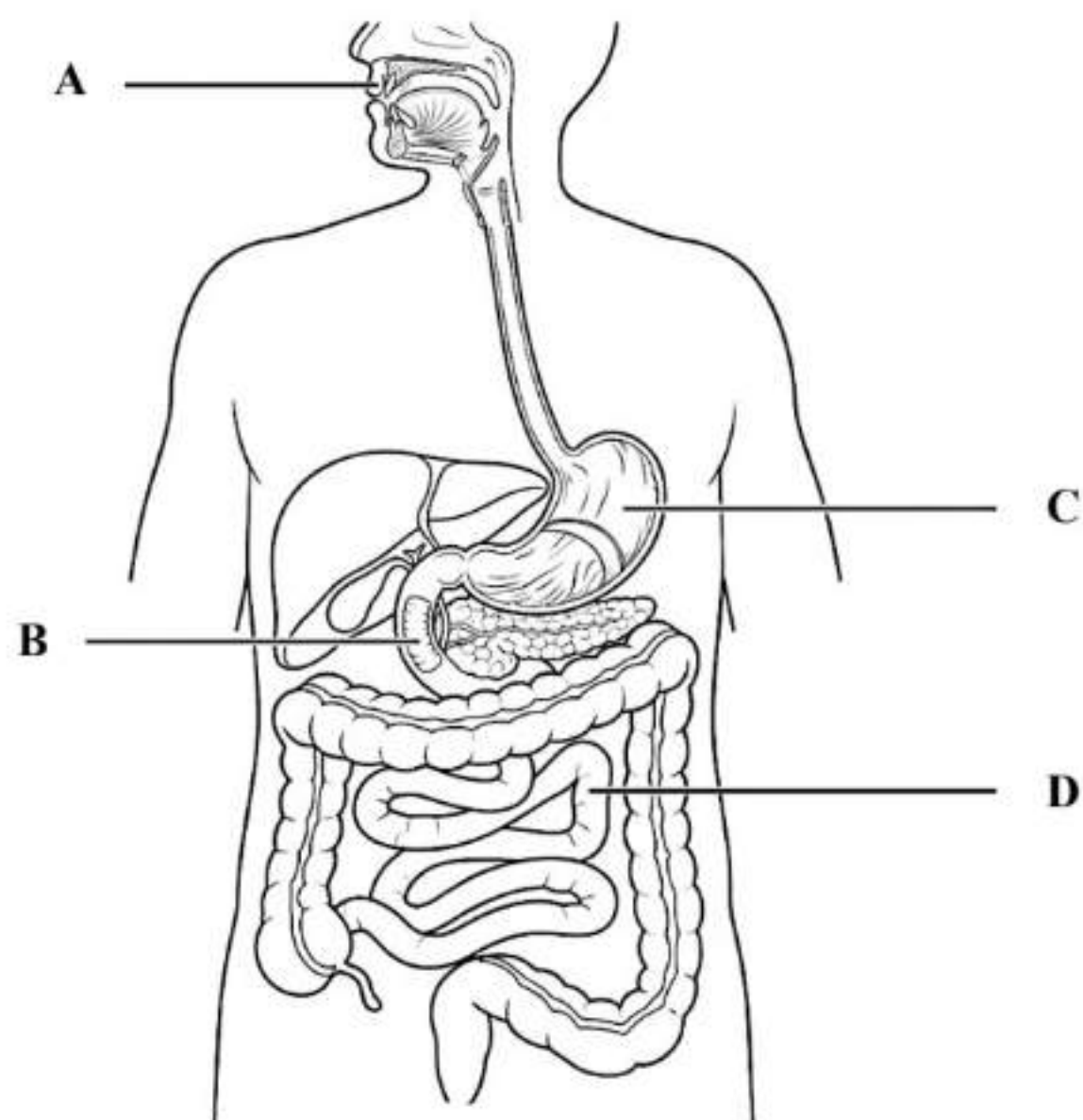
Rajah 6
Diagram 6

Apakah kombinasi enzim yang dihasilkan oleh organ tersebut?
Which combination of enzymes is produced by the organ?

- A Amilase, laktase, tripsin
Amylase, lactase, trypsin
- B Amilase, lipase, erepsin
Amylase, lipase, erepsin
- C Amilase, laktase, pepsin
Amylase, lactase, pepsin
- D Amilase, lipase, tripsin
Amylase, lipase, trypsin

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13. Rajah 7 menunjukkan sistem pencernaan manusia.
(R) *Diagram 7 shows the human digestive system.*

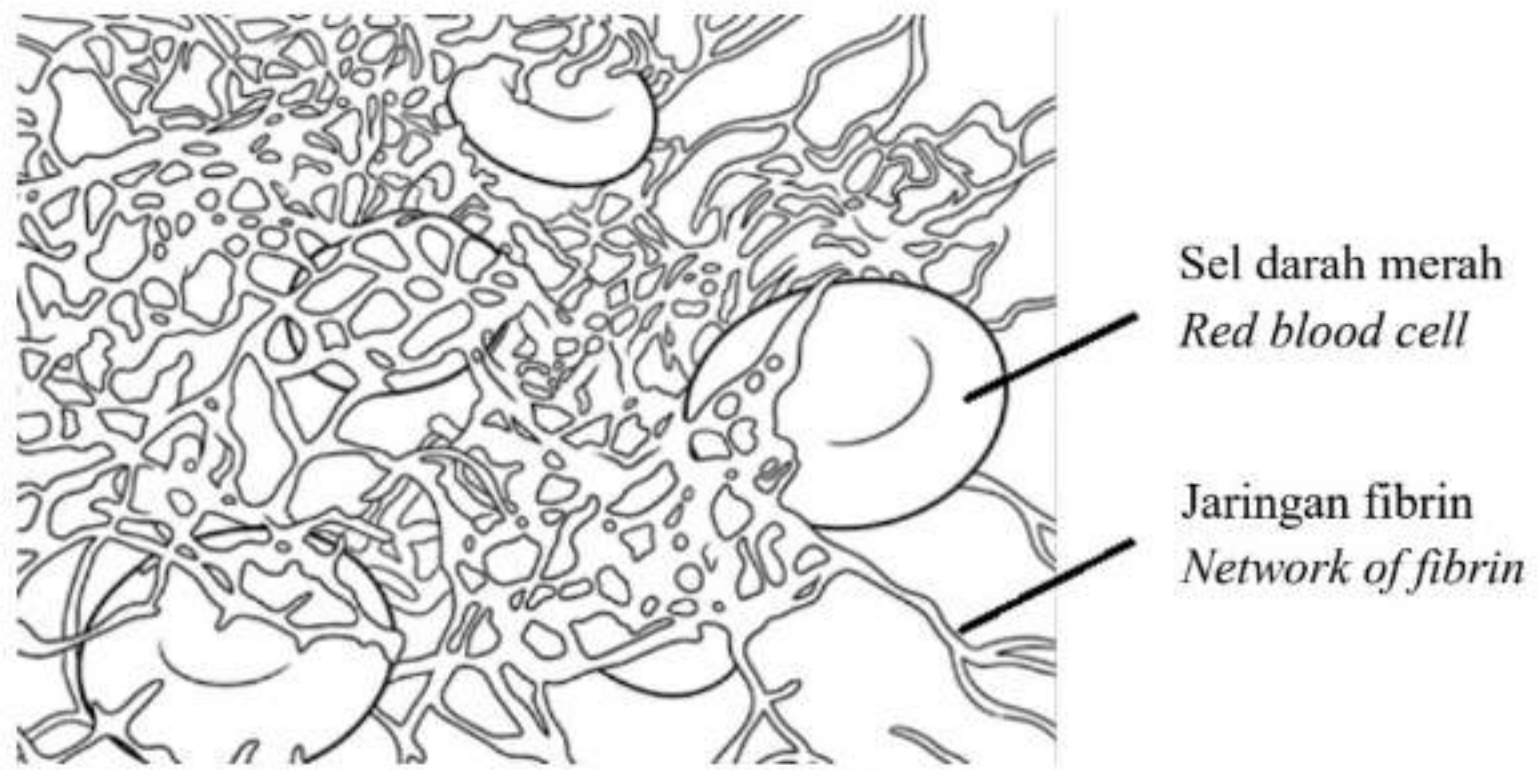


Rajah 7
Diagram 7

Antara bahagian berlabel A, B, C dan D, di manakah bermulanya proses pencernaan karbohidrat?

Which of the parts labelled A, B, C and D, is the site where carbohydrate digestion begins?

