

SULIT

4551/1

NO. KAD PENGENALAN

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ANGKA GILIRAN

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**PEPERIKSAAN PERCUBAAN
NEGERI PERAK**

**PEPERIKSAAN PERNILAIAN BERSAMA
SIJIL PELAJARAN MALAYSIA 2008**

4551/1

BIOLOGY

Kertas 1

September

$1\frac{1}{4}$ jam

Satu jam lima belas minit

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU

1. Kertas soalan ini adalah dalam dwibahasa.
2. Soalan dalam Bahasa Inggeris mendahului soalan yang sepadan dalam Bahasa Melayu.
3. Calon dikehendaki membaca maklumat di halaman muka surat 31.

Kertas soalan ini mengandungi 31 halaman bercetak dan 1 halaman tidak bercetak.

- 1 Diagram 1 shows an organelle found in animal cell.
Rajah 1 menunjukkan satu organel yang terdapat dalam sel haiwan.



Diagram 1
Rajah 1

Name the organelle.
Namakan organel ini.

- A. Centriole
Sentriol
- B. Chloroplast
Kloroplas
- C. Mitochondrion
Mitokondrion
- D. Golgi apparatus
Alat Golgi
- 2 Table 1 shows the components of a cell.
Jadual 1 menunjukkan komponen-komponen sel.

M : Plasma membrane <i>Membran plasma</i>	N : Cell wall <i>Dinding sel</i>
O : Nucleus <i>Nukleus</i>	P : Cytoplasm <i>Sitoplasma</i>
Q : Chloroplast <i>Kloroplas</i>	

Table 1
Jadual 1

Which of the components are found in both animal and plant cell?
Komponen-komponen yang manakah terdapat pada kedua-dua sel haiwan dan sel tumbuhan?

- A. M, N and P
M, N dan P
- B. M, O and P
M, O dan P
- C. N, O and Q
N, O dan Q
- D. O, P and Q
O, P dan Q

- 3 Diagram 2 shows a type of muscle tissue in human body. Which of the following organs, can the tissue be found?
Rajah 2 menunjukkan sejenis tisu otot pada badan manusia. Di manakah tisu ini didapati?

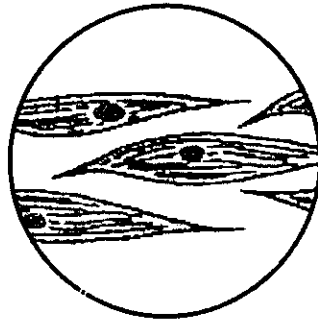


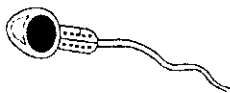
Diagram 2
Rajah 2

- A. Pancreas
Pankreas
- B. Lungs
Peparu
- C. Heart
Jantung
- D. Small intestine
Usus kecil

- 4 Diagram 3 shows several types of cells in the human body.
Rajah 3 menunjukkan beberapa jenis sel dalam badan manusia.



Cell R
Sel R



Cell S
Sel S



Cell T
Sel T

Diagram 3
Rajah 3

Match the cells with the correct systems.
Padankan sel-sel tersebut dengan sistem yang betul.

	Cell R <i>Sel R</i>	Cell S <i>Sel S</i>	Cell T <i>Sel T</i>
A.	Reproductive system <i>Sistem pembiakan</i>	Circulatory system <i>Sistem peredaran</i>	Nervous system <i>Sistem saraf</i>
B.	Circulatory system <i>Sistem peredaran</i>	Nervous system <i>Sistem saraf</i>	Reproductive system <i>Sistem pembiakan</i>
C.	Nervous system <i>Sistem saraf</i>	Reproductive system <i>Sistem pembiakan</i>	Circulatory system <i>Sistem peredaran</i>
D.	Circulatory system <i>Sistem peredaran</i>	Reproductive system <i>Sistem pembiakan</i>	Nervous system <i>Sistem saraf</i>

- 5 Diagram 4 shows the movement of substance, labelled M across the plasma membrane.
Rajah 4 menunjukkan pergerakan bahan berlabel M merentasi membran plasma.

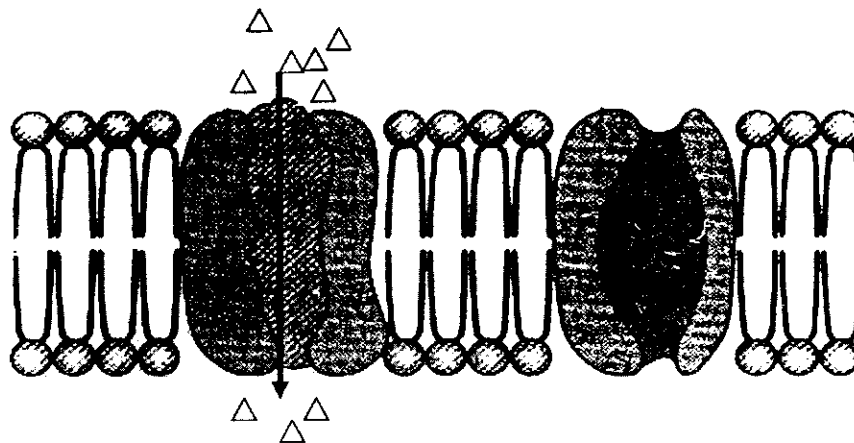


Diagram 4
Rajah 4

What is M?
Apakah M?

- A. Lipids
Lipid
 - B. Glucose
Glukosa
 - C. Sodium ions
Ion natrium
 - D. Vitamins
Vitamin
- 6 Diagram 5 shows the appearance of a plant cell that has been immersed in the sucrose solution.
Rajah 5 menunjukkan keadaan sel tumbuhan yang telah direndam di dalam larutan sukrosa .

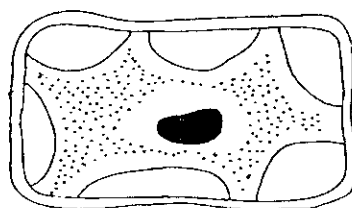


Diagram 5
Rajah 5

Name the process undergone by the cell in Diagram 5.

Namakan proses yang telah dialami oleh sel tumbuhan tersebut.

- A. Lysis
Lisis
- B. Haemolysis
Hemolisis
- C. Plasmolysis
Plasmolisis
- D. Crenation
Krenasi

- 7 Diagram 6 shows the process of making salted egg.
Rajah 6 menunjukkan proses membuat telur masin.

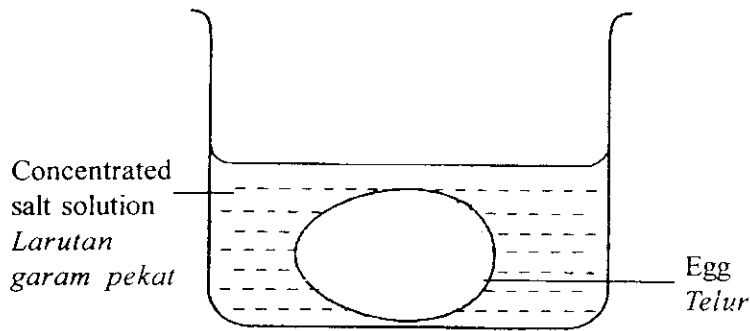


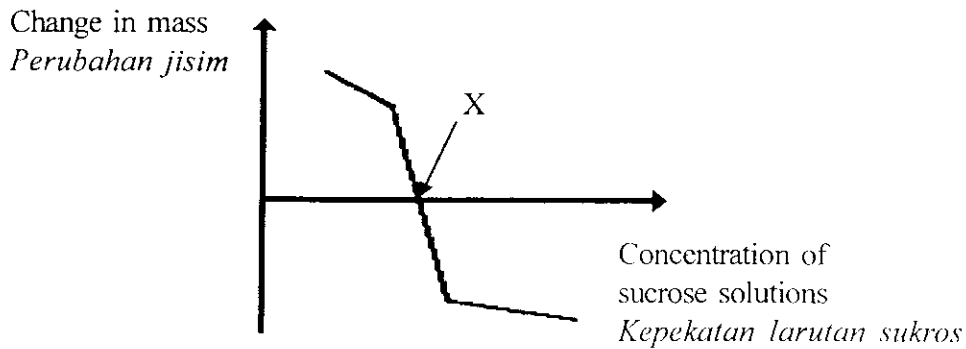
Diagram 6
Rajah 6

Which of the following statements explain the phenomenon that happened to the egg after being immersed in saturated salt solution for 20 minutes?

