

SULIT



**LEMBAGA PEPERIKSAAN  
KEMENTERIAN PENDIDIKAN MALAYSIA**

**SIJIL PELAJARAN MALAYSIA 2014**

**4551/1**

**BIOLOGY**

**Kertas 1**

**Nov./Dis.**

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

**Satu jam lima belas minit**

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**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 belakang kertas soalan ini.*

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Kertas soalan ini mengandungi 37 halaman bercetak dan 3 halaman tidak bercetak.

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- 1 The following statements are the characteristics of an organelle in a cell.

*Pernyataan berikut adalah ciri-ciri satu organel di dalam sel.*

A pair of small cylindrical structures of microtubules and found only in animal cells

*Sepasang struktur silinder kecil terdiri daripada mikrotubul dan terdapat dalam sel-sel haiwan sahaja*

Which organelle has the above characteristics?

*Organel manakah mempunyai ciri-ciri di atas?*

- A Golgi apparatus

*Jasad Golgi*

- B Chloroplast

*Kloroplas*

- C Lysosome

*Lisosom*

- D Centriole

*Sentriol*

- 2 An individual suffers from ulcer in the ileum. A part of his ileum has been removed.

What is the effect to the product of starch digestion?

*Seorang individu menghidap ulser di dalam ileum. Sebahagian daripada ileumnya perlu dibuang.*

*Apakah kesan ke atas hasil pencernaan kanji?*

- A The amount of glucose increases

*Kuantiti glukosa meningkat*

- B The amount of starch increases

*Kuantiti kanji meningkat*

- C The amount of maltose increases

*Kuantiti maltosa meningkat*

- D The amount of sucrose increases

*Kuantiti sukrosa meningkat*

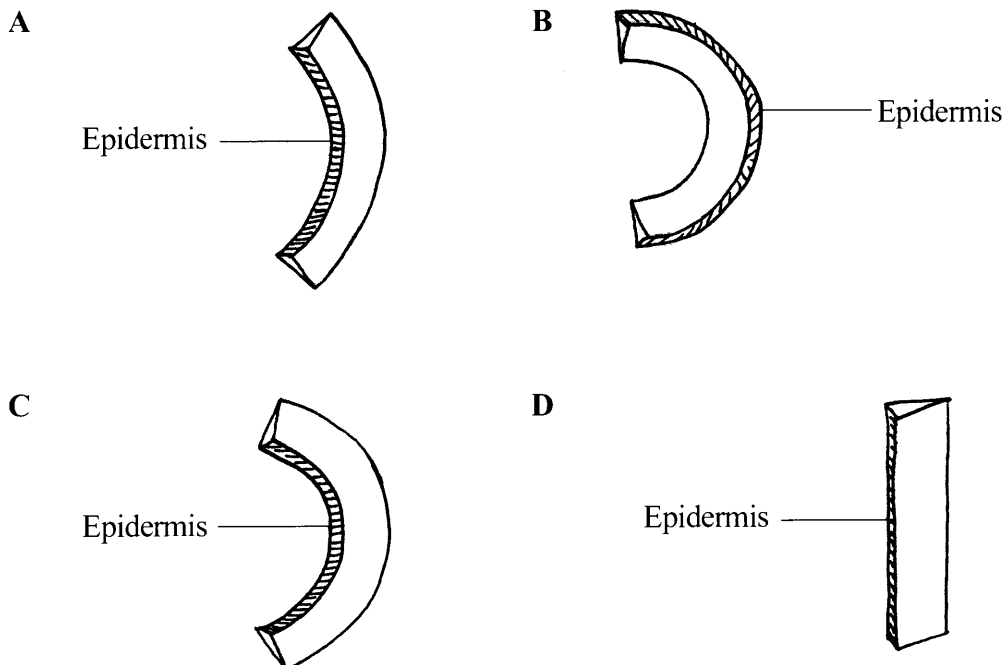
- 3 Which process is involved in the movement of water molecules from soil into the root hairs of a plant?

*Proses manakah yang terlibat dalam pergerakan molekul air dari tanah ke dalam akar rambut tumbuhan?*

- A Facilitated diffusion  
*Resapan berbantu*
- B Simple diffusion  
*Resapan ringkas*
- C Active transport  
*Pengangkutan aktif*
- D Osmosis  
*Osmosis*

- 4 A slice of mustard green stem was immersed in 30% of sucrose solution. Which observation is correct after one hour?

*Sepotong batang sawi hijau telah direndam di dalam larutan sukrosa 30%. Pemerhatian yang manakah betul selepas satu jam?*



5 Which is an inorganic compound?

*Manakah sebatian bukan organik?*

A Rice

*Nasi*

B Fish

*Ikan*

C Water

*Air*

D Butter

*Mentega*

6 Which of the following is true about the enzyme reaction at 45 °C?

*Antara yang berikut, yang manakah benar tentang tindak balas enzim pada suhu 45°C?*

A Reaction increases

*Tindak balas meningkat*

B Reaction decreases

*Tindak balas menurun*

C Reaction at maximum

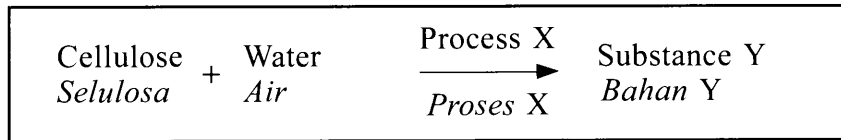
*Tindak balas maksimum*

D Reaction remains the same

*Tindak balas kekal sama*

- 7 The following equation shows digestion in a herbivor.

*Persamaan berikut menunjukkan pencernaan dalam herbivor.*



What are X and Y?

*Apakah X dan Y?*

	X	Y
<b>A</b>	Hydrolysis <i>Hidrolisis</i>	Galactose <i>Galaktosa</i>
<b>B</b>	Hydrolysis <i>Hidrolisis</i>	Glucose <i>Glukosa</i>
<b>C</b>	Condensation <i>Kondensasi</i>	Glucose <i>Glukosa</i>
<b>D</b>	Condensation <i>Kondensasi</i>	Galactose <i>Galaktosa</i>

- 8 Which food contains saturated fats?

*Makanan manakah yang mengandungi lemak tepu?*

- A** Butter  
*Mentega*
- B** Corn oil  
*Minyak jagung*
- C** Margerine  
*Marjerin*
- D** Coconut oil  
*Minyak kelapa*

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- 9 Diagram 1 shows organelle X with attached ribosomes.