14. Rajah 8 menunjukkan pembentukan jaringan fibrin dalam mekanisme pembekuan darah.
(R) *Diagram 8 shows the formation of a network of fibrin in the blood clotting mechanism.*



Rajah 8
Diagram 8

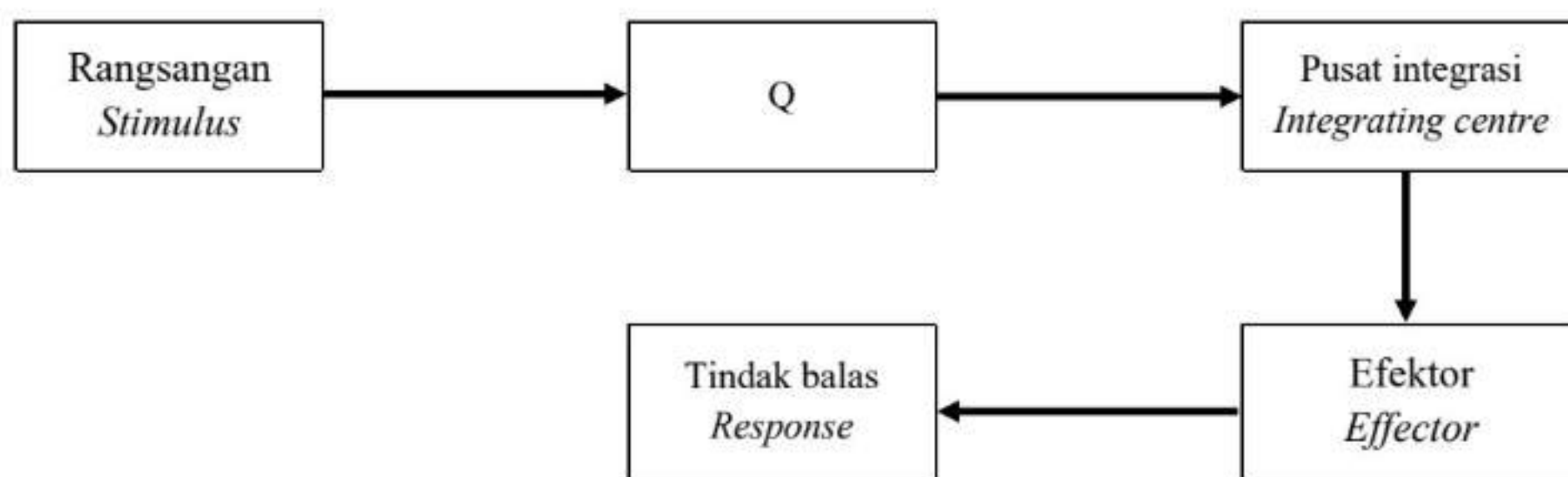
Antara yang berikut, pernyataan yang manakah menerangkan peringkat ini?
Which of the following statement explain this stage?

- A Platlet membebaskan jaringan fibrin
 Platelets release network of fibrin
- B Platlet merangsang pembentukan jaringan fibrin
 Platelets stimulate the formation of network of fibrin
- C Trombokinase menukarkan fibrinogen kepada fibrin
 Thrombokinase converts fibrinogen into fibrin
- D Trombin menukarkan fibrinogen kepada fibrin
 Thrombin converts fibrinogen into fibrin

15. Individu A tidak menerima dos ketiga vaksin hepatitis B.
(R) *Individual A did not receive the third dose of the hepatitis B vaccine.*

Apakah kesan terhadap tindak balas badannya apabila dijangkiti virus hepatitis B?
What is the effect on the body's response if infected with the hepatitis B virus?

- A** Antibodi mencukupi terbentuk serta-merta
Sufficient antibodies are formed immediately
- B** Virus akan mati tanpa tindak balas sistem imun
The virus will be destroyed without any immune response
- C** Pertahanan badan tidak bergantung pada antibodi
Body defense does not rely on antibodies
- D** Badan tidak mempunyai antibodi mencukupi untuk melawan virus
Antibody levels insufficient to fight the virus
16. Rajah 9 menunjukkan komponen utama dan laluan yang terlibat dalam mengesan dan bergerak balas terhadap perubahan persekitaran luar.
(S) *Diagram 9 shows the main components and pathways involved in detecting and responding to changes in the external environment.*

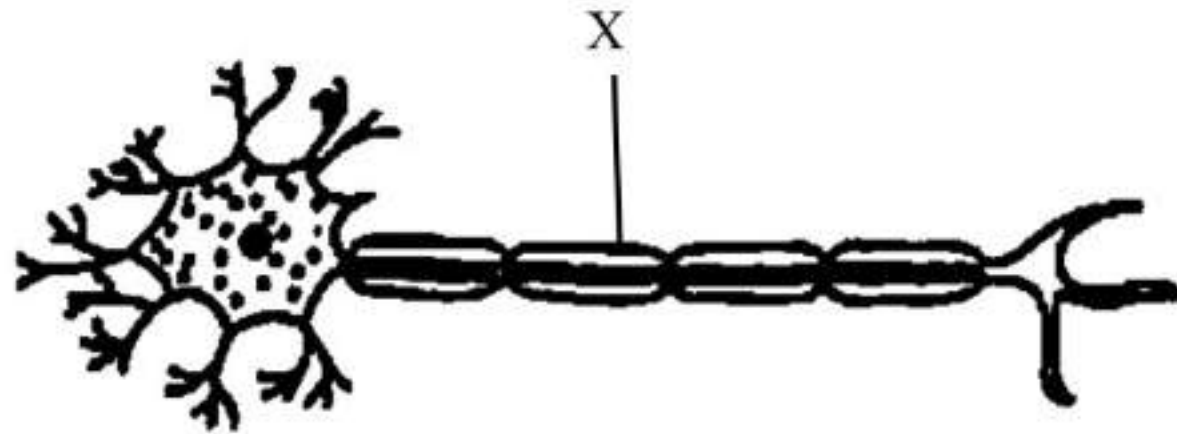


Rajah 9
Diagram 9

Apakah Q?
What is Q?

- A** Otak
Brain
- B** Reseptor
Receptor
- C** Efektor
Effector
- D** Afektor
Affector

17. Rajah 10 menunjukkan struktur neuron.
(S) *Diagram 10 shows a structure of neurone.*



Rajah 10
Diagram 10

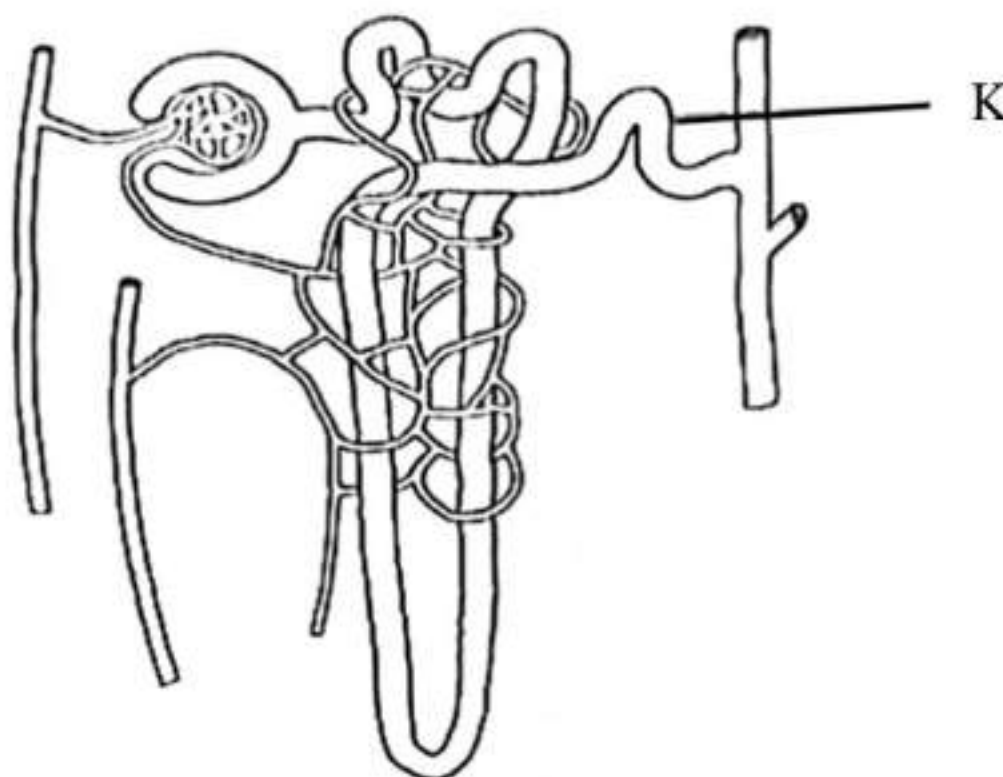
Apakah fungsi bahagian neuron yang berlabel X?
What is the function of the part of the neuron that is labelled by X?