Pernyataan manakah menerangkan fenomena yang berlaku kepada telur yang telah direndam dalam larutan garam pekat selama 20 minit?

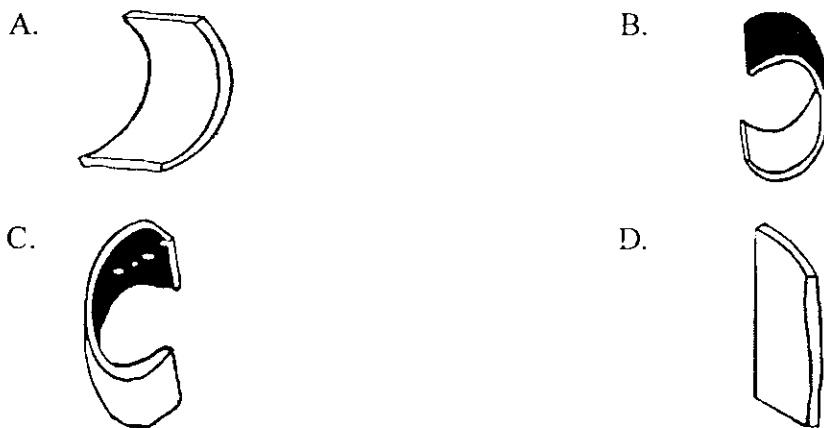
- I. Salt particles diffuse into the egg.
Zarah-zarah garam meresap ke dalam telur.
 - II. Concentrated salt solution is hypertonic to the cytoplasm.
Larutan garam pekat adalah hipertonik terhadap sitoplasma.
 - III. Salt particles enter the egg by active transport.
Zarah-zarah garam memasuki telur melalui pengangkutan aktif.
 - IV. The egg shell and membrane are permeable to salt particles.
Cangkerang telur dan membran adalah telap kepada zarah-zarah garam
- A. I and IV only
I dan IV sahaja
 - B. I, II and III only
I, II dan III sahaja
 - C. II, III and IV only
II, III dan IV sahaja
 - D. I, II and IV only
I, II dan IV sahaja

- 8 Graph 1 shows the change in mass for the strips of spinach stems which have been soaked for 30 minutes in different concentrations of sucrose solutions.
Graf 1 menunjukkan perubahan berat jalur batang bayam yang telah direndam selama 30 minit di dalam larutan sukrosa yang berbeza kepekatan.

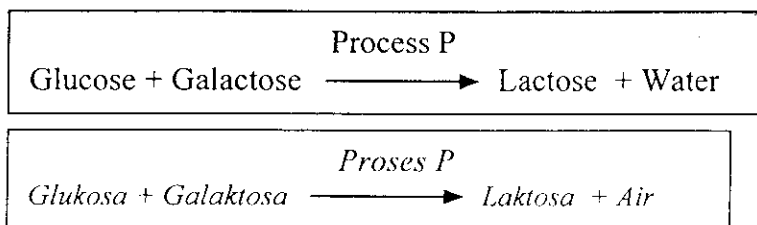


Graph 1
Graf 1

Which of the diagram reflects the condition of the strip at point X?
Rajah yang manakah menggambarkan keadaan jalur di titik X?



- 9 The following equation shows the process that takes place in animal cell.
Persamaan berikut menunjukkan proses yang berlaku dalam sel haiwan.



Name process P.
Namakan proses P.

- A. Hydration
Penghidratan
- B. Hydrolysis
Hidrolisis
- C. Condensation
Kondensasi
- D. Oxidation
Pengoksidanan

- 10 Diagram 7 shows the mechanism of an enzyme reaction.
Rajah 7 menunjukkan mekanisma tindakan enzim.

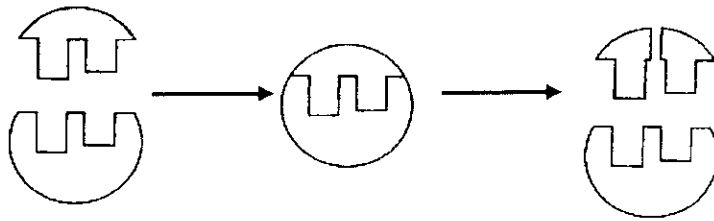
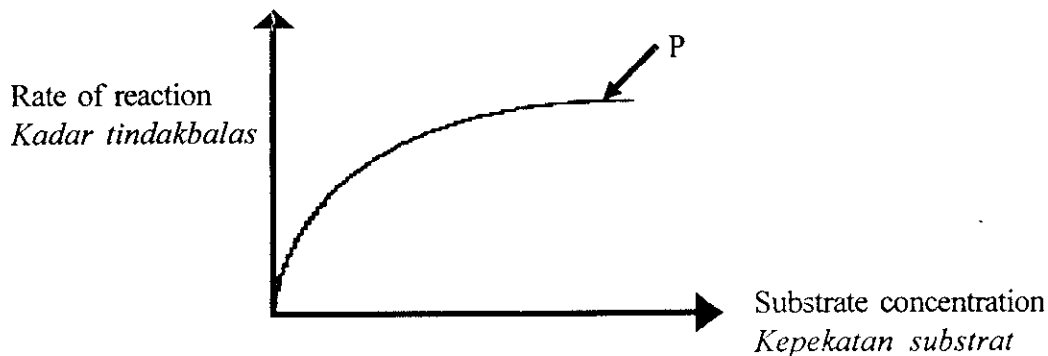


Diagram 7
Rajah 7

What is the characteristic of the enzyme as shown in Diagram 7?
Apakah ciri enzim yang ditunjukkan dalam Rajah 7?

- A. Enzyme is denatured at the end of the reaction.
Enzim musnah di akhir tindak balas.
- B. Enzyme reaction is affected by temperature.
Tindakan enzim dipengaruhi oleh suhu.
- C. Enzyme speed up the chemical reaction.
Enzim mempercepatkan tindakbalas kimia.
- D. Enzyme reaction is very specific.
Tindakan enzim adalah spesifik.
- 11 Graph 2 shows the rate of enzyme reaction against the substrate concentration.
Graf 2 menunjukkan graf kadar tindak balas enzim melawan kepekatan substrat



Graph 2
Graf 2

Why does the rate of reaction become constant at P?
Mengapakah kadar tindakbalas menjadi malar pada P?

- A. The presence of an inhibitor.
Kehadiran perencat.
- B. The reaction has stopped.
Tindakbalas telah berhenti.
- C. The product inhibits the reaction process.
Hasil tindak balas merencatkan proses tindakbalas.
- D. The reaction is limited by the enzyme concentration.
tindakbalas dihadkan oleh kepekatan enzim.

- 12 Diagram 8 shows the set up of an experiment to study the hydrolysis of albumen. The contents of the test tubes A, B, C and D are given in the table.

Rajah 8 menunjukkan susunan radas bagi eksperimen untuk mengkaji proses hidrolisis albumin. Kandungan tabunguji A, B, C dan D adalah diberi seperti dalam jadual.

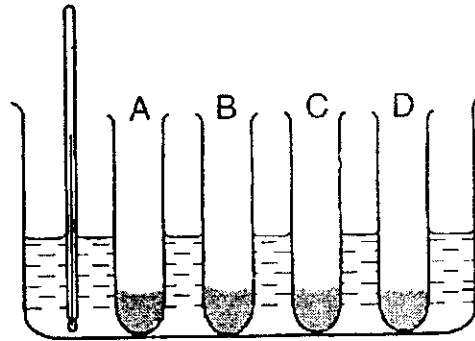


Diagram 8
Rajah 8

Test Tube Tabunguji	Content Kandungan
A	2 ml albumen solution + 1 ml pepsin + 3 drops hydrochloric acid <i>2 ml larutan albumin + 1 ml pepsin + 3 titik asid hidroklorik</i>
B	2 ml albumen solution + 1 ml pepsin <i>2 ml larutan albumin + 1 ml pepsin</i>
C	2 ml albumen solution + 1 ml distilled water + 3 drops hydrochloric acid <i>2 ml larutan albumin + 1 ml air suling + 3 titik asid hidroklorik</i>
D	2 ml albumen solution + 1 ml distilled water <i>2 ml larutan albumin + 1 ml air suling</i>

The experiment is left for 20 minutes. Which of test tube shows the albumen had been hydrolysed?
Eksperimen dibiarkan selama 20 minit. Tabung uji yang manakah menunjukkan albumin telah dihidrolisiskan?