*Rajah 1 menunjukkan organel X dengan ribosom yang melekat padanya.*

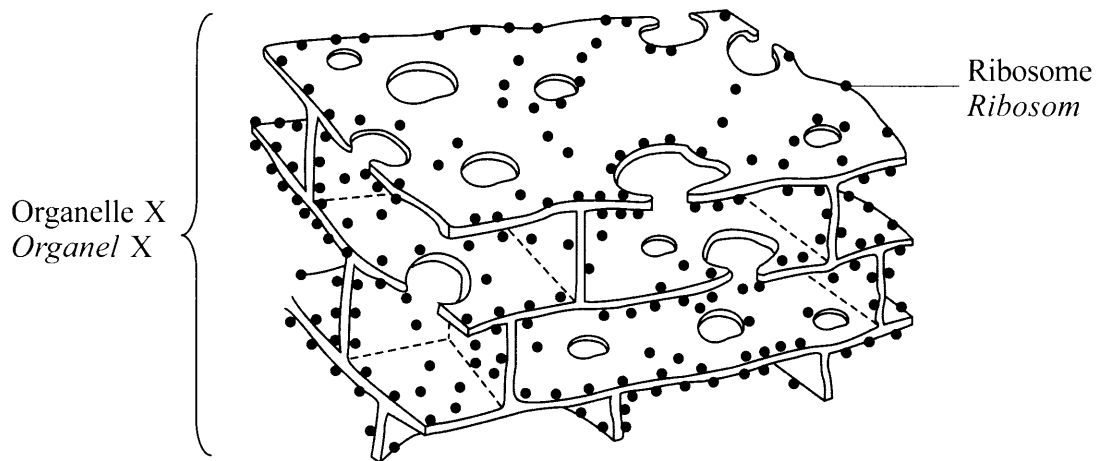


Diagram 1  
*Rajah 1*

What happens if organelle X is damaged?

*Apakah yang berlaku jika organel X rosak?*

- A** Protein will be denatured  
*Protein akan ternyahasli*
- B** Protein changes its active site  
*Protein menukar tapak aktifnya*
- C** Protein cannot be synthesised  
*Protein tidak dapat disintesis*
- D** Protein cannot be transported  
*Protein tidak dapat diangkut*
- 10 Which of the following helps enzyme to function well?  
*Antara yang berikut, yang manakah membantu enzim berfungsi dengan baik?*
- A** Product  
*Hasil*
- B** Cofactor  
*Kofaktor*
- C** Inhibitor  
*Perencat*
- D** Substrate  
*Substrat*

11 Diagram 2 shows a phase of mitosis in a cell.

*Rajah 2 menunjukkan satu fasa mitosis di dalam sel.*

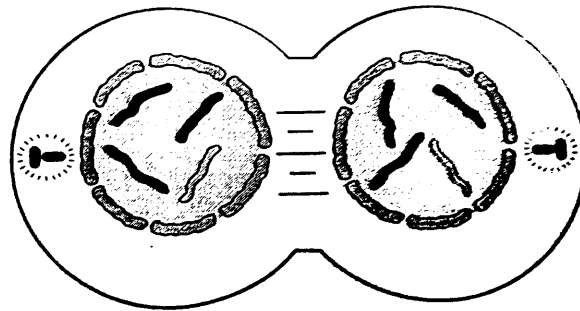


Diagram 2  
*Rajah 2*

What is the phase?

*Apakah fasa itu?*

- A Prophase  
*Profasa*
- B Metaphase  
*Metafasa*
- C Anaphase  
*Anafasa*
- D Telophase  
*Telofasa*

12 Diagram 3 shows the process of fertilisation in human.

*Rajah 3 menunjukkan proses persenyawaan dalam manusia.*

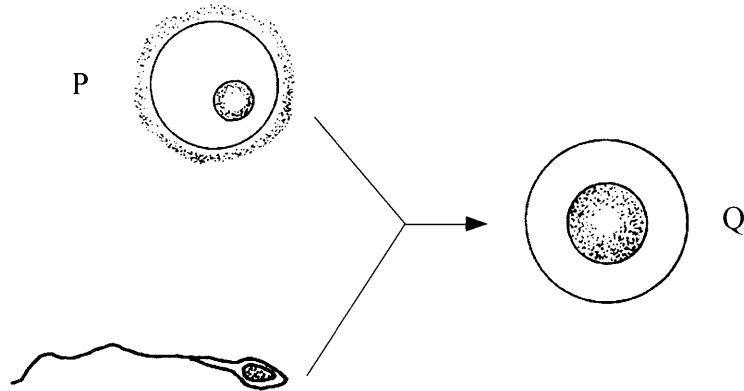


Diagram 3  
*Rajah 3*

What is the number of chromosome in P and Q?

*Apakah bilangan kromosom di P dan Q?*

	P	Q
A	23	23
B	23	46
C	46	23
D	46	46



- 13 Diagram 4 shows metaphase I of meiosis in an animal cell.

*Rajah 4 menunjukkan metafasa I bagi meiosis dalam suatu sel haiwan.*

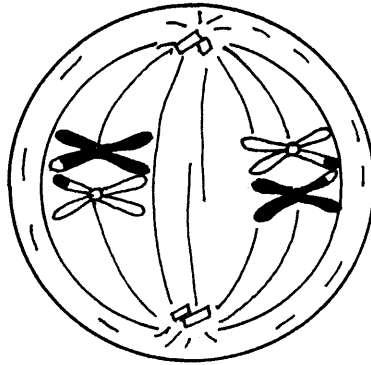


Diagram 4  
*Rajah 4*

What is the number of chromosome in a gamete after the cell completes its division?

*Apakah bilangan kromosom dalam gamet selepas sel membahagi dengan lengkap?*

- A 2  
B 3  
C 4  
D 5
- 14 A farmer practises organic farming. He wants to increase the soil fertility.

Which method is the most suitable to improve the soil fertility?

*Seorang petani mengamalkan pertanian organik. Dia mahu meningkatkan kesuburan tanah.*

*Kaedah manakah yang paling sesuai untuk meningkatkan kesuburan tanah itu?*

- A Ploughing  
*Membajak*
- B Crop rotation  
*Tanaman bergilir*
- C Direct seeding  
*Tabur terus*
- D Water drainage system  
*Sistem saliran air*

- 15 The following information is about photosynthesis.

*Maklumat berikut adalah mengenai fotosintesis.*

Plants require water and carbon dioxide to produce starch in the presence of sunlight and chlorophyll.