- A Melindungi neuron daripada kecederaan
Protects neurons from injury
- B Menghantar impuls menjauhi badan sel
Transmits impulses away from the cell body
- C Mempercepatkan penghantaran impuls saraf
Speeds up the transmission of nerve impulses
- D Menghubungkan neuron deria dengan neuron motor
Connects sensory neurons to motor neurons

18. (T) Seorang penoreh getah berhadapan dengan seekor harimau di ladangnya. Apakah tindak balas yang berlaku dalam badannya untuk menghadapi situasi yang menakutkan ini?
A rubber tapper encounters a tiger in his plantation. What are physiological responses of his body to face this frightening situation?
- I Kadar denyutan jantung menurun
Heart rate decreases
 - II Rembesan adrenalin bertambah
Adrenaline secretion increases
 - III Rembesan tiroksina menurun
Thyroxine secretion decreases
 - IV Kadar respirasi bertambah
Respiration rate increases
- A I dan II sahaja
I and II only
- B II dan III sahaja
II and III only
- C II dan IV sahaja
II and IV only
- D III dan IV sahaja
III and IV only

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19. Rajah 11 menunjukkan struktur nefron.
(S) *Diagram 11 shows the structure of nephron.*



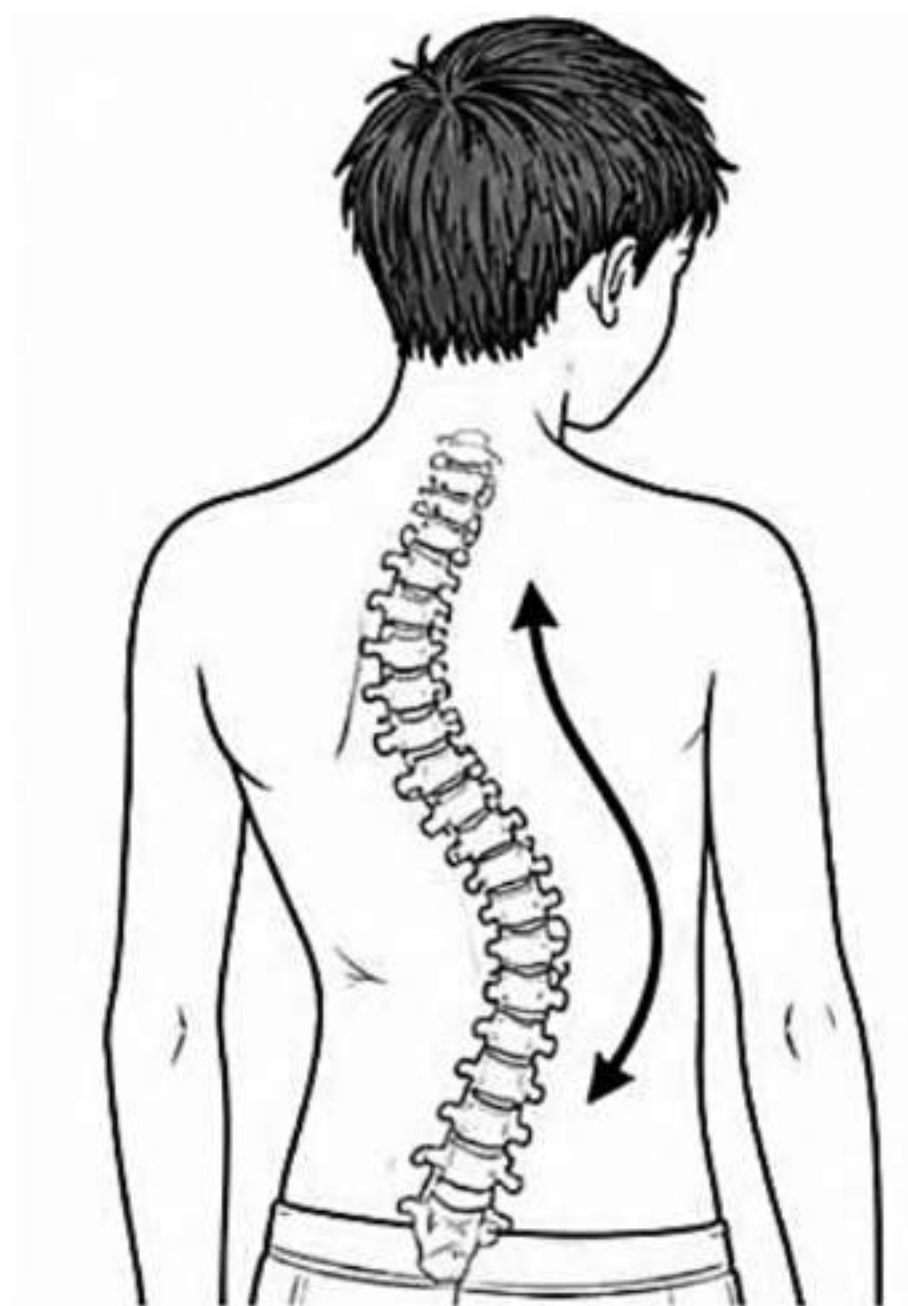
Rajah 11
Diagram 11

Antara berikut, yang manakah menyebabkan bahagian berlabel K kurang telap terhadap air?
Which of the following activities causes structure labelled K to be less permeable towards water?

- | | |
|---|--|
| P | Membaca
<i>Reading</i> |
| Q | Melakukan latihan fizikal
<i>Do physical exercises</i> |
| R | Makan makanan yang masin
<i>Eating salty food</i> |
| S | Minum air kosong dengan banyak
<i>Drinking a lot of plain water</i> |

- A P dan Q
P and Q
B P dan S
P and S
C Q dan R
Q and R
D Q dan S
Q and S

20. Rajah 12 menunjukkan seorang murid lelaki berumur 14 tahun yang mengalami masalah pada tulang belakangnya. Doktor mengesahkan keadaan tersebut masih pada peringkat awal.
(R) *Diagram 12 shows a 14-year-old student boy experiencing problems with his spine. The doctor confirmed that the condition is still in its early stages.*



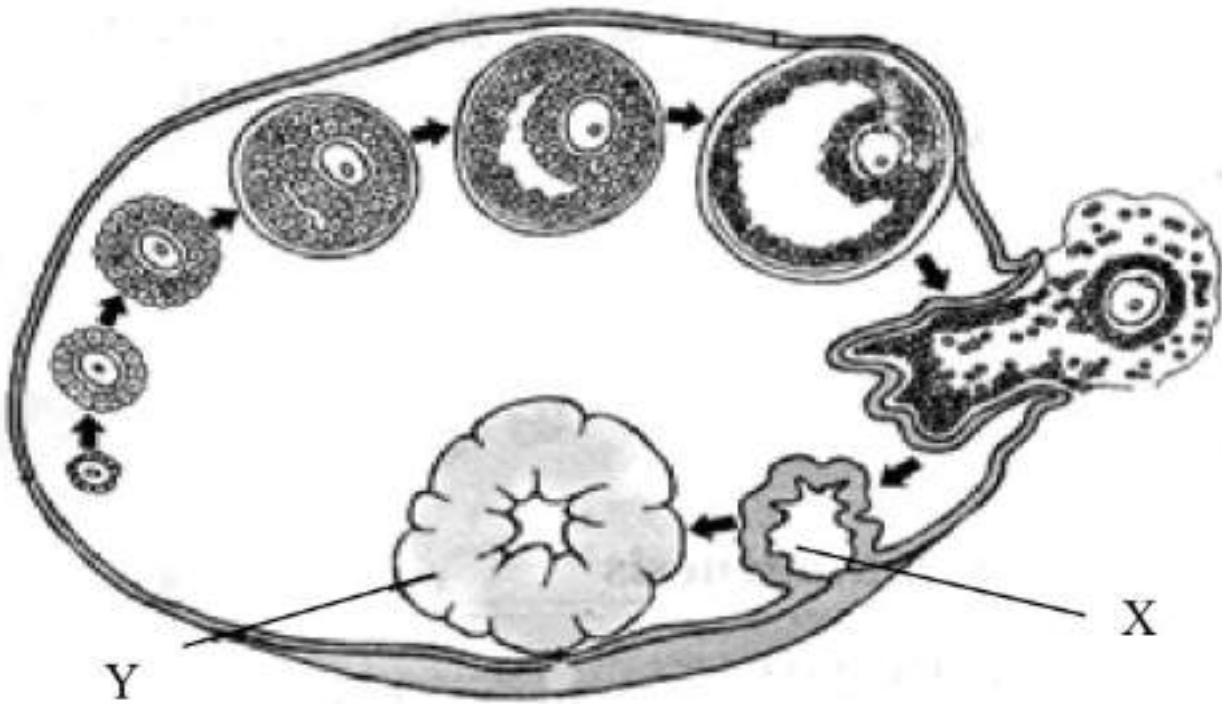
Rajah 12
Diagram 12

Apakah langkah yang paling sesuai untuk membantu mengawal perkembangan keadaan ini?
What are the most appropriate measures to help control the development of this condition?