- 13 Diagram 9 shows a cell cycle.
Rajah 9 menunjukkan kitar sel.

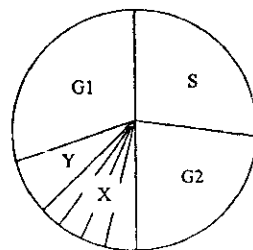


Diagram 9
Rajah 9

In Diagram 9, at which stage does the mitosis occur?
Dalam Rajah 9, pada peringkat manakah mitosis berlaku?

- A. Y
B. X
C. G2
D. S

- 14 Diagram 10 shows the typical structure of a flower.
Rajah 10 menunjukkan struktur tipikal bunga.

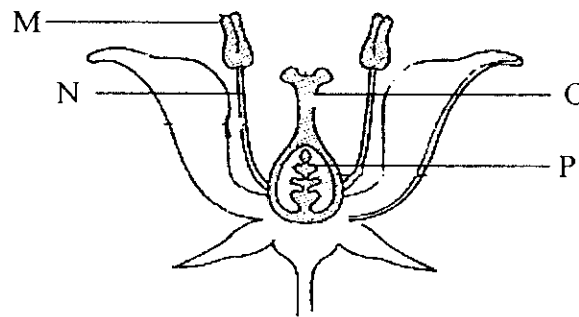


Diagram 10
Rajah 10

Which of the following parts labeled M, N, O and P undergo meiosis?
Yang manakah antara bahagian berlabel M, N, O dan P menjalankan meiosis?

- A. M and N
M dan N
- B. N and O
N dan O
- C. M and P
M dan P
- D. N, O and P
N, O dan P
- 15 Which of the following statements about the phase shown in Diagram 11 is **true**?
Yang manakah pernyataan mengenai fasa yang ditunjukkan dalam Rajah 11 adalah **benar**?

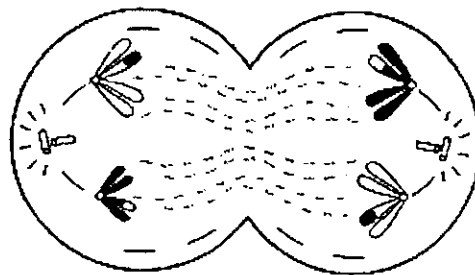


Diagram 11
Rajah 11

- A. Two haploid daughter cells are formed at the end of this phase.
Dua sel anak yang haploid terbentuk di akhir fasa tersebut.
- B. Two diploid daughter cells are formed at the end of this phase.
Dua sel anak yang diploid terbentuk di akhir fasa tersebut.
- C. Each pole has four chromosomes at the end of this phase.
Setiap kutub mempunyai empat kromosom di akhir fasa tersebut.
- D. Spindle fibres are formed at the end of this phase.
Gentian gelendung terbentuk di akhir fasa tersebut.

- 16 Table 2 shows hydrolysis of carbohydrate.
Jadual 2 menunjukkan hidrolisis karbohidrat.

Starch	→	maltose	\xrightarrow{Q}	glucose
<i>Kanji</i>	→	<i>maltosa</i>	\xrightarrow{Q}	<i>glukosa</i>

Table 2
Jadual 2

Name enzyme Q.
Namakan enzim Q.

- A. Maltase
Maltase
- B. Amylase
Amilase
- C. Lactase
Laktase
- D. Sucrase
Sukrase
- 17 Diagram 12 shows part of the digestive system in a rabbit.
Rajah 12 menunjukkan sebahagian daripada sistem pencernaan dalam arnab.

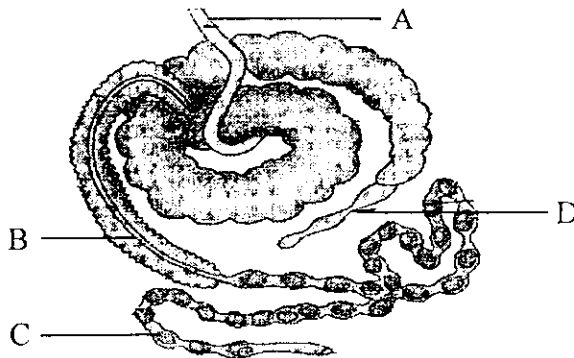


Diagram 12
Rajah 12

At which part labelled A, B, C and D, can symbiotic bacteria be found?
Antara bahagian berlabel A, B, C dan D, di manakah terdapatnya bakteria simbiotik?

- 18 An experiment has been carried out to determine the content of vitamin C in a pineapple juice. The result is recorded in Table 3

Satu eksperimen telah dijalankan untuk menentukan kandungan vitamin C dalam jus nenas. Keputusan dicatatkan dalam Jadual 3.

Sample <i>Sampel</i>	Volume to decolourise 1 ml of DCPIP 0.1% solution (ml). <i>Isipadu untuk menyahwarna 1ml larutan DCPIP 0.1% (ml).</i>
Ascorbic acid 0.1% <i>Asid askorbik 0.1%</i>	0.3
Pineapple juice <i>Jus nenas</i>	1.5

Table 3
Jadual 3

What is the content of vitamin C in the pineapple juice?

Apakah kandungan vitamin C dalam jus nenas?

- A. 0.2 mg/ml
- B. 0.02 mg/ml
- C. 0.3 mg/ml
- D. 0.03 mg/ml

- 19 Diagram 13 shows an experiment carried out to study the factor affecting the rate of photosynthesis.
Rajah 13 menunjukkan satu eksperimen untuk mengkaji faktor yang mempengaruhi kadar fotosintesis.

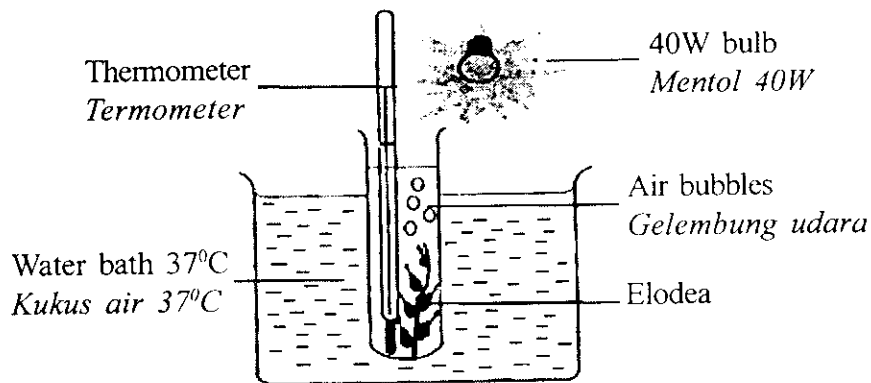


Diagram 13

Rajah 13

Which of the following will increase the number of bubbles produced in the test tube?
Yang manakah antara berikut, akan meningkatkan jumlah gelembung udara yang terhasil di dalam tabung uji?

- I. Using a 60W bulb.
Menggunakan mentol 60W.
 - II. Using a water bath at 60°C.
Menggunakan kukus air pada 60°C.
 - III. Bringing the bulb closer to the test tube
Membawa mentol mendekati tabung uji.
 - IV. Using a bigger bulb but with the same power.
Menggunakan mentol yang lebih besar dengan kuasa yang sama.
- A. I and IV only
I dan IV sahaja
 - B. I and III only
I dan III sahaja
 - C. II and III only
II dan III sahaja
 - D. I, II, III and IV
I, II, III dan IV sahaja

20 A student carried out an experiment as shown in Diagram 14. What is the conclusion of this experiment?

Seorang murid telah menjalankan eksperimen seperti yang ditunjukkan dalam Rajah 14. Apakah kesimpulan yang boleh dibuat dari eksperimen ini?