*Tumbuhan memerlukan air dan karbon dioksida untuk menghasilkan kanji dengan kehadiran cahaya matahari dan klorofil.*

What will happen if the uptake of water is decreases?

*Apakah akan berlaku sekiranya pengambilan air berkurangan?*

- A Production of oxygen decreases  
*Penghasilan oksigen berkurang*
- B Production of glucose increases  
*Penghasilan glukosa meningkat*
- C The use of carbon dioxide increases  
*Penggunaan karbon dioksida bertambah*
- D Concentration of hydrogen ions increases  
*Kepekatan ion-ion hidrogen bertambah*

- 16 Which group of organisms obtains nutrients from dead organic matter?

*Kumpulan organisma yang manakah mendapat nutrien daripada bahan-bahan organik yang mati?*

- A Parasite  
*Parasit*
- B Autotroph  
*Autotrof*
- C Commensal  
*Komensal*
- D Saprophyte  
*Saprofit*

17 Diagram 5 shows a cross section of a leaf.

*Rajah 5 menunjukkan keratan rentas bagi suatu daun.*

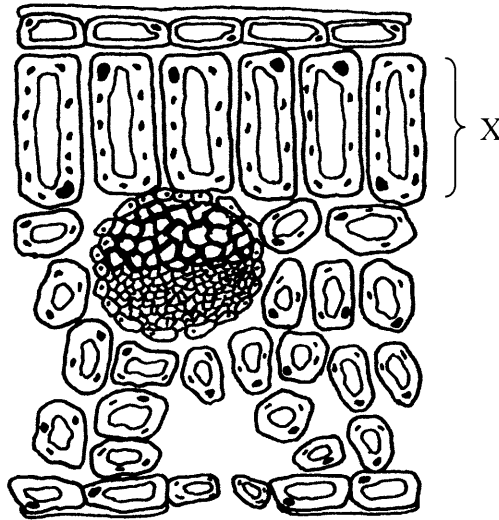


Diagram 5  
*Rajah 5*

Why are cells X packed tightly together in an upright arrangement?

*Mengapakah sel X tersusun bersama dengan rapat dalam kedudukan menegak?*

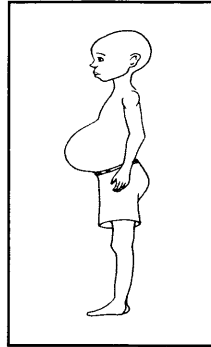
- A** To receive maximum amount of light  
*Untuk menerima jumlah cahaya yang maksimum*
- B** To receive maximum amount of water  
*Untuk menerima jumlah air yang maksimum*
- C** To receive maximum amount of oxygen  
*Untuk menerima jumlah oksigen yang maksimum*
- D** To receive maximum amount of carbon dioxide  
*Untuk menerima jumlah karbon dioksida yang maksimum*

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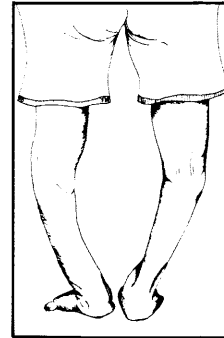
18 Which condition shows the effect of deficiency in vitamin C for a long period of time?

*Keadaan manakah yang menunjukkan kesan kekurangan vitamin C untuk tempoh masa yang lama?*

A



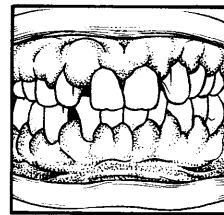
B



C



D



19 Diagram 6 shows levels of a food guide pyramid.

*Rajah 6 menunjukkan aras bagi satu panduan piramid makanan.*

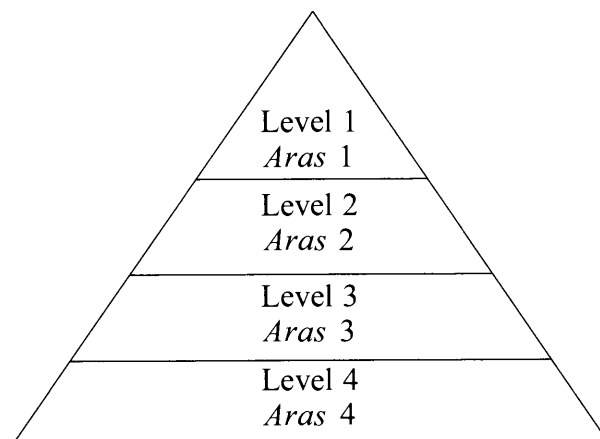


Diagram 6  
*Rajah 6*

Food in which level should be taken less to avoid diabetes mellitus?

*Makanan dalam aras manakah sepatutnya kurang diambil untuk mengelakkan diabetes mellitus?*

- A** Level 1 and Level 2  
*Aras 1 dan Aras 2*
- B** Level 1 and Level 4  
*Aras 1 dan Aras 4*
- C** Level 2 and Level 3  
*Aras 2 dan Aras 3*
- D** Level 2 and Level 4  
*Aras 2 dan Aras 4*

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20 Diagram 7 shows the digestive system of a ruminant.

*Rajah 7 menunjukkan sistem pencernaan ruminan.*

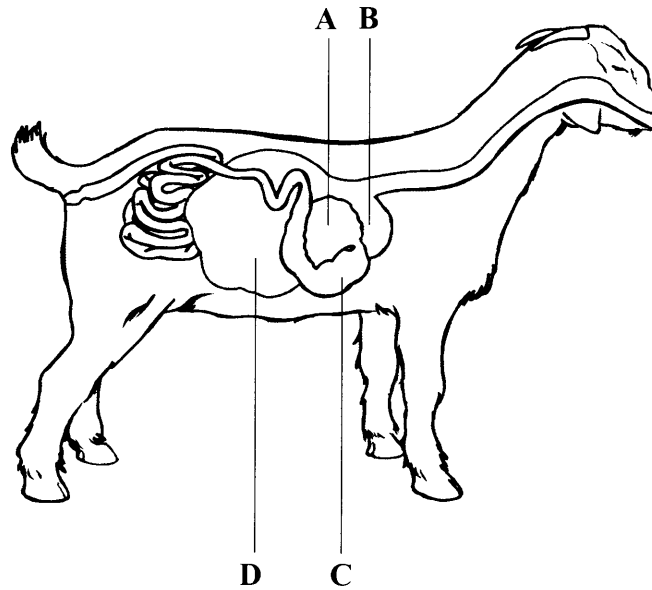


Diagram 7  
Rajah 7

Which part labelled **A**, **B**, **C** or **D** is the abomasum?