- A Mengambil makanan tinggi kalsium setiap hari
Consume foods high in calcium every day
- B Memakai pendakap belakang secara konsisten
Wearing a back brace consistently
- C Mengelakkan semua aktiviti fizikal
Avoiding all physical activity
- D Menjalani pembedahan tulang belakang dengan segera
Undergoing spinal surgery immediately

21. Rajah 13 menunjukkan peringkat perkembangan folikel di dalam ovari manusia. X berkembang menjadi Y.

Diagram 13 shows the stages in the development of follicle in the ovary of human. X develops into Y.



Rajah 13
Diagram 13

Antara berikut, yang manakah perubahan aras hormon di dalam darah?
Which of the following are the changes of the hormonal levels in the blood?

	Progesteron <i>Progesterone</i>	Hormon Perangsang Folikel (FSH) <i>Folicle Stimulating Hormone (FSH)</i>
A	Meningkat <i>Increases</i>	Meningkat <i>Increases</i>
B	Menurun <i>Decreases</i>	Meningkat <i>Increases</i>
C	Meningkat <i>Increases</i>	Menurun <i>Decreases</i>
D	Menurun <i>Decreases</i>	Menurun <i>Decreases</i>

22. Rajah 14 menunjukkan seekor lembu sedang meragut rumput.
(T) *Diagram 14 shows a cow grazing on grass.*

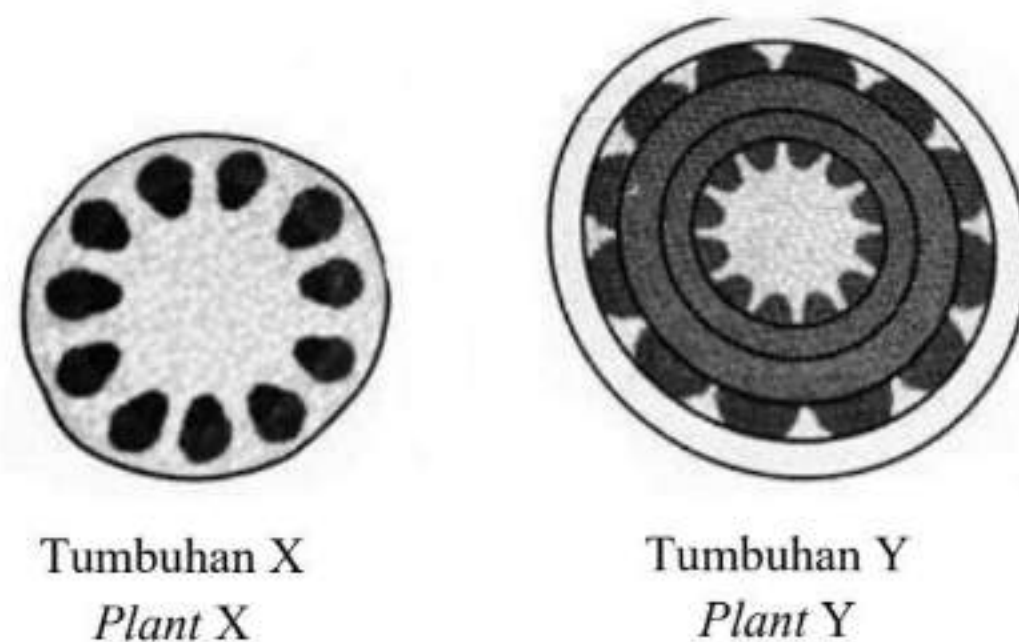


Rajah 14
Diagram 14

Bahagian rumput yang diragut oleh lembu biasanya akan tumbuh semula.
Yang manakah pernyataan **BENAR** menerangkan fenomena ini?
Parts of grass which have been grazed by cow will usually grow back.
*Which statement is **TRUE** explaining this phenomenon?*

- A Rumput mempunyai sel muda yang aktif membahagi untuk menghasilkan tisu baharu
Grass has young cells that actively divide to produce new tissues
- B Rumput mempunyai meristem lateral yang menyebabkan pertambahan diameter batang
Grass has lateral meristem that increases the stem diameter
- C Rumput mempunyai tisu matang yang tidak lagi menjalani pembahagian sel
Grass has mature tissues that no longer undergo cell division
- D Rumput menjalankan fotosintesis dengan lebih cepat untuk menggantikan bahagian yang hilang
Grass carries out photosynthesis faster to replace the lost part

23. Rajah 15 menunjukkan keratan rentas bagi batang daripada tumbuhan X dan Y.
(T) *Diagram 15 shows a cross section of the stems from plants X and Y.*



Rajah 15
Diagram 15

Seorang usahawan ingin memilih tumbuhan yang bersesuaian untuk dijadikan perabot.
Antara berikut yang manakah tumbuhan yang paling sesuai?

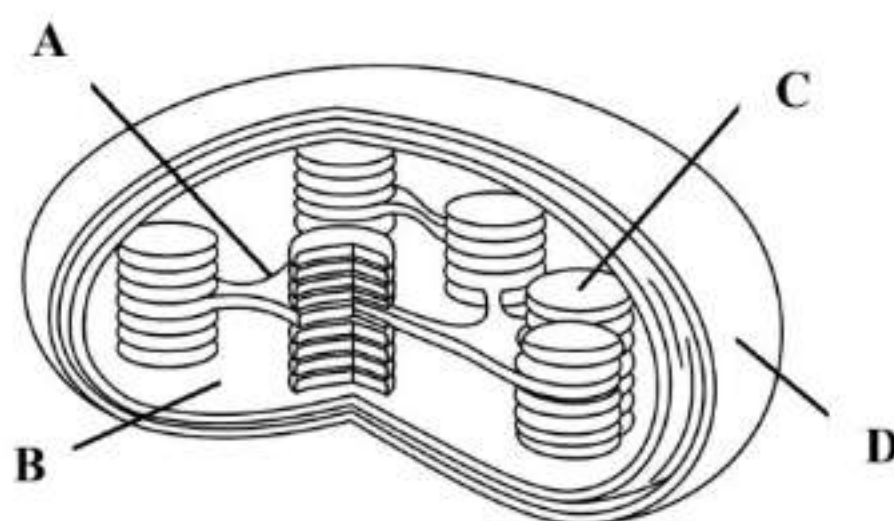
An entrepreneur wants to choose suitable plants to use as furniture.

Which of the following plants is the most suitable?

- A** Tumbuhan Y kerana Y mengalami pertumbuhan sekunder dan mempunyai batang yang lebih keras.
Plant Y because Y undergoes secondary growth and has a harder stem.
- B** Tumbuhan X kerana X mengalami pertumbuhan sekunder dan mempunyai batang yang lebih keras.
Plant X because X undergoes secondary growth and has a harder stem.
- C** Tumbuhan Y kerana Y mengalami pertumbuhan primer dan mempunyai batang yang lebih keras.
Plant Y because Y undergoes primary growth and has a harder stem.
- D** Tumbuhan X kerana X mengalami pertumbuhan primer dan mempunyai batang yang lebih keras.
Plant X because X undergoes primary growth and has a harder stem.

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24. Rajah 16 menunjukkan struktur satu kloroplas dalam sel tumbuhan.
(R) *Diagram 16 shows the structure of a chloroplast in a plant cell.*



Rajah 16
Diagram 16

Antara bahagian berlabel A, B, C dan D, yang manakah terlibat dalam tindak balas tidak bersandarkan cahaya?

Which part labelled A, B, C or D, involved in the light-independent reaction?

25. (T) Seorang pengusaha pertanian bandar ingin memaksimumkan hasil tanaman bayam di dalam sebuah kontena tertutup tanpa cahaya matahari.
An urban farmer intends to maximise the yield of spinach grown in a closed container without sunlight.

Antara berikut, tindakan manakah yang paling berkesan untuk memastikan kadar fotosintesis adalah pada tahap optimum?

Which of the following actions is the most effective to ensure the rate of photosynthesis is at an optimum level?