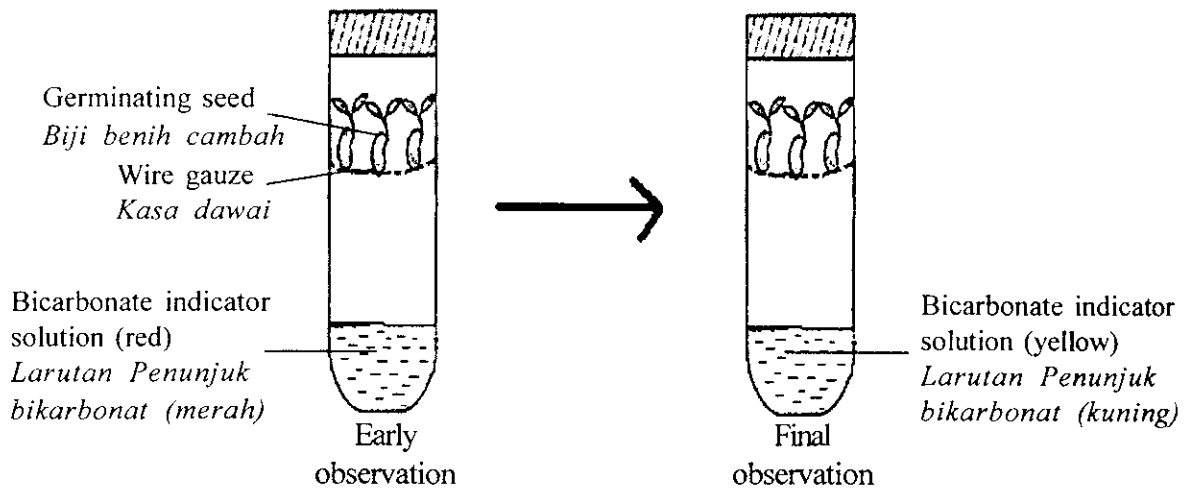


Diagram 14
Rajah 14

- A. Water vapour is formed during respiration.
Wap air terbentuk semasa respirasi.
- B. Carbon dioxide is released during respiration.
Karbon dioksida dihasilkan semasa respirasi.
- C. Energy is produced during respiration.
Tenaga dihasilkan semasa respirasi.
- D. Oxygen is used during respiration.
Oksigen digunakan semasa respirasi.

21 Diagram 15 represents the process of respiration and photosynthesis.
Rajah 15 mewakili proses respirasi dan fotosintesis.

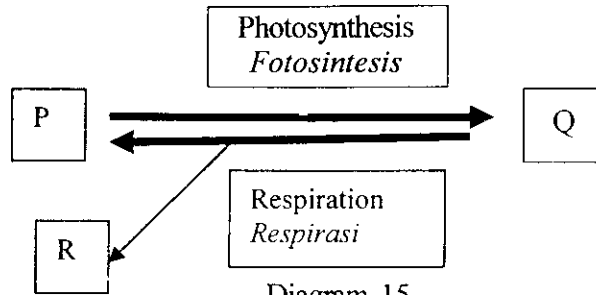


Diagram 15
Rajah 15

What are P, Q and R represent?
Apakah yang diwakili oleh P, Q dan R?

	P	Q	R
A	Carbon dioxide + water <i>Karbon dioksida + air</i>	Glucose + Oxygen <i>Glukosa + oksigen</i>	Heat energy + ATP <i>Tenaga haba + ATP</i>
B	Heat energy + ATP <i>Tenaga haba + ATP</i>	Carbon dioxide + water <i>Karbon dioksida + air</i>	Glucose + Oxygen <i>Glukosa + oksigen</i>
C	Glucose + Oxygen <i>Glukosa + oksigen</i>	Heat energy + ATP <i>Tenaga haba + ATP</i>	Carbon dioxide + water <i>Karbon dioksida + air</i>
D	Glucose + Oxygen <i>Glukosa + oksigen</i>	Carbon dioxide + water <i>Karbon dioksida + air</i>	Heat energy + ATP <i>Tenaga haba + ATP</i>

22 Diagram 16 shows a set-up apparatus used to study the effect of smoking on human health.
Rajah 16 menunjukkan susunan radas yang digunakan untuk mengkaji kesan merokok ke atas kesihatan manusia.

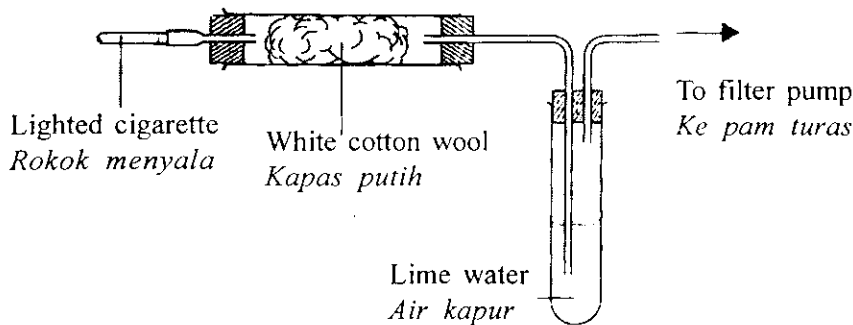


Diagram 16
Rajah 16

Which of the following substances can be detected in the above experiment?
Manakah antara bahan berikut dapat dikesan dari eksperimen di atas?

- A. Nicotine only
Nikotin sahaja
- B. Tar and nicotine
Tar dan nikotin
- C. Tar and carbon dioxide
Tar dan karbon dioksida
- D. Nicotine and carbon dioxide
Nikotin dan karbon dioksida

- 23 The following are the steps of oxygen movement from alveolus to the blood capillaries. Arrange them in their **correct** sequence.
Berikut adalah langkah-langkah dalam pergerakan oksigen dari alveolus ke kapilari darah. Susun langkah-langkah tersebut mengikut turutan yang betul.

- I. Oxygen diffuses across a blood capillaries wall.
Oksigen meresap merentasi dinding kapilari
 - II. Oxygen dissolves in moisture film at inner wall of alveolus.
Oksigen terlarut dalam lapisan nipis kelembapan.
 - III. Oxygen diffuses across the wall of alveolus.
Oksigen meresap merentasi dinding alveolus.
 - IV. Oxygen combined with haemoglobin.
Oksigen bergabung dengan hemoglobin.
- A. I, III, II, IV
 - B. II, III, I, IV
 - C. II, IV, III, I
 - D. III, I, II, IV

- 24 Diagram 17 shows the part of the nitrogen cycle.
Rajah 17 menunjukkan sebahagian dari kitar nitrogen.

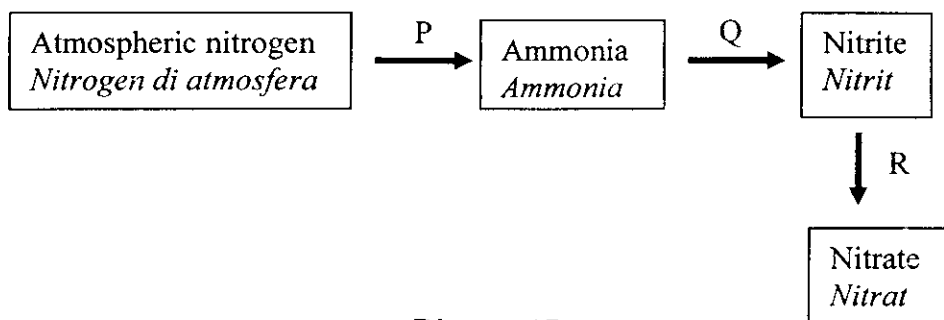


Diagram 17
Rajah 17

- Name process P, Q and R.
Namakan proses P, Q dan R.