*Antara bahagian berlabel **A**, **B**, **C** dan **D**, yang manakah abomasum?*

21 Which activity produces the highest concentration of lactic acid in the muscle?

*Aktiviti manakah menghasilkan kepekatan asid laktik paling tinggi dalam otot?*

- A** Walking  
*Berjalan*
- B** Reading  
*Membaca*
- C** Sprint running  
*Lari pecut*
- D** Jogging  
*Berjoging*

- 22 Diagram 8 shows an experiment to study respiration and photosynthesis, using two test tubes, X and Y.

*Rajah 8 menunjukkan satu eksperimen untuk mengkaji respirasi dan fotosintesis, menggunakan dua tabung uji, tabung uji X dan tabung uji Y.*

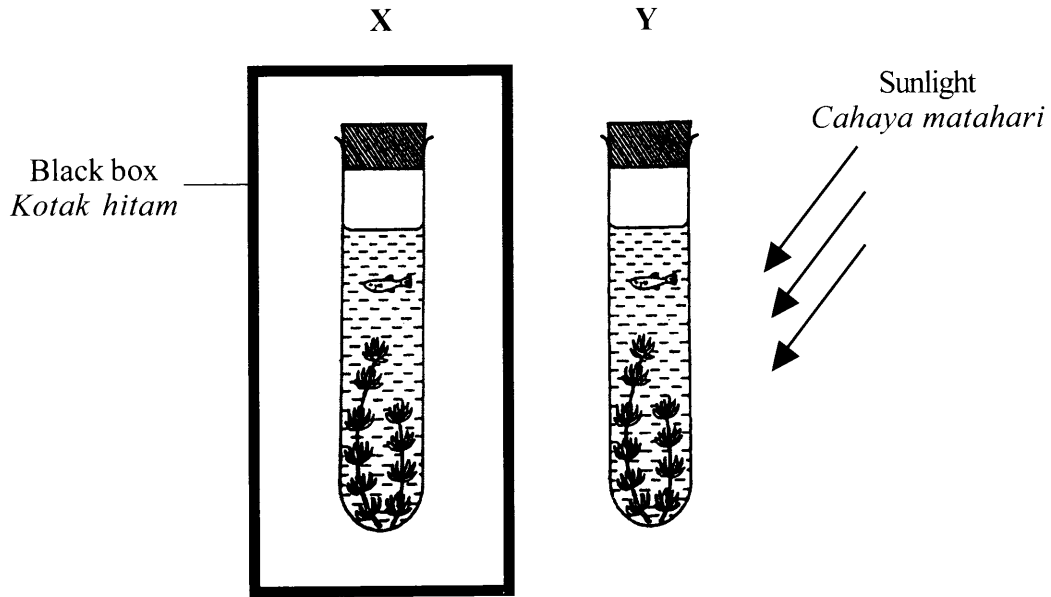


Diagram 8  
*Rajah 8*

Which of the following are the result of the experiment after half an hour?

*Antara yang berikut, yang manakah keputusan eksperimen selepas setengah jam?*

	X	Y
A	High concentration of carbon dioxide <i>Kepekatan karbon dioksida tinggi</i>	High concentration of oxygen <i>Kepekatan oksigen tinggi</i>
B	High concentration of carbon dioxide <i>Kepekatan karbon dioksida tinggi</i>	Low concentration of oxygen <i>Kepekatan oksigen rendah</i>
C	Low concentration of carbon dioxide <i>Kepekatan karbon dioksida rendah</i>	High concentration of oxygen <i>Kepekatan oksigen tinggi</i>
D	Low concentration of carbon dioxide <i>Kepekatan karbon dioksida rendah</i>	Low concentration of oxygen <i>Kepekatan oksigen rendah</i>

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23 Diagram 9 shows part of human respiratory organ.

*Rajah 9 menunjukkan sebahagian daripada organ respirasi manusia.*

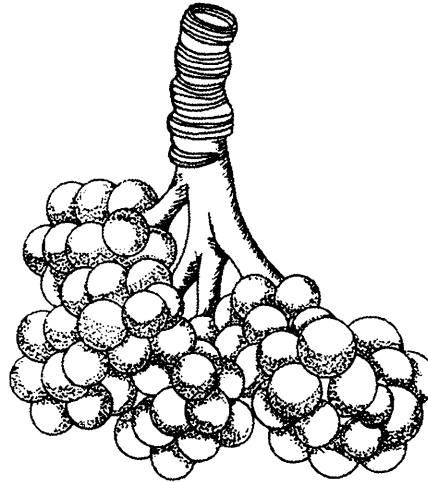


Diagram 9  
*Rajah 9*

Which characteristic refers to the part shown in the diagram?

*Ciri manakah merujuk kepada bahagian yang ditunjukkan dalam rajah itu?*

A The respiratory surface is moist

*Permukaan respirasi lembab*

B The respiratory surface lining is thin

*Lapisan permukaan respirasi adalah nipis*

C The respiratory structure has a large surface area

*Struktur respirasi mempunyai luas permukaan yang besar*

D The respiratory structure is more permeable to oxygen

*Struktur respirasi lebih telap kepada oksigen*

24 What is the end product of anaerobic respiration in human?

*Apakah produk akhir bagi respirasi anaerobik pada manusia?*

A Water

*Air*

B 38 ATP

*38 ATP*

C Lactic acid

*Asid laktik*

D Carbon dioxide

*Karbon dioksida*



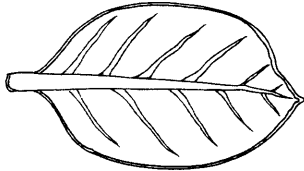
25 Mangrove plants act as a natural barrier that absorbs energy waves.

Which characteristics of the mangrove plants can help to reduce the damage to the coastal area?