- A Menggunakan gabungan lampu LED merah dan biru kerana kedua-dua spektrum ini diserap secara maksimum oleh klorofil
Use a combination of red and blue LED lights because both spectra are maximally absorbed by chlorophyll
- B Menggunakan lampu LED kuning dan jingga kerana panjang gelombangnya paling hampir dengan cahaya matahari semula jadi
Use yellow and orange LED lights because their wavelengths are closest to natural sunlight.
- C Menggunakan lampu LED hijau yang terang supaya warna daun bayam kekal hijau dan segar
Use bright green LED light so that the spinach leaves remain green and fresh
- D Menggunakan lampu LED putih berkuasa tinggi untuk memastikan semua spektrum warna dipantulkan oleh permukaan daun
Use high-intensity white LED light to ensure all colour spectra are reflected by the leaf surface

26. Pernyataan di bawah menerangkan tentang kepentingan magnesium dalam tumbuhan.
(S) *The statement below explains the importance of magnesium in plants.*

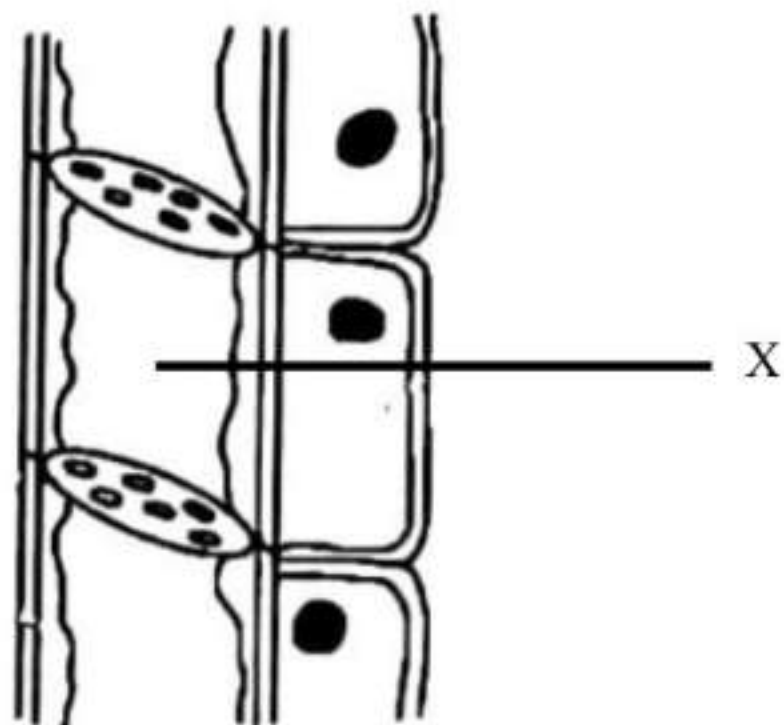
Magnesium adalah penting untuk sintesis klorofil dalam tumbuhan hijau.
Magnesium is essential for the synthesis of chlorophyll in green plants.

Antara pernyataan berikut, yang manakah **benar** mengenai kesan kekurangan magnesium dalam tumbuhan hijau?

*Which of the following statements is **true** regarding the effect of magnesium deficiency in green plant?*

- A Daun kelihatan kecil dan hijau tua
Leaves appearing small and dark green
- B Kematian hujung dan tepi daun
Death of leaf tips and edges
- C Kekuningan daun dengan kemunculan bintik-bintik
Yellowing of leaves with appearing of spots
- D Bentuk daun muda yang tidak sekata
Irregular shapes of young leaves

27. Rajah 17 menunjukkan sejenis tisu yang terlibat dalam proses pengangkutan.
(R) *Diagram 17 shows a tissue involved in the transportation process.*

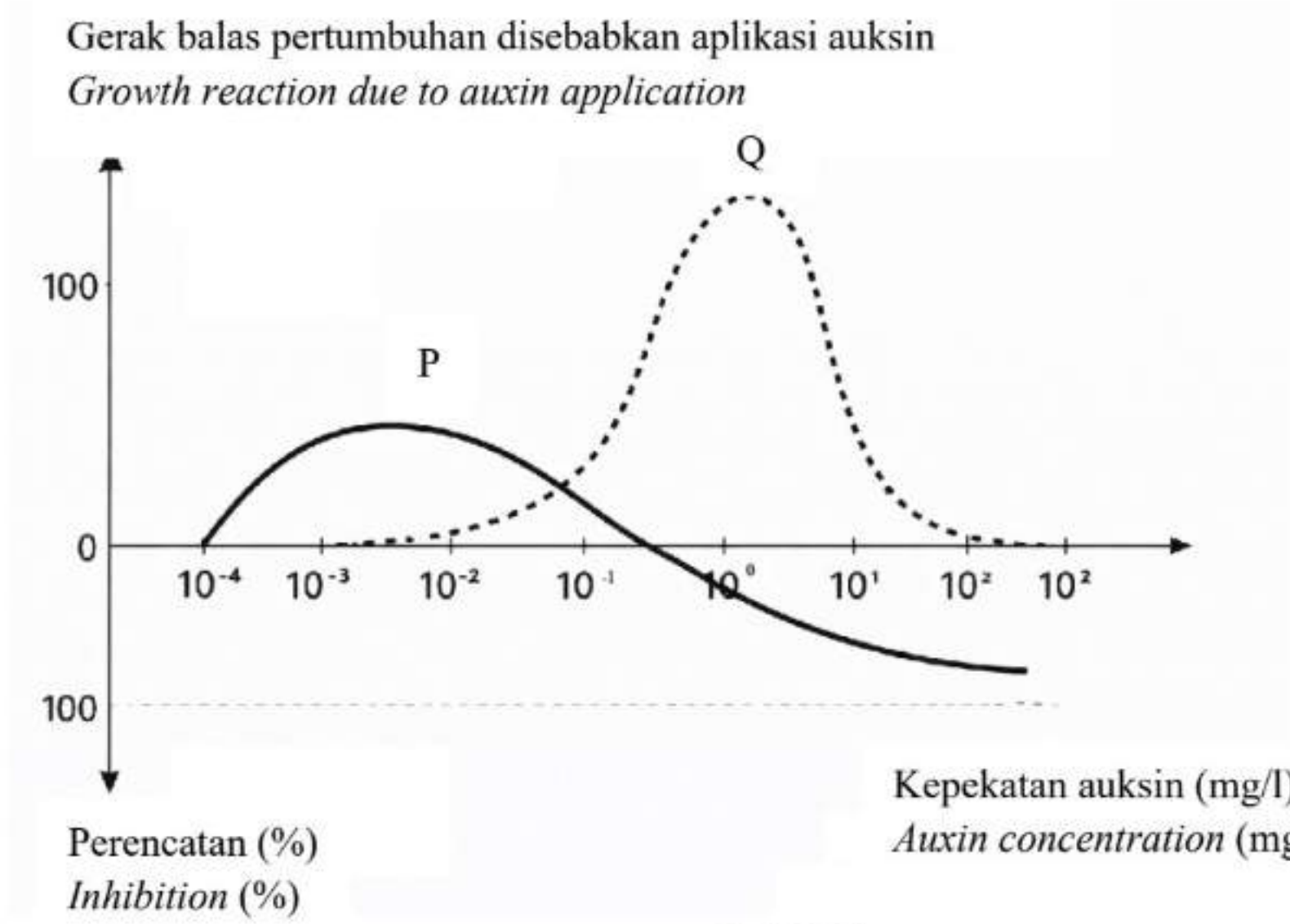


Rajah 17
Diagram 17

Apakah bahan yang diangkut oleh tisu X?
What substance is transported by tissue X?

- | | |
|--|------------------------------------|
| A Air
<i>Water</i> | C Sukrosa
<i>Sucrose</i> |
| B Garam mineral
<i>Mineral salts</i> | D Kanji
<i>Starch</i> |

28. Rajah 18 adalah graf yang menunjukkan kesan kepekatan auksin terhadap pertumbuhan bahagian (T) P dan bahagian Q tumbuhan.
Diagram 18 is a graph showing the effect of auxin concentration on the growth of part P and part Q of a plant.