	P	Q	R
A	Nitrogen fixation <i>Pengikatan nitrogen</i>	Nitrification <i>Penitritan</i>	Nitrification <i>Penitritan</i>
B	Nitrification <i>Penitritan</i>	Nitrogen fixation <i>Pengikatan nitrogen</i>	Denitrification <i>Pendinitritan</i>
C	Denitrification <i>Pendinitritan</i>	Nitrification <i>Penitritan</i>	Nitrogen fixation <i>Pengikatan nitrogen</i>
D	Nitrogen fixation <i>Pengikatan nitrogen</i>	Denitrification <i>Pendinitritan</i>	Nitrification <i>Penitritan</i>

- 25 Diagram 18 shows the food web in an ecosystem.
Rajah 18 menunjukkan satu siratan makanan dalam satu ekosistem.

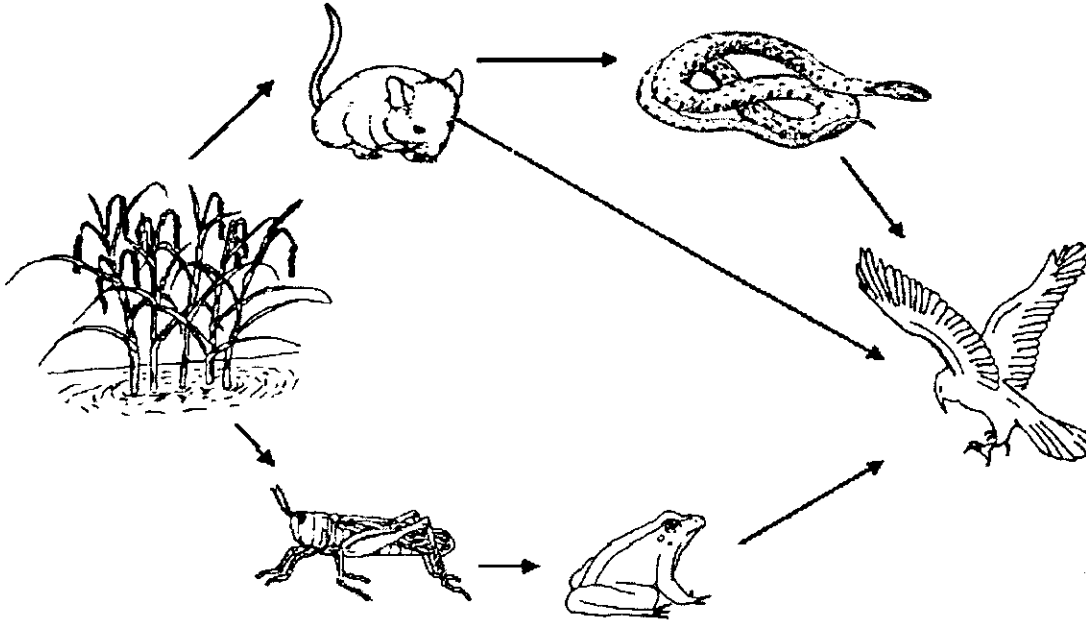


Diagram 18
Rajah 18

Which organisms in Diagram 18 represent the third trophic level?
Organisma manakah dalam Rajah 18 mewakili aras trofik ketiga?

- A Snake and frog
Ular dan katak
- B Rat and grasshopper
Tikus dan belalang
- C Rat, frog and snake
Tikus, katak dan ular
- D Frog, snake and eagle
Katak, ular dan helang

- 26 Diagram 19 shows plant X growing on a tree.
Rajah 19 menunjukkan tumbuhan X yang hidup di atas sebatang pokok.



Diagram 19
Rajah 19

What is the type of interaction between X and the tree?
Apakah jenis interaksi antara X dengan pokok berkenaan?

- A. Mutualism
Mutualisme
- B. Commensalism
Komensalisme
- C. Parasitism
Parasitisme
- D. Saprophytism
Saprofitisme
- 27 Table 4 shows the results of a field study to estimate the population of garden snails in a vegetable farm.
Jadual 4 menunjukkan keputusan kajian lapangan untuk menganggar saiz populasi siput babi di dalam sebuah ladang sayur.

Number of capture <i>Bilangan tangkapan</i>	Number of garden snails captured <i>Bilangan siput babi yang ditangkap</i>	
First <i>Pertama</i>	280	
Second <i>Kedua</i>	70 marked <i>70 bertanda</i>	80 unmarked <i>80 tidak bertanda</i>

Table 4
Jadual 4

What is the estimated size of the snail population?
Berapakah anggaran saiz populasi siput babi berkenaan?

- A. 6
- B. 37
- C. 525
- D. 600

28 Table 5 shows the result of an experiment to study the level of pollution from different sources of water.

Jadual 5 menunjukkan keputusan eksperimen bagi mengkaji aras pencemaran dari beberapa sumber air.

Water sample <i>Sampel air</i>	Time taken for methylene blue solution to decolourise (hour) <i>Masa diambil untuk melunturkan larutan metilena biru (jam)</i>
P	Did not decolourise <i>Tidak dilunturkan</i>
Q	4 hours <i>4 jam</i>
R	1 hour <i>1 jam</i>
S	3 hours <i>3 jam</i>

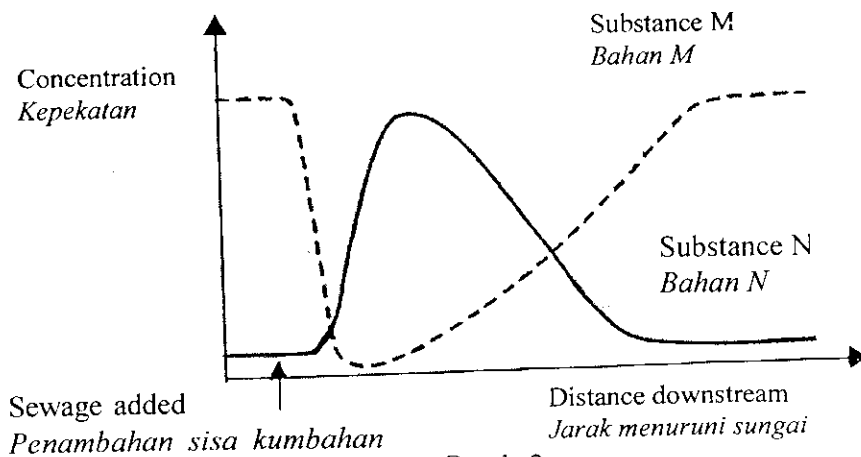
Table 5
Jadual 5

Which of the following water samples is the most polluted?
Manakah antara sampel air berikut paling tercemar?

- A P B Q C R D S

29 Graph 3 shows the changes in concentration of two substances, M and N, in the river which is polluted by sewage.

Graf 3 menunjukkan perubahan kepekatan dua bahan, M dan N, dalam sebatang sungai yang tercemar dengan sisa kumbahan.



Graph 3
Graf 3

What are substances M and N?
Apakah bahan M dan N?

	M	N
A	Carbon dioxide <i>Karbon dioksida</i>	Nitrogenous compound <i>Sebatian bernitrogen</i>
B	Nitrogenous compound <i>Sebatian bernitrogen</i>	Carbon dioxide <i>Karbon dioksida</i>
C	Oxygen <i>Oksigen</i>	Nitrogenous compound <i>Sebatian bernitrogen</i>
D	Nitrogenous compound <i>Sebatian bernitrogen</i>	Oxygen <i>Oksigen</i>

- 30 Diagram 20 shows the human activities.
Rajah 20 menunjukkan aktiviti manusia.

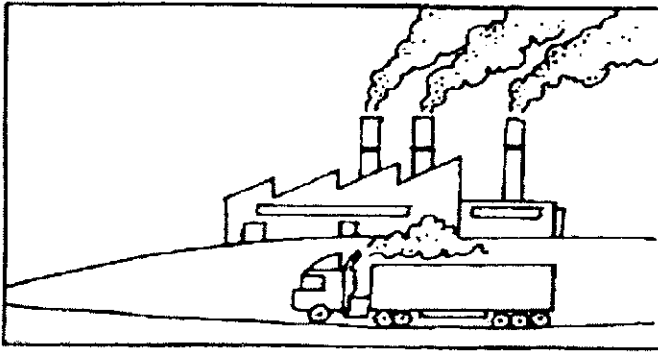


Diagram 20
Rajah 20

Which of the following is the effect of the activities?
Manakah antara berikut merupakan kesan aktiviti tersebut?