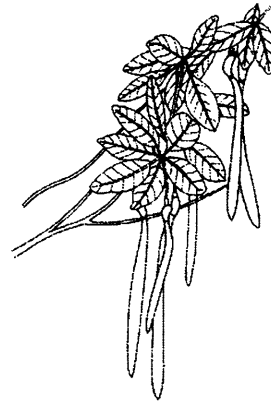
*Pokok bakau bertindak sebagai penghalang semulajadi yang menyerap tenaga ombak.*

*Ciri-ciri pokok bakau manakah yang boleh membantu mengurangkan kerosakan di kawasan pantai?*

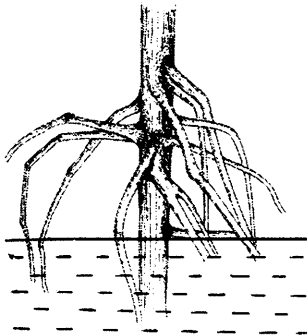
I



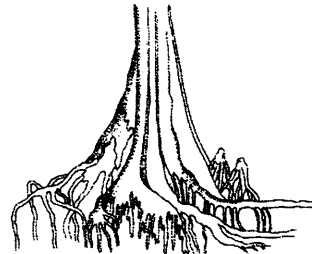
II



III



IV



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

26 Which is an abiotic component of an ecosystem?

*Yang manakah komponen abiosis bagi suatu ekosistem?*

A Bird

*Burung*

B Water

*Air*

C Fungus

*Fungi*

D Bacteria

*Bakteria*

- 27 A group of students carried out an experiment to estimate the density of *Mimosa pudica* in the school field using quadrats measuring  $1\text{m} \times 1\text{m}$ .

The density of *Mimosa pudica* is calculated using the following formula:

$$\text{Density} = \frac{\text{Total number of individuals of a species in all quadrats}}{\text{Number of quadrats} \times \text{quadrat area}}$$

*Sekumpulan pelajar menjalankan satu eksperimen untuk menganggarkan kepadatan Mimosa pudica di padang sekolah menggunakan kuadrat berukuran  $1\text{m} \times 1\text{m}$ .*

*Kepadatan Mimosa pudica dihitung menggunakan formula berikut:*

$$\text{Kepadatan} = \frac{\text{Jumlah bilangan individu bagi suatu spesies dalam semua kuadrat}}{\text{Bilangan kuadrat} \times \text{luas kuadrat}}$$

The result of the experiment is shown in Table 1.

*Keputusan eksperimen ditunjukkan dalam Jadual 1.*

<b>Quadrat Kuadrat</b>	1	2	3	4	5
<b>Number of <i>Mimosa pudica</i> Bilangan <i>Mimosa pudica</i></b>	2	3	0	2	0

Table 1  
Jadual 1

What is the estimated density of *Mimosa pudica* in the school field?

*Apakah anggaran kepadatan Mimosa pudica di padang sekolah?*

- A 0.7  $\text{m}^{-2}$
- B 1.0  $\text{m}^{-2}$
- C 1.4  $\text{m}^{-2}$
- D 2.3  $\text{m}^{-2}$

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28 Which mechanism will occur if the pH value of the blood decreases?

*Mekanisma manakah yang akan berlaku jika nilai pH darah menurun?*

A Breathing and ventilation rate decrease

*Kadar pernafasan dan ventilasi menurun*

B Breathing and ventilation rate increase

*Kadar pernafasan dan ventilasi meningkat*

C Breathing rate increases but ventilation rate decreases

*Kadar pernafasan meningkat tetapi kadar ventilasi menurun*

D Breathing rate decreases but ventilation rate increases

*Kadar pernafasan menurun tetapi kadar ventilasi meningkat*

29 An experiment was carried out to investigate the level of water pollution in four water samples.

Which of the following is the most polluted water sample?

*Satu eksperimen telah dijalankan untuk menyiasat tahap pencemaran air dalam empat sampel air.*

*Antara yang berikut, sampel air yang manakah paling tercemar?*

	<b>Water sample</b> <i>Sampel air</i>	<b>Time taken to decolourise methylene blue solution (min)</b> <i>Masa yang diambil untuk melunturkan warna larutan metilena biru (min)</i>
A	S	10
B	T	30
C	U	50
D	V	120

30 The following information is about eutrophication.

*Maklumat berikut adalah mengenai eutrofikasi.*

Eutrophication is a condition that encourages algae to grow rapidly.

*Eutrofikasi ialah keadaan yang menggalakkan pertumbuhan alga dengan pesat.*

Which substance causes eutrophication?

*Bahan yang manakah menyebabkan eutrofikasi?*

**A** Lead

*Plumbum*

**B** Sediment

*Enapan*

**C** Phosphate

*Fosfat*

**D** Radioactive waste

*Bahan buangan radioaktif*

- 31 Diagram 10 is a graph which shows the effects of light intensity on the rate of transpiration in a plant.

*Rajah 10 ialah graf yang menunjukkan kesan keamatan cahaya terhadap kadar transpirasi bagi suatu tumbuhan.*

Rate of transpiration  
*Kadar transpirasi*

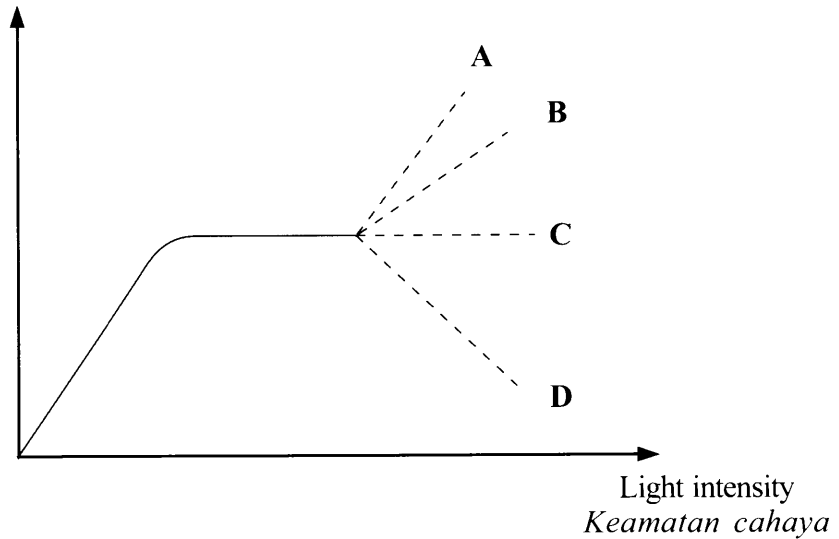


Diagram 10  
*Rajah 10*

Which part of the graph labelled **A**, **B**, **C** or **D** shows the rate of transpiration after the leaves are removed?