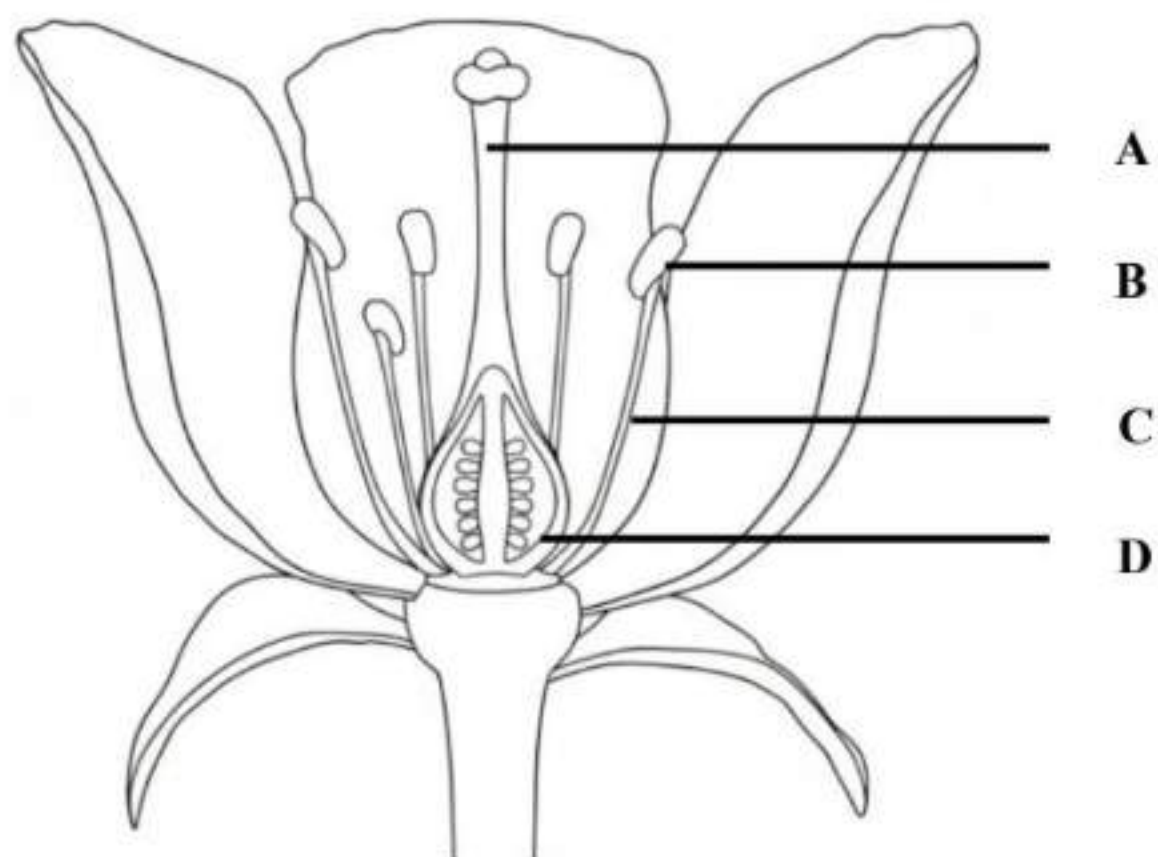


Rajah 18
Diagram 18

Jika kepekatan auksin berada pada julat 10⁻¹ mg/l, apakah kesannya ke atas pertumbuhan sel bahagian P dan Q?
If the auxin concentration is in the range of 10⁻¹ mg/l, what is the effect on the cell growth of part P and part Q?

	Bahagian P <i>Part P</i>	Bahagian Q <i>Part Q</i>
A	Merencat pertumbuhan sel <i>Inhibits cell growth</i>	Merencat pertumbuhan sel <i>Inhibits cell growth</i>
B	Merangsang pertumbuhan sel <i>Stimulates cell growth</i>	Merangsang pertumbuhan sel <i>Stimulates cell growth</i>
C	Merencat pertumbuhan sel <i>Inhibits cell growth</i>	Merangsang pertumbuhan sel <i>Stimulates cell growth</i>
D	Merangsang pertumbuhan sel <i>Stimulates cell growth</i>	Merencat pertumbuhan sel <i>Inhibits cell growth</i>

29. Rajah 19 menunjukkan struktur bunga.
(R) *Diagram 19 shows the structure of a flower.*

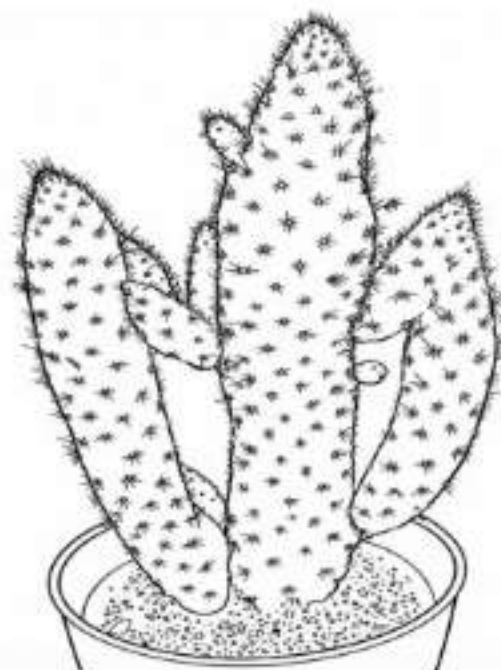


Rajah 19
Diagram 19

Antara **A**, **B**, **C** dan **D**, bahagian yang manakah berlakunya persenyawaan ganda dua?
*Which of the parts **A**, **B**, **C** or **D** does double fertilization occur?*

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30. Rajah 20 menunjukkan sejenis tumbuhan di suatu habitat.
(R) *Diagram 20 shows a plant in a habitat.*



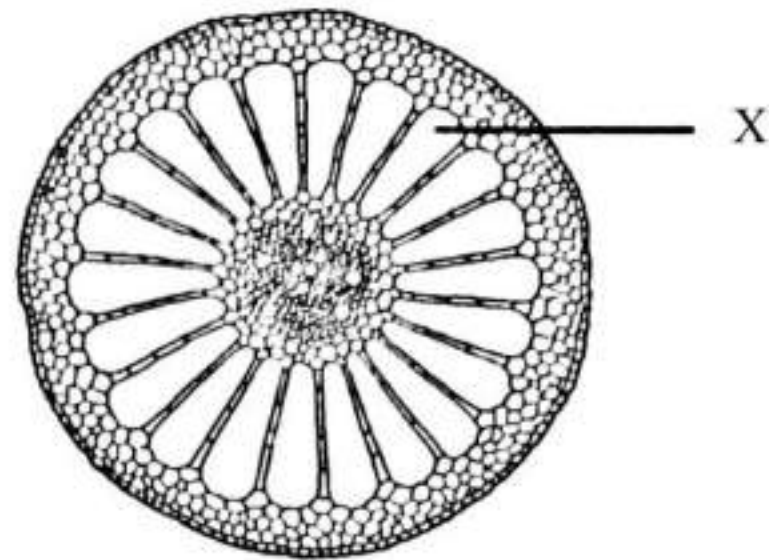
Rajah 21
Diagram 21

Namakan pengelasan bagi tumbuhan di atas.
Name the classification for the plants above.

- A** Mesofit
Mesophytes
B Halofit
Halophytes

- C** Hidrofit
Hydrophytes
D Xerofit
Xerophytes

31. Rajah 21 menunjukkan struktur X yang terdapat pada tumbuhan hidrofit.
(R) *Diagram 21 shows structure X in a hydrophyte plant.*



Rajah 21
Diagram 21

Apakah fungsi bagi struktur X?
What is the function for structure X?

- A** Mengurangkan kehilangan air melalui transpirasi
Reduce water loss through transpiration
- B** Membantu tumbuhan terapung di permukaan air
Help the plant to float on the water surface
- C** Menyerap garam mineral daripada tanah
Absorb mineral salts from the soil
- D** Mengangkut sukrosa ke seluruh bahagian tumbuhan
Transport sucrose to all parts of plants

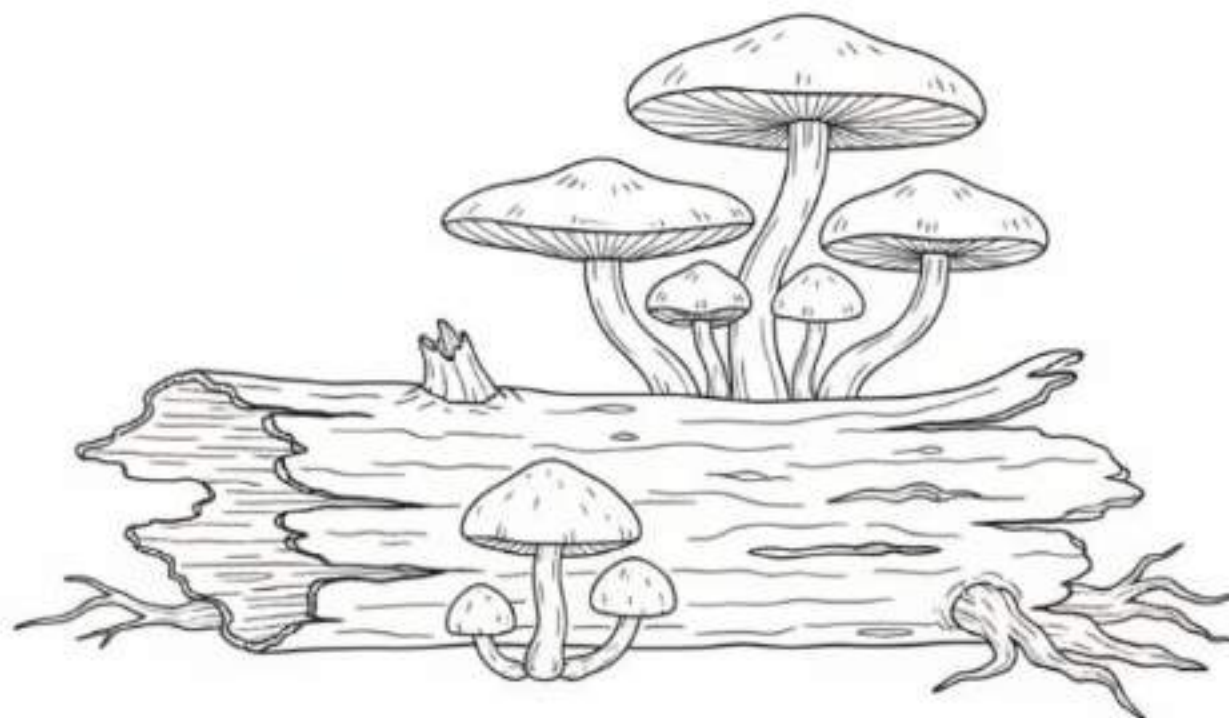
32. Maklumat berikut menunjukkan ciri-ciri sekumpulan organisma.
The following information shows the characteristics of a group of organisms.