- A Reduce the pH of the soil
Menurunkan pH tanah
 - B Reduce the BOD value
Merendahkan nilai BOD
 - C Decrease the carbon particles in the atmosphere
Mengurangkan jumlah partikel karbon di atmosfera
 - D Increase the distance of vision
Meningkatkan jarak penglihatan
- 31 Diagram 21 shows a cross section of a particular part of a plant.
Rajah 21 menunjukkan keratan rentas bahagian tertentu pada tumbuhan.

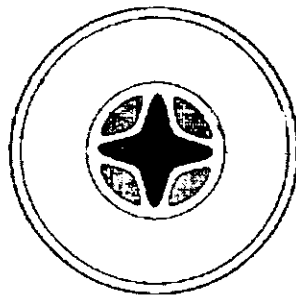


Diagram 21
Rajah 21

Name the part.
Namakan bahagian tersebut.

- A Dicotyledon root
Akar dikotiledon
- B Dicotyledon stem
Batang dikotiledon
- C Monocotyledon root
Akar monokotiledon
- D Monocotyledon stem
Batang monokotiledon

- 32 Diagram 22 shows a cross section of a human heart.
Rajah 22 menunjukkan keratan rentas jantung manusia.

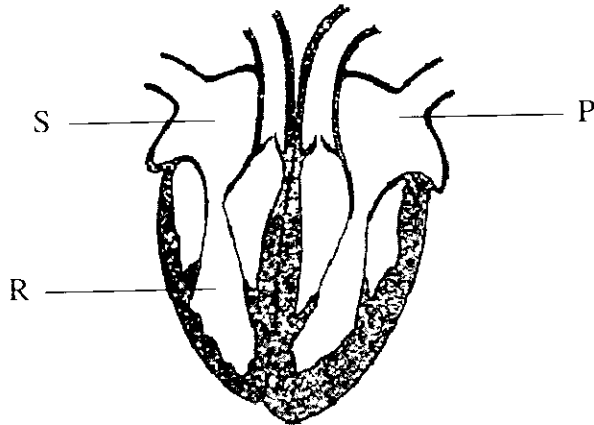


Diagram 22
Rajah 22

Which of the following is **true** about the blood flow in the heart?
*Manakah antara berikut **benar** mengenai pengaliran darah dalam jantung?*

- A Blood from lungs enters S
Darah dari paru-paru memasuki S
- B Blood from lungs enters P
Darah dari paru-paru memasuki P
- C Blood flows from R to S
Darah mengalir dari R ke S
- D Blood from body tissues enters P
Darah dari tisu badan memasuki P

- 33 Diagram 23 shows the movement of water molecules from the soil into the leaves.
Rajah 23 menunjukkan pergerakan molekul air dari tanah ke daun.

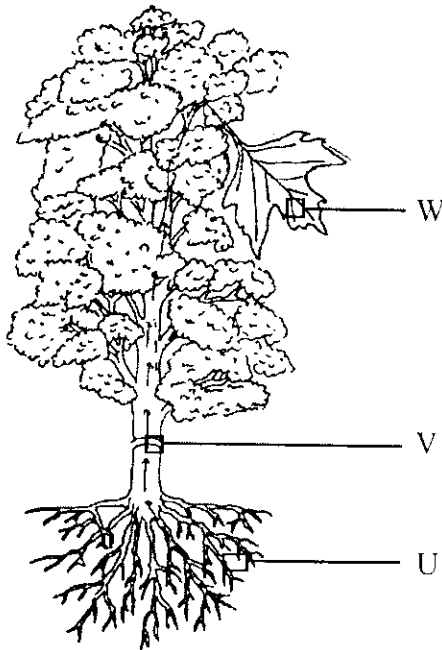


Diagram 23
Rajah 23

Which of the following correctly describes the force and the process which helps water moves through U, V and W?

Manakah antara berikut menerangkan daya dan proses yang membantu air bergerak melalui U, V dan W?

	U	V	W
A	Active transport and root pressure <i>Pengangkutan aktif dan tekanan akar</i>	Capillary action <i>Tindakan kapilari</i>	Osmosis <i>Osmosis</i>
B	Active transport and root pressure <i>Pengangkutan aktif dan tekanan akar</i>	Capillary action and transpiration pull <i>Tindakan kapilari dan tarikan transpirasi</i>	Capillary action <i>Tindakan kapilari</i>
C	Osmosis and root pressure <i>Osmosis dan tekanan akar</i>	Capillary action and transpiration pull <i>Tindakan kapilari dan tarikan transpirasi</i>	Transpiration pull and osmosis <i>Tarikan transpirasi dan osmosis</i>
D	Osmosis and root pressure <i>Osmosis dan tekanan akar</i>	Transpiration pull <i>Tarikan transpirasi</i>	Active transport <i>Pengangkutan aktif</i>

- 34 Diagram 24 shows the three types of human vertebrae.
Rajah 24 menunjukkan tiga jenis vertebra manusia.

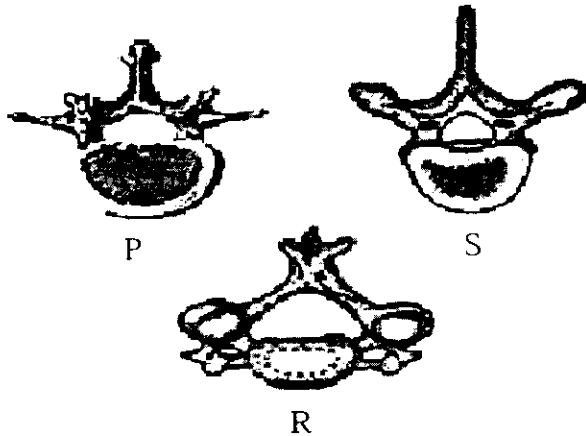


Diagram 24
Rajah 24

Arrange the **correct** position of the vertebrae in the vertebral column downwards.
Susun kedudukan vertebra yang **betul** dalam turus vertebra menghala ke bawah.

- A P, R, S
B R, P, S
C R, S, P
D S, P, R
- 35 Diagram 25 shows the antagonistic action of skeletal muscle.
Rajah 25 menunjukkan tindakan antagonis otot rangka.

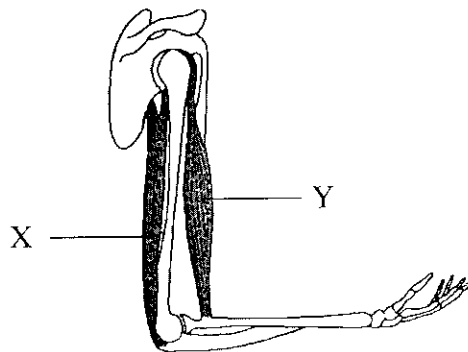


Diagram 25
Rajah 25

Which of the following are **correct** about X and Y?
Manakah antara berikut **benar** tentang X dan Y?

- | | X | Y |
|---|------------------------------|------------------------------|
| A | Contracts
<i>Mengecut</i> | Relaxes
<i>Mengendur</i> |
| B | Relaxes
<i>Mengendur</i> | Contracts
<i>Mengecut</i> |
| C | Contracts
<i>Mengecut</i> | Contracts
<i>Mengecut</i> |
| D | Relaxes
<i>Mengendur</i> | Relaxes
<i>Mengendur</i> |

- 36 Diagram 26 shows a normal and an osteoporosis bone.
Rajah 26 menunjukkan tulang normal dan tulang rapuh.

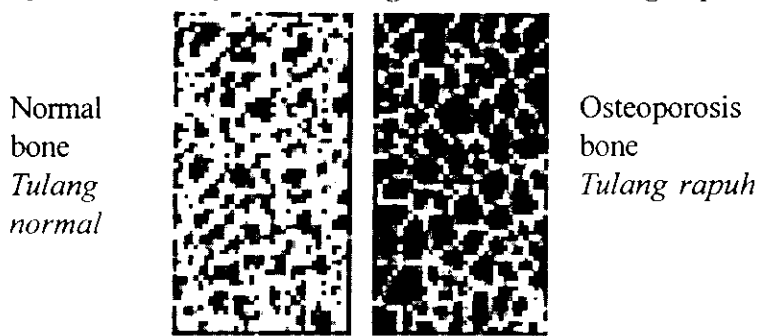


Diagram 26
Rajah 26

Based on Diagram 26, which of the following is **correct** about the osteoporosis bone?
Berdasarkan Rajah 26, manakah antara berikut **benar** tentang tulang rapuh?