*Bahagian manakah yang berlabel A, B, C dan D pada graf, menunjukkan kadar transpirasi selepas daun-daun dibuang?*

32 Diagram 11 shows part of human blood vessels.

*Rajah 11 menunjukkan sebahagian daripada salur darah manusia.*

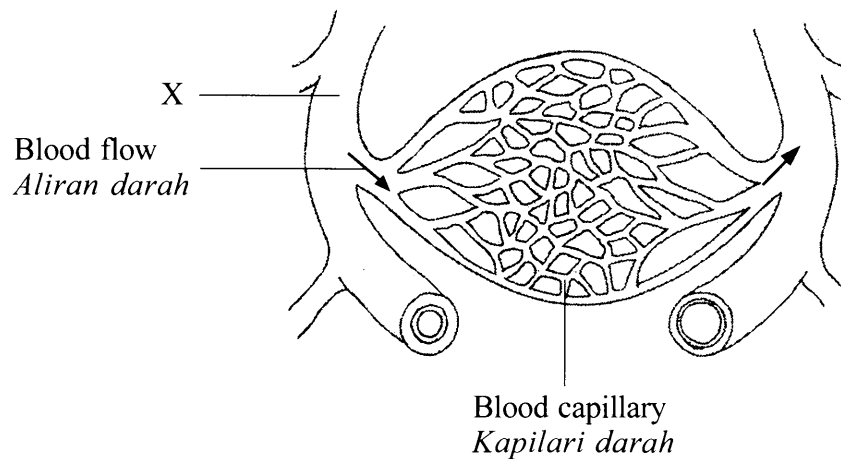


Diagram 11  
*Rajah 11*

Which of the following is correct about X?

*Antara yang berikut, yang manakah benar tentang X?*

- A** The presence of valve  
*Kehadiran injap*
- B** Thick muscular wall  
*Dinding otot tebal*
- C** Transport deoxygenated blood  
*Mengangkut darah terdeoksigen*
- D** Blood flows under lower pressure  
*Darah mengalir di bawah tekanan rendah*

- 33 Diagram 12 is a graph which shows the concentration of antibodies during injection of antiserum.

*Rajah 12 ialah graf yang menunjukkan kepekatan antibodi semasa suntikan antiserum.*

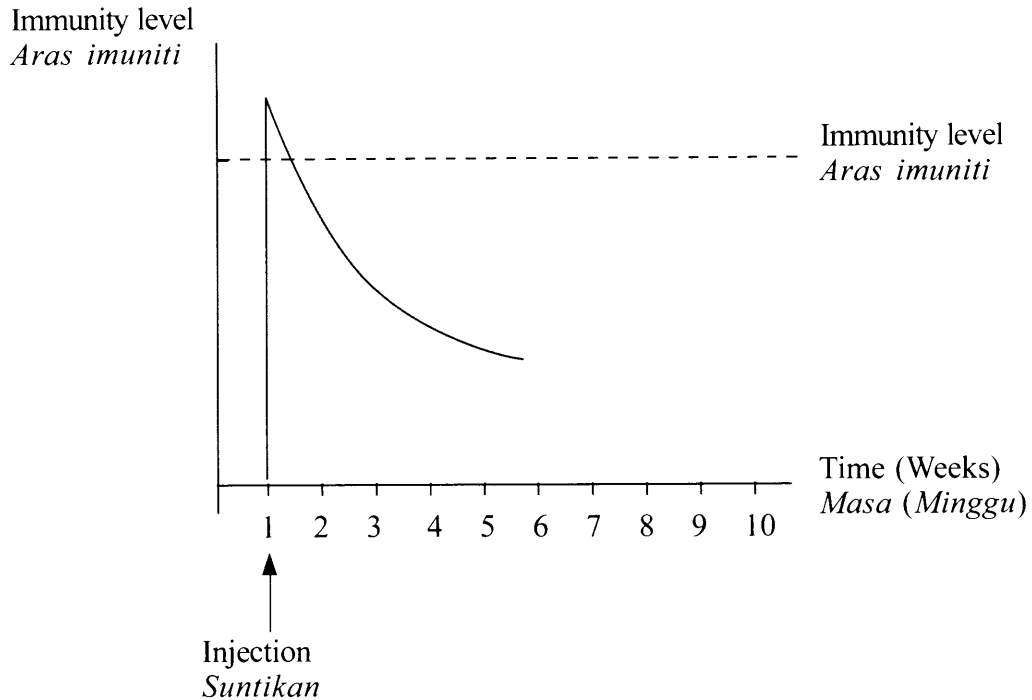


Diagram 12  
*Rajah 12*

Which disease is related to the graph?

*Penyakit manakah yang berkaitan dengan graf itu?*

- A** Rabies  
*Penyakit anjing gila*
- B** Meningitis  
*Meningitis*
- C** Hepatitis B  
*Hepatitis B*
- D** Poliomyelitis  
*Poliomielitis*



34 Which ion involves in the opening and closing of stomata?

*Ion manakah terlibat dalam pembukaan dan penutupan stomata?*

A Sodium ion

*Ion natrium*

B Chloride ion

*Ion klorida*

C Calcium ion

*Ion kalsium*

D Potassium ion

*Ion kalium*

35 Which blood cells produce heparin?

*Sel darah manakah menghasilkan heparin?*

A Basophils

*Basofil*

B Neutrophils

*Neutrofil*

C Lymphocytes

*Limfosit*

D Monocytes

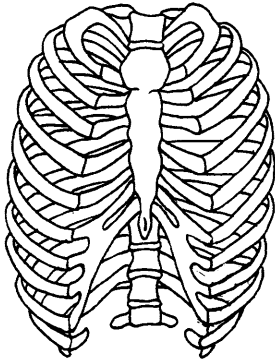
*Monosit*

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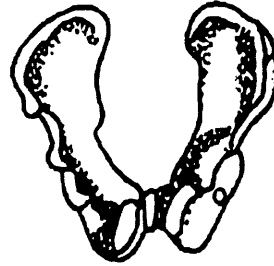
36 Which of the following is part of the human axial skeleton?