- Organisma terdiri daripada satu sel
Organisms are unicellular
- Dinding sel mengandungi peptidoglikan
Cell wall contains peptidoglycan
- Mempunyai pelbagai bentuk seperti sfera, rod, koma dan berpilin
Have various shapes such as spherical, rod-shaped, comma-shaped and spiral-shaped

Berdasarkan pernyataan di atas, nyatakan alam bagi organisma tersebut?
Based on the above information, state the kingdom of these organisms?

- | | |
|---|---|
| <p>A Plantae
 <i>Plantae</i></p> <p>B Protista
 <i>Protista</i></p> | <p>C Fungi
 <i>Fungi</i></p> <p>D Eubacteria
 <i>Eubacteria</i></p> |
|---|---|
33. (S) Sebuah kawasan pertanian mengalami hujan lebat berterusan sehingga tanah menjadi berlumpur dan kurang oksigen. Berdasarkan situasi berikut, apakah kesan terhadap kitar nitrogen di kawasan tersebut?
An agricultural area experiences continuous heavy rains until the soil becomes muddy and lacks oxygen. Based on the following situation, what is the effect on the nitrogen cycle in the area?
- A** Kepekatan ion nitrat (NO_3^-) meningkat kerana kadar nitrifikasi bertambah
 The concentration of nitrate ions (NO_3^-) increases due to an increased rate of nitrification
- B** Kepekatan ion ammonium (NH_4^+) meningkat kerana aktiviti bakteria nitrifikasi berkurang
 The concentration of ammonium ions (NH_4^+) increases due to reduced activity of nitrifying bacteria
- C** Penyerapan nitrogen oleh tumbuhan meningkat kerana pendenitrifikasi terhenti
 Nitrogen absorption by plants increases because denitrification stops
- D** Kandungan nitrogen dalam tanah kekal tidak berubah kerana mikroorganisma tidak terjejas
 Nitrogen content in the soil remains unchanged because microorganisms are not affected

34. Rajah 22 menunjukkan interaksi di antara dua organisma.
(R) *Diagram 22 shows the interaction between two organisms.*

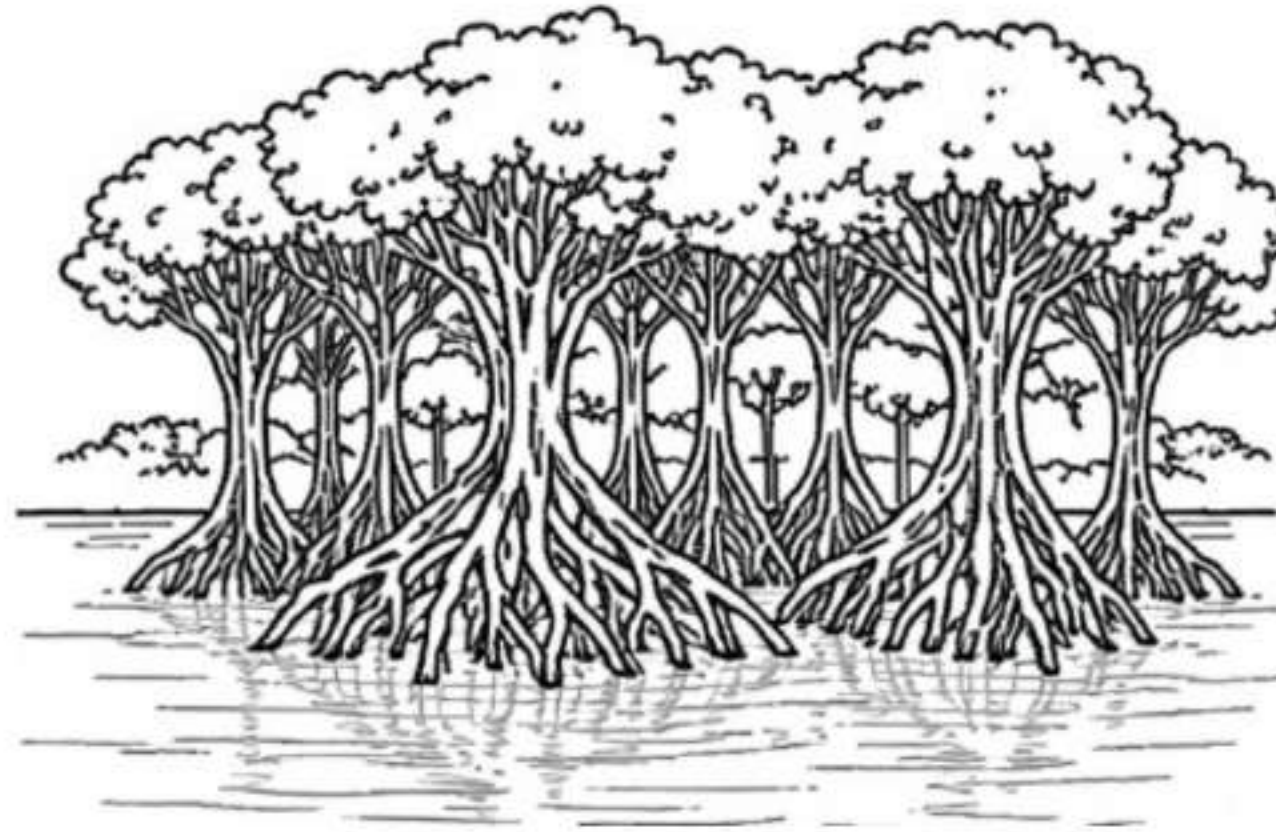


Rajah 22
Diagram 22

Apakah jenis interaksi di antara kedua-dua organisma ini?
What type of interaction between these two organisms?

- | | | | |
|----------|-------------------------------------|----------|--------------------------------------|
| A | Mutualisme
<i>Mutualism</i> | C | Saprophytisme
<i>Saprophytism</i> |
| B | Komensalisme
<i>Commensalism</i> | D | Parasitisme
<i>Parasitism</i> |

35. Rajah 23 menunjukkan sebuah ekosistem.
(S) *Diagram 23 shows an ecosystem.*



Rajah 23
Diagram 23

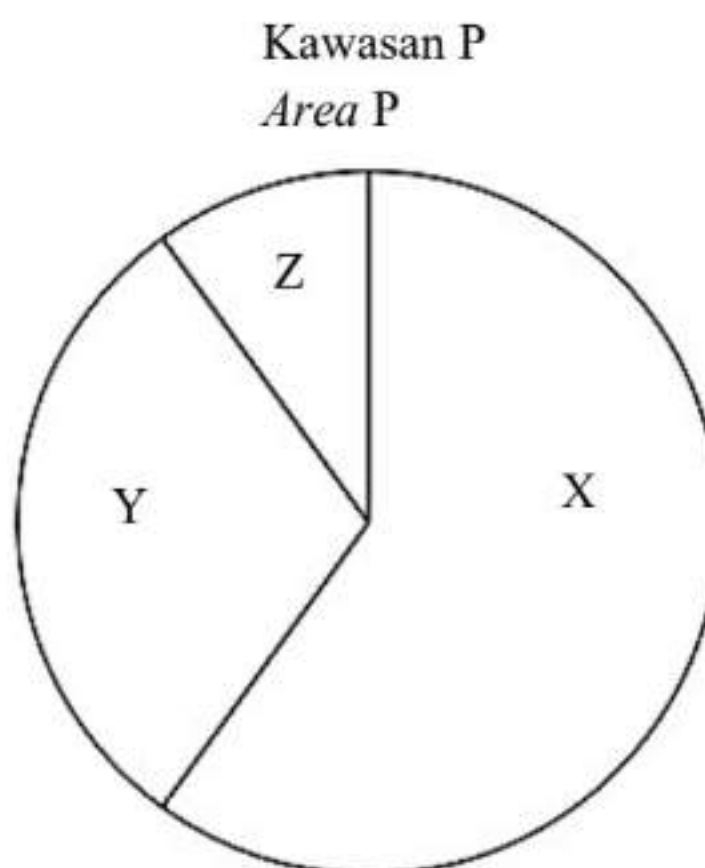
Apakah kepentingan utama mengekalkan ekosistem tersebut kepada masyarakat setempat?

What is the main importance of the ecosystem to the local community?