- A Less compact
Kurang padat.
- B Becomes decay
Mereput
- C More compact
Lebih padat.
- D Less cartilage
Kurang rawan
- 37 Diagram 27 shows the movement of fish in water.
Rajah 27 menunjukkan pergerakan ikan di dalam air.

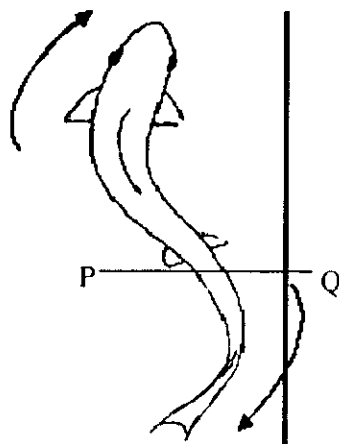
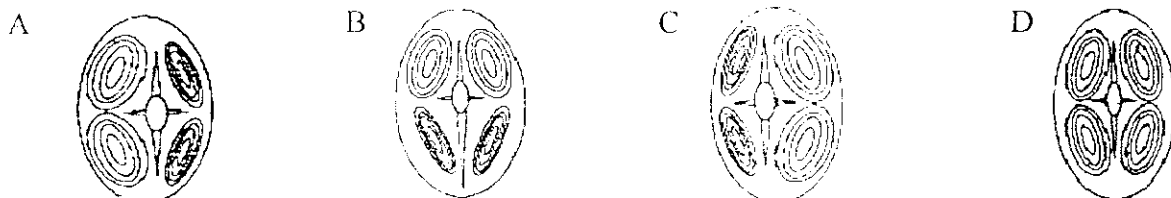
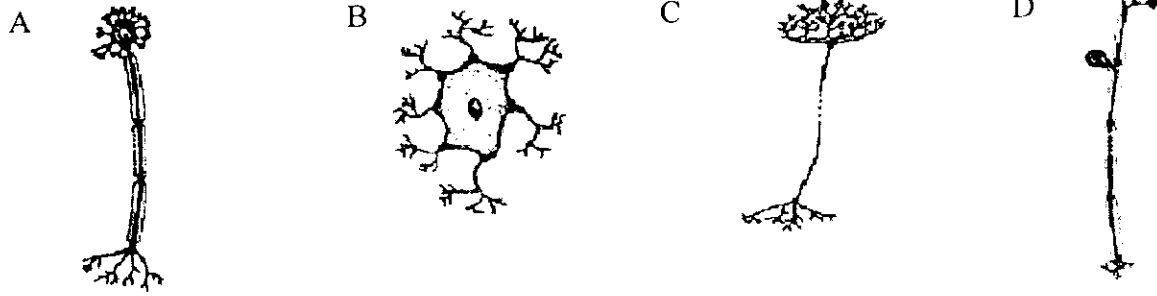


Diagram 27
Rajah 27

Which of the following shows the correct structure of myotom muscle at the cross section of PQ?
Manakah yang berikut menunjukkan struktur miotom yang betul pada keratan rentas PQ?



- 38 Which of the following neuron send impulses from the receptor to the central nervous system?
Antara berikut, neuron manakah yang menghantar impuls dari reseptor kepada sistem saraf pusat?



- 39 What are the component of sweat produced by sweat gland?
Apakah komponen peluh yang dikeluarkan oleh kelenjar peluh?

- I Water
Air
 - II Glucose
Glucose
 - III Urea
Urea
 - IV Mineral salt
Garam mineral
- A I and II only
I dan II sahaja
 - B I, II and III only
I, II dan III sahaja
 - C I, III and IV only
I, III dan IV sahaja
 - D I, II, III and IV
I, II, III dan IV

- 40 Diagram 28 shows two experiments to study the effect of light on the coleoptile.
Rajah 28 menunjukkan dua eksperimen untuk mengkaji kesan cahaya ke atas koleptil.

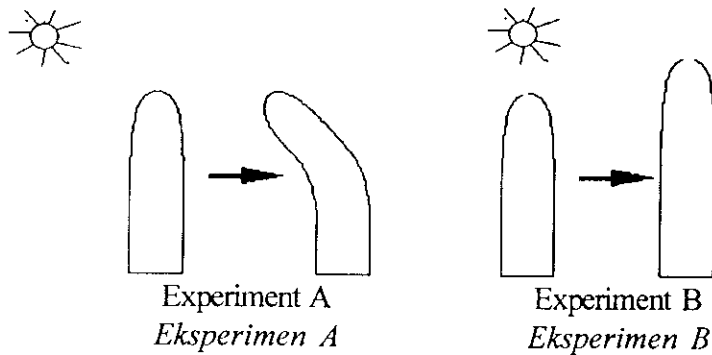


Diagram 28
Rajah 28

What can you conclude from the experiments?

Apakah yang boleh anda simpulkan dari eksperimen tersebut?

- A. Auxin and ethylene are produced by coleptile in the meristematic tissues.
Auksin dan etilena dihasilkan oleh koleoptil di tisu meristem.
- B. Auxin is very sensitive to the presence of high light intensity.
Auksin sangat sensitif terhadap keamatan cahaya yang tinggi.
- C. Concentration of auxin is higher at lighted area compared to shaded area.
Kepekatan auksin lebih tinggi di bahagian yang terang berbanding bahagian yang terlindung.
- D. Concentration of auxin is higher in shaded area compared to lighted area.
Kepekatan auksin lebih tinggi di bahagian yang terlindung berbanding bahagian yang terang.
- 41 Name the process of gametes formation in man.
Namakan proses pembentukan gamet pada lelaki.
- A Oogenesis
Oogenesis
- B Spermatogenesis
Spermatogenesis
- C Spermatids
Spermatid
- D Fertilization
Persenyawaan

- 42 Diagram 29 shows the process of embryo sac formation in flowering plants.
Rajah 29 menunjukkan proses pembentukan pundi embrio dalam tumbuhan berbunga.

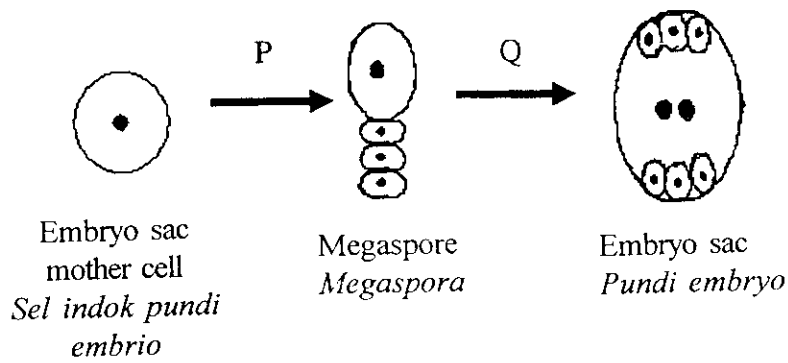
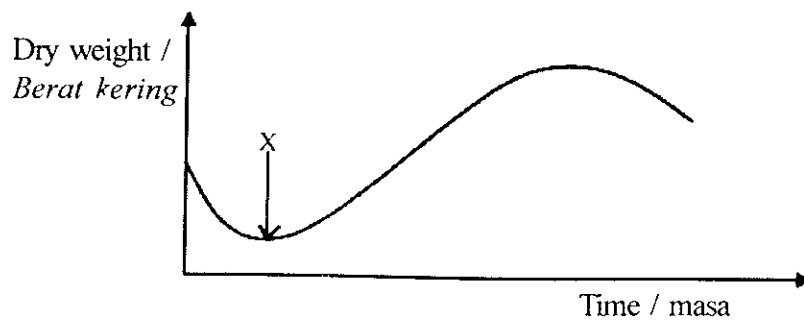


Diagram 29
Rajah 29

What are the processes that take place in P and Q?
Apakah proses-proses yang berlaku di P dan Q?