*Antara berikut, yang manakah sebahagian daripada rangka paksi manusia?*

A



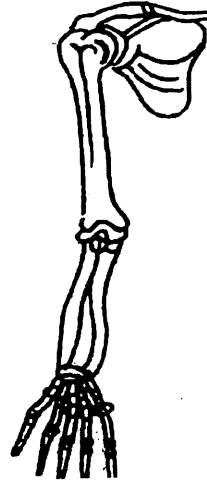
B



C



D



37 Diagram 13 shows human's forearm.

*Rajah 13 menunjukkan lengan manusia.*

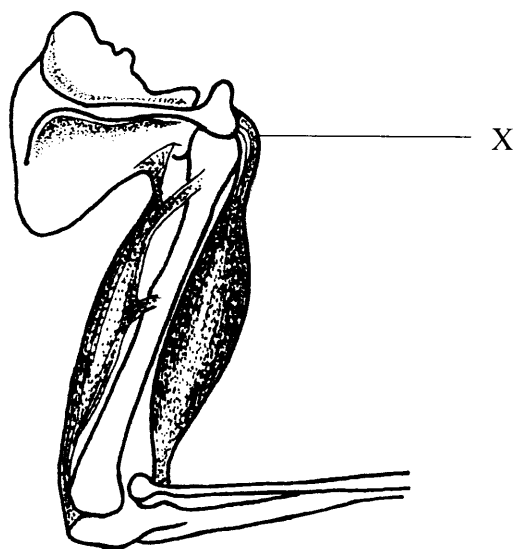


Diagram 13  
*Rajah 13*

What is X?

*Apakah X?*

- A Joint  
*Sendi*
- B Tendon  
*Tendon*
- C Muscle  
*Otot*
- D Ligament  
*Ligamen*

- 38 Diagram 14 shows the response of skin in cold surrounding.  
*Rajah 14 menunjukkan gerak balas kulit dalam persekitaran yang sejuk.*



Diagram 14  
*Rajah 14*

What happens if structure X is shaved?

*Apakah yang akan berlaku jika struktur X dicukur?*

- A Erector muscle cannot contract  
*Otot erektor tidak boleh mengecut*
- B Sweat gland becomes more active  
*Kelenjar peluh menjadi lebih aktif*
- C More heat is lost to the environment  
*Lebih banyak haba hilang ke persekitaran*
- D More blood is supplied to skin surface  
*Lebih banyak darah dibekalkan ke bawah permukaan kulit*

39 Diagram 15 shows a germination of seed.

*Rajah 15 menunjukkan percambahan biji benih.*

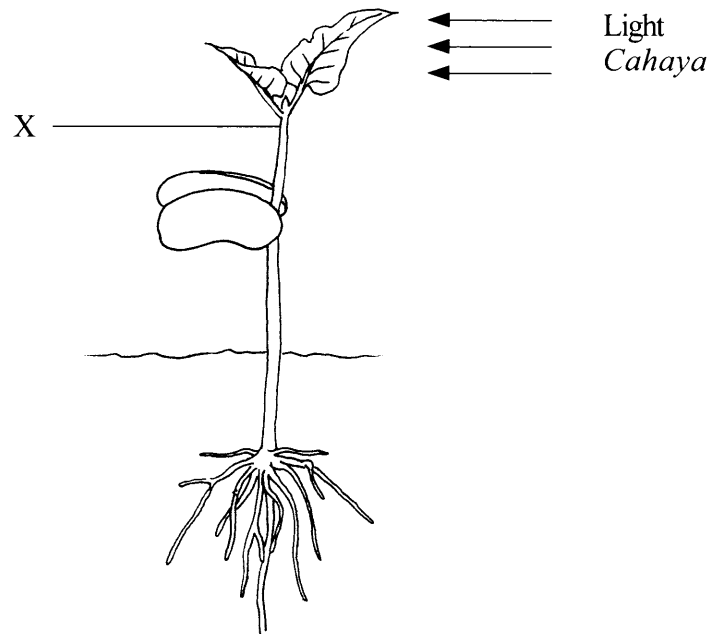


Diagram 15  
*Rajah 15*

What happens to the concentration of auxin and direction of growth at X after being exposed to the light for a few days?

*Apakah yang berlaku kepada kepekatan auksin dan arah pertumbuhan pada X selepas didedahkan kepada cahaya selama beberapa hari?*

	Concentration of auxin <i>Kepekatan auksin</i>	Direction of growth <i>Arah pertumbuhan</i>
A	Low <i>Rendah</i>	Away from light <i>Menjauhi cahaya</i>
B	High <i>Tinggi</i>	Away from light <i>Menjauhi cahaya</i>
C	Low <i>Rendah</i>	Towards light <i>Ke arah cahaya</i>
D	High <i>Tinggi</i>	Towards light <i>Ke arah cahaya</i>

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SULIT

40 Diagram 16 shows a type of neurons.

*Rajah 16 menunjukkan satu jenis neuron.*

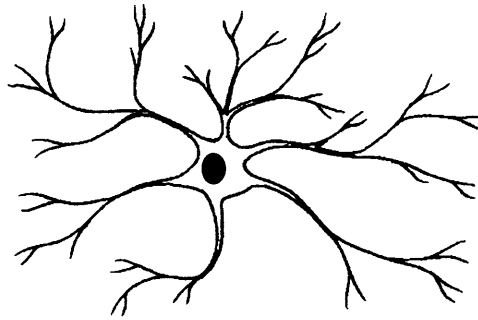


Diagram 16  
*Rajah 16*

What is the type of this neurone?

*Apakah jenis neuron ini?*

**A** Afferent neurone

*Neuron aferen*

**B** Efferent neurone

*Neuron eferen*

**C** Interneurone

*Neuron perantaraan*

**D** Neurotransmitter

*Neurotransmitter*

41 The following are symptoms caused by lack of certain hormone in an adult.

*Berikut adalah simptom-simptom yang disebabkan oleh kekurangan hormon tertentu pada seorang dewasa.*

- Rate of heartbeat is low  
*Kadar denyutan jantung rendah*
- Low metabolism  
*Metabolisma rendah*
- Weight gain  
*Berat bertambah*

Which hormone causes the symptoms?