- A** Benteng semula jadi untuk melindungi pantai daripada hakisan ombak
Acts as a natural barrier that protects the coast from wave erosion
- B** Menjadi kawasan utama untuk kawasan perindustrian kayu arang
Become a main area for charcoal industrial area
- C** Menggalakkan aktiviti pembalakan untuk tujuan pertanian
Encourages logging activities for agricultural purposes
- D** Meningkatkan suhu mikro di kawasan pesisir pantai
Increases the micro temperature in coastal areas

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36. Rajah di bawah menunjukkan carta pai bagi pembahagian antara tiga aktiviti manusia X, Y dan Z yang menyebabkan pencemaran udara di kawasan P.
(R) *The diagram below shows a pie chart for the distribution between three human activities X, Y and Z that cause air pollution in area P.*

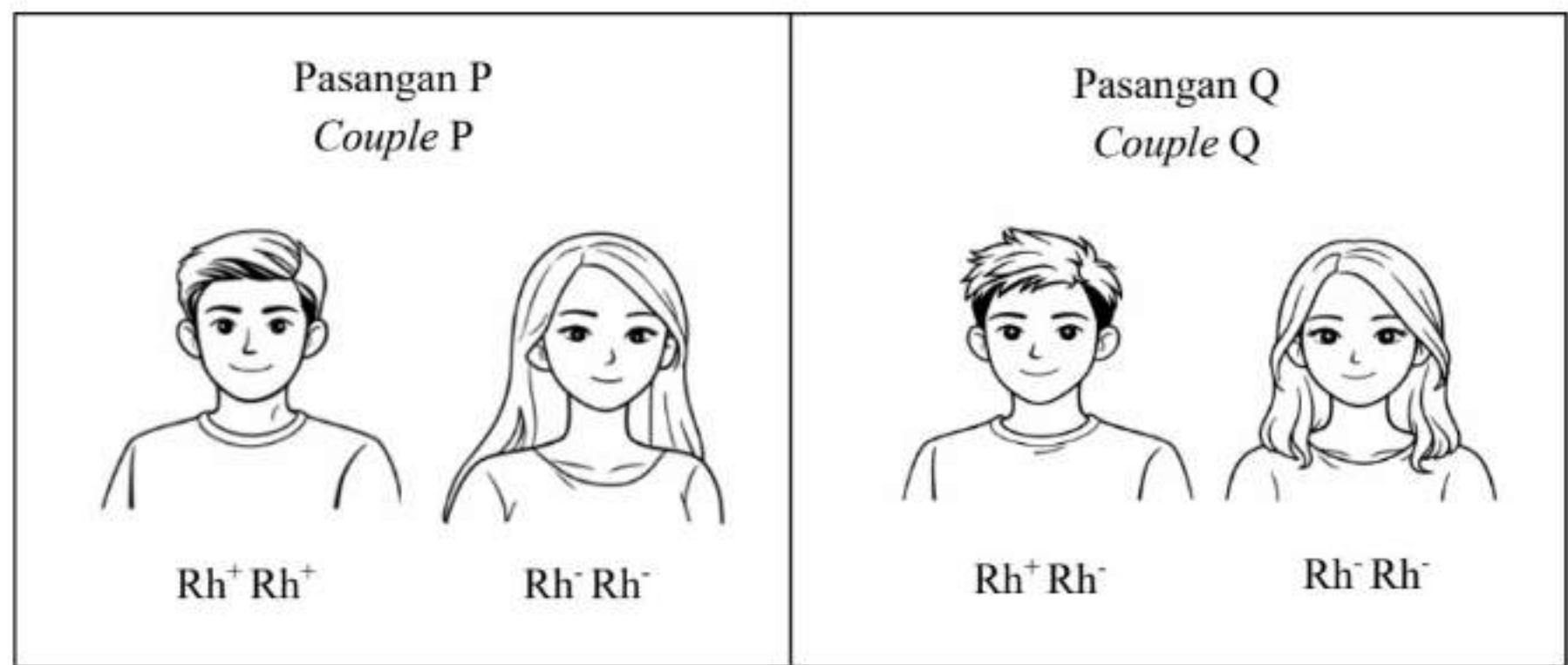


Rajah 24
Diagram 24

Antara yang berikut, yang manakah **betul** kemungkinan bagi aktiviti X.
*Which of the following is **true** about the activity X.*

- A Pembuangan sisa domestik
Domestic waste disposal
- B Peladangan
Plantation
- C Stesen jana kuasa nuklear
Nuclear power station
- D Penggunaan kenderaan bermotor
Usage of motor vehicles

37.
- (R)
- Rajah 25 menunjukkan dua pasangan berkahwin yang mempunyai kombinasi genotip faktor Rhesus yang berbeza.
Diagram 25 shows two married couples with different combinations of Rhesus factor genotypes.



Rajah 25
Diagram 25

Apakah kebarangkalian pasangan P dan Q untuk mendapat anak Rhesus positif?
What is the probability for couples P and Q to have a Rhesus positive child?

	Pasangan P <i>Couple P</i>	Pasangan Q <i>Couple Q</i>
A	100%	50%
B	50%	100%
C	0%	50%
D	50%	0%

38. Rajah 26 menunjukkan ciri berbeza pada manusia.
(R) *Diagram 26 shows different characteristics in human.*

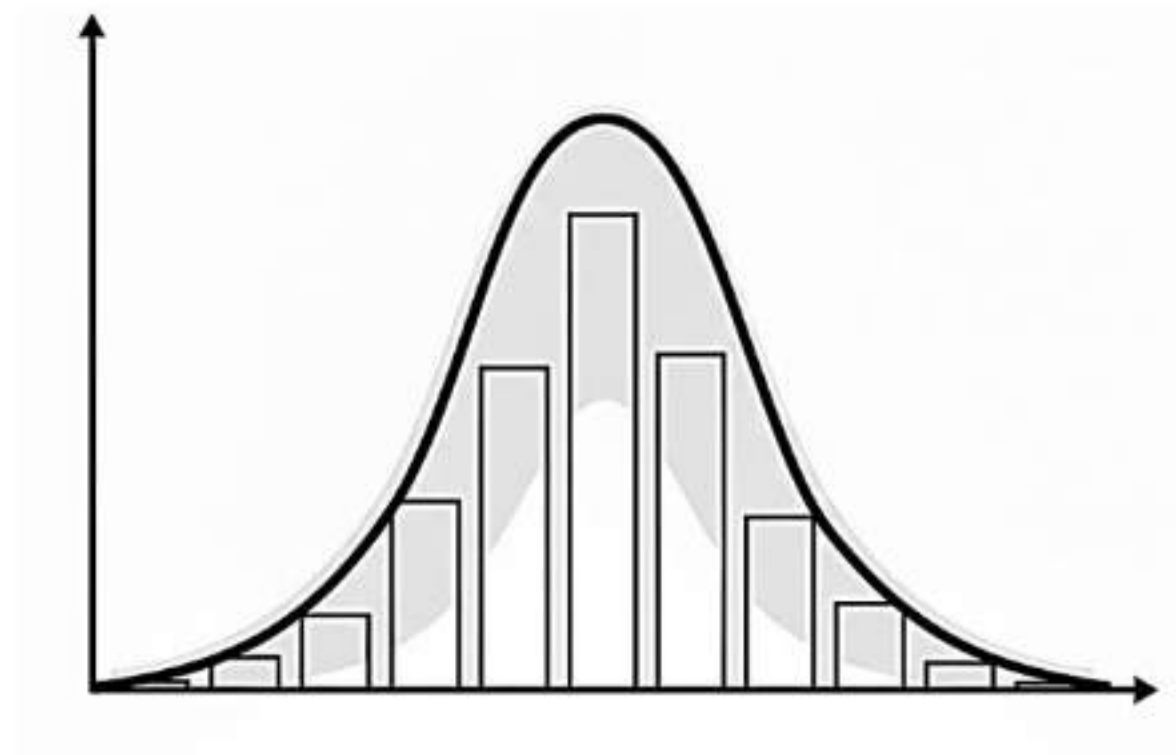


Rajah 26
Diagram 26

Apakah faktor yang menyebabkan variasi dalam Rajah 26?
Which factor that cause the variation in Diagram 26?

- A persekitaran
environment
- B cahaya
light
- C genetik
genetic

39. Rajah 27 menunjukkan graf bagi satu jenis variasi pada manusia.
(S) *Diagram 27 shows graph of one type of variation in humans.*



Rajah 27
Diagram 27

Antara berikut, yang manakah merupakan ciri bagi variasi tersebut?
Which of the following characteristics for the type of variation?

- A** Warna kulit
Skin colour
- B** Kumpulan darah
Blood groups
- C** Kehadiran lesung pipit
Presence of dimples
- D** Keupayaan untuk menggulung lidah
Ability to roll tongue

40. Apakah yang dipindahkan dari satu organisma ke satu organisma yang lain dalam proses (S) kejuruteraan genetik?

What is being transferred from one organism to another in the process of genetic engineering?

- A Protein
Protein
- B Lemak
Fat
- C DNA
DNA
- D Enzim
Enzymes

KERTAS SOALAN TAMAT
END OF QUESTION PAPER

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