	P	Q
A	Mitosis	Meiosis
B	Meiosis	Meiosis
C	Meiosis	Mitosis
D	Mitosis	Mitosis

- 43 Graph 4 shows the growth curve of an annual plant.
Graf 4 menunjukkan lengkung pertumbuhan bagi suatu tumbuhan semusim.

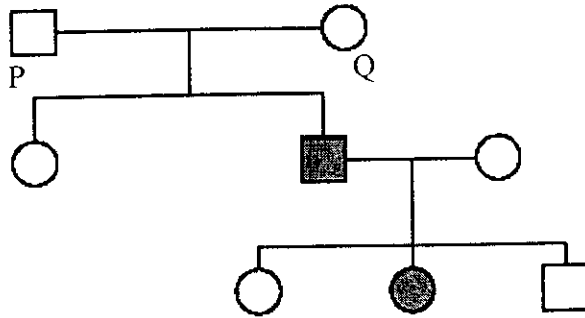


Graph 4
 Graf 4

Which of the following is **true** about X?
 Manakah antara berikut **benar** tentang X?

- A The decrease in mass is due to seed dispersal
Pengurangan jisim disebabkan oleh penyebaran biji benih
- B The organism has reached the minimum growth rate
Organisma telah sampai kepada kadar pertumbuhan minimum
- C Slow growth rate is due to adaptation to a new food source
Kadar pertumbuhan lambat disebabkan oleh adaptasi kepada sumber makanan yang baru
- D The decrease in mass is due to the breakdown of stored food
Pengurangan dalam jisim disebabkan penguraian makanan yang tersimpan
- 44 Which of the following is the genotype for a recessive homozygote?
 Manakah berikut adalah genotip bagi homozigot resesif?
- A RrYy
- B RRyy
- C rrYy
- D rryy
- 45 If a donor has blood group A, which of the following person can be a suitable recipient?
 Jika penderma mempunyai kumpulan darah A, manakah antara berikut sesuai sebagai penerima?
- I A
- II B
- III O
- IV AB
- A I only
I sahaja
- B I and IV only
I dan IV sahaja
- C II and III only
II dan III sahaja
- D I, III and IV only
I, III dan IV sahaja

- 46 Diagram 30 shows the inheritance of albinism within a family. Gene 'A' is the dominant allele while gene 'a' is recessive allele.
Rajah 30 menunjukkan pewarisan albino di kalangan satu keluarga. Gen 'A' adalah alel dominan sementara gen 'a' adalah alel resesif.



- Kekunci
- | | | | |
|--------------------------|--|-------------------------------------|--|
| <input type="checkbox"/> | Normal male
<i>Lelaki normal</i> | <input checked="" type="checkbox"/> | Albino male
<i>Lelaki albino</i> |
| <input type="circle"/> | Normal female
<i>Perempuan normal</i> | <input checked="" type="circle"/> | Albino female
<i>Perempuan albino</i> |

Diagram 30
Rajah 30

What are the genotype for P and Q?
Apakah genotip P dan Q?

	P	Q
A	AA	AA
B	AA	Aa
C	Aa	Aa
D	Aa	aa

- 47 Diagram 31 shows a monohybrid cross between durian tree, P and Q. The offspring are 50% tall and 50% dwarf.

Rajah 31 menunjukkan satu kacukan monohybrid di antara pokok durian P dan Q. Sebanyak 50% anaknya adalah tinggi dan 50% lagi kerdil.

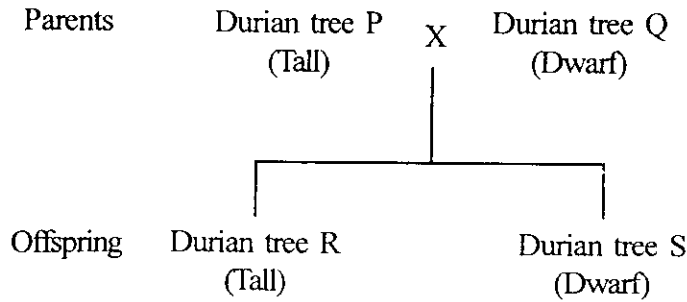


Diagram 31

Rajah 31

If durian tree R is crossed with S, determine the percentage of offspring that will be dwarf.

Jika pokok durian R dikacukkan dengan S, tentukan peratus anak pokok kerdil yang dihasilkan.

- A 0% B 25% C 50% D 75%

- 48 Diagram 32 shows a type of chromosomal mutation.

Rajah 32 menunjukkan sejenis mutasi kromosom.

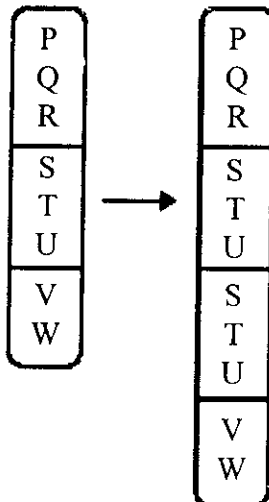


Diagram 32

Rajah 32

Name the type of chromosomal mutation.

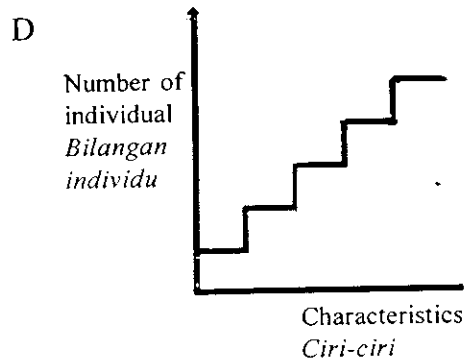
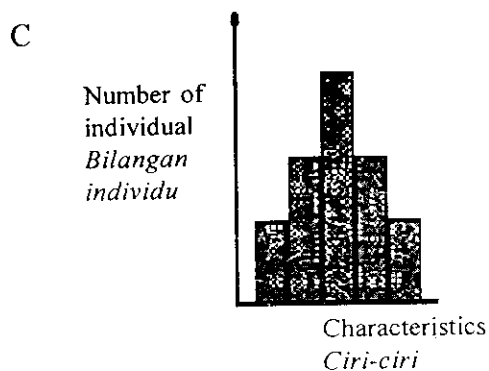
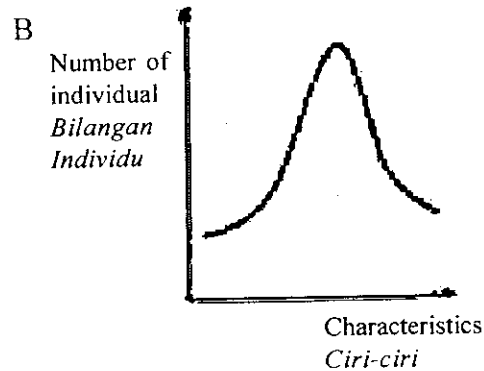
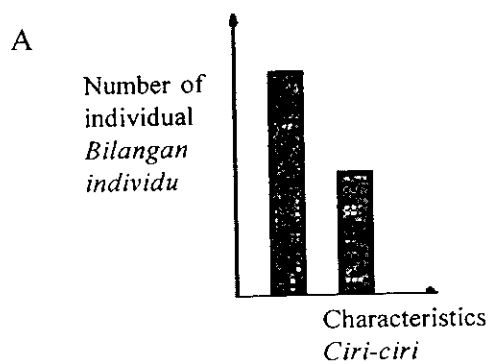
Namakan jenis mutasi kromosom tersebut.

- A Deletion
Pelenyapan
- B Inversion
Penyongsangan
- C Duplication
Penggandaan
- D Translocation
Translokasi

49 Which of the following is **not** caused by gene mutation?
 Manakah yang berikut **tidak** disebabkan oleh mutasi gen?

- A Albinism
Albino
- B Polydactylism
Polidaktil
- C Down's syndrome
Sindrom Down
- D Sickle-cell anaemia
Anemia sel sabit

50 Which of the following shows the variation caused by the genetic factor?
 Manakah yang berikut menunjukkan variasi disebabkan oleh faktor genetik?



END OF QUESTION PAPER
 KERTAS SOALAN TAMAT