*Hormon manakah menyebabkan simptom-simptom tersebut?*

A Insulin

*Insulin*

B Thyroxine

*Tiroksina*

C Adrenaline

*Adrenalina*

D Growth hormone

*Hormon pertumbuhan*

[*Lihat halaman sebelah*  
SULIT

42 Diagram 17 shows the implantation of an embryo.

*Rajah 17 menunjukkan penempelan embrio.*

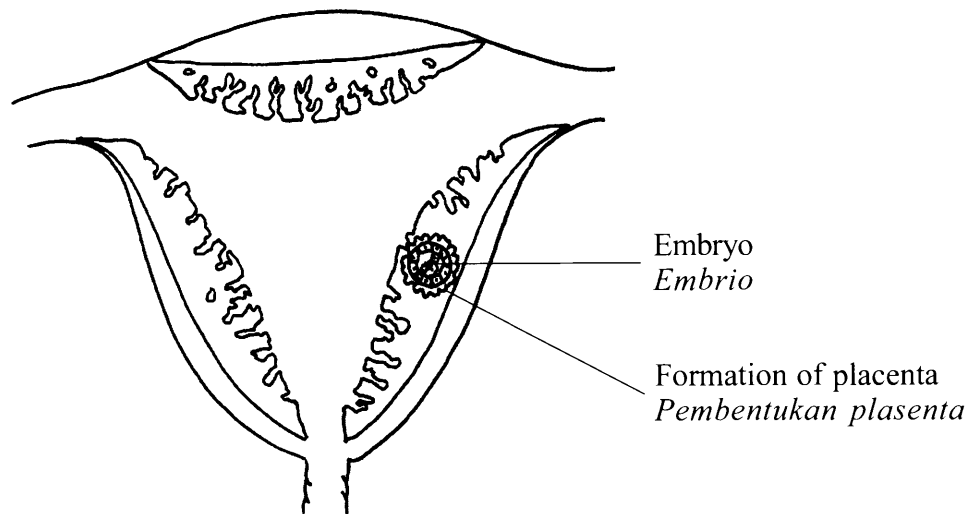


Diagram 17

*Rajah 17*

Misabortion of an embryo occurs due to lack of hormone secreted by the placenta.

Which treatment is most suitable to secure the implantation of the embryo?

*Keguguran embrio berlaku disebabkan kekurangan hormon yang dirembeskan oleh plasenta.*

*Rawatan manakah yang paling sesuai untuk mengukuhkan penempelan embrio?*

- A Injection of FSH  
*Suntikan FSH*
- B Injection of GnRH  
*Suntikan GnRH*
- C Injection of oestrogen  
*Suntikan estrogen*
- D Injection of progesterone  
*Suntikan progesteron*



- 43 Diagram 18 shows a seminiferous tubule.  
*Rajah 18 menunjukkan tubul seminiferus.*

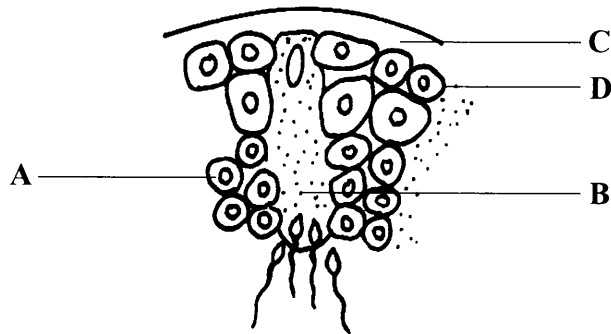


Diagram 18  
*Rajah 18*

Which structure **A**, **B**, **C** or **D** provides nutrients for sperm cells?

*Antara struktur A, B, C dan D, yang manakah menyediakan nutrien kepada sel sperma?*

44

A woman released two secondary oocytes from the ovary during a menstrual cycle.  
*Seorang perempuan membebaskan dua oosit sekunder dari ovari semasa satu kitar haid.*

What type of twins are most likely to be produced?

*Apakah jenis kembar yang mungkin dihasilkan?*

- A** Siamese twins  
*Kembar siam*
- B** Identical twins  
*Kembar seiras*
- C** Fraternal twins  
*Kembar tak seiras*
- D** No formation of twins  
*Tiada pembentukan kembar*

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**SULIT**

45 The following stages occur during spermatogenesis.

*Peringkat-peringkat berikut berlaku semasa spermatogenesis.*

P : Spermatid <i>Spermatid</i>
Q : Spermatogonium <i>Spermatogonium</i>
R : Secondary spermatocyte <i>Spermatosit sekunder</i>
S : Primary spermatocyte <i>Spermatosit primer</i>

Which sequence is correct?

*Urutan manakah yang benar?*

- A P → Q → R → S
- B S → R → Q → P
- C Q → S → R → P
- D Q → S → P → R

46 What is the basic unit of inheritance?

*Apakah unit asas bagi pewarisan?*

- A Genes  
*Gen*
- B Trait  
*Trait*
- C Character  
*Ciri*
- D Chromosome  
*Kromosom*

- 47 What type of gametes can be produced by a garden pea plant heterozygous (BbHh) for flower colour and flower position?

*Apakah jenis gamet yang boleh dihasilkan oleh pokok kacang pea heterozigus (BbHh) untuk warna bunga dan kedudukan bunga?*

- A Bb and Hh  
Bb dan Hh
- B BH and bh  
BH dan bh
- C Bb, Hh, BH and bh  
Bb, Hh, BH dan bh
- D BH, Bh, bH and bh  
BH, Bh, bH dan bh
- 48 What is the number of chromosomes in an individual with Turner's Syndrome?  
*Apakah bilangan kromosom bagi individu yang mempunyai Sindrom Turner?*
- A 45
- B 46
- C 47
- D 48

- 49 Which of the following variations is caused by genetic factors only?  
*Antara variasi berikut, yang manakah disebabkan oleh faktor genetik sahaja?*
- A Intelligence  
*Kepandaian*
  - B Language  
*Bahasa*
  - C Skin colour  
*Warna kulit*
  - D Blood group  
*Kumpulan darah*
- 50 Which characteristic represents continuous variation?  
*Ciri manakah mewakili variasi selanjar?*
- A Height  
*Ketinggian*
  - B Ability to roll tongue  
*Kebolehan menggulung lidah*
  - C Pattern of fingerprints  
*Corak cap jari*
  - D Type of blood group  
*Jenis kumpulan darah*

**END OF QUESTION PAPER**  
***KERTAS SOALAN TAMAT***

**INFORMATION FOR CANDIDATES**  
**MAKLUMAT UNTUK CALON**

1. This question paper consists of **50** questions.  
*Kertas soalan ini mengandungi **50** soalan.*
2. Answer **all** questions.  
*Jawab **semua** soalan.*
3. Answer each question by blackening the correct space on the objective answer sheet.  
*Jawab dengan menghitamkan ruang yang betul pada kertas jawapan objektif.*
4. Blacken only **one** space for each question.  
*Hitamkan **satu** ruang sahaja bagi setiap soalan.*
5. If you wish to change your answer, erase the blackened mark that you have made. Then blacken the space for the new answer.  
*Sekiranya anda hendak menukar jawapan, padamkan tanda yang telah dibuat. Kemudian hitamkan jawapan yang baharu.*
6. The diagrams in the questions provided are not drawn to scale unless stated.  
*Rajah yang mengiringi soalan tidak dilukis mengikut skala kecuali dinyatakan.*
7. You may use a scientific calculator.  
*Anda dibenarkan menggunakan kalkulator saintifik.*