

SULIT
4551/1
Biologi
Kertas 1
September
2009
1¼ jam

4551/1



JABATAN PELAJARAN SELANGOR

PROGRAM PENINGKATAN PRESTASI

SPM 2009

BIOLOGI

Kertas 1

Satu jam lima belas minit

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU

1. Kertas soalan ini mengandungi 50 soalan. Jawab semua soalan dalam kertas ini.
2. Jawab dengan menghitamkan ruangan yang betul pada kertas jawapan yang disediakan. Bagi setiap soalan hitamkan satu ruangan sahaja.
3. Rajah yang mengiringi soalan dimaksudkan untuk memberi maklumat yang berguna bagi menjawab soalan. Rajah tidak dilukis mengikut skala kecuali dinyatakan sebaliknya.
4. Penggunaan kalkulator saintifik yang tidak boleh diprogramkan adalah dibenarkan.

Kertas soalan ini mengandungi 30 halaman bercetak

[Lihat sebelah

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Dapatkan skema Jawapan di Laman

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BIOLOGI 1

1. Diagram 1 shows an animal cell.

[Rajah 1 menunjukkan sel haiwan]

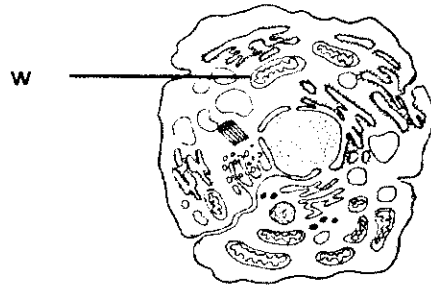


Diagram 1
[Rajah 1]

What is organelle W?
[Apakah organel W?]

- A Nucleus
[Nucleus]
 - B Mitochondrion
[Mitokondria]
 - C Rough endoplasmic reticulum
[Endoplasma retikulum kasar]
 - D Smooth endoplasmic reticulum
[Endoplasma retikulum licin]
2. Diagram 2 shows an aquatic organism.
[Rajah 2 menunjukkan organisma akuatik]

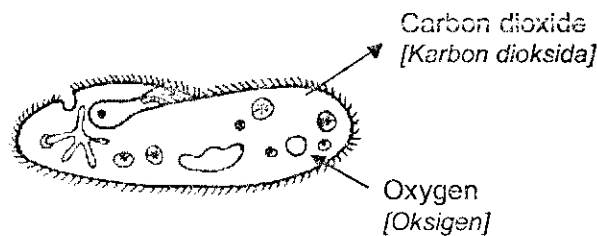


Diagram 2
Rajah 2

Dapatkan skema Jawapan di Laman

What is the process of substances moving in and out of the organism~~s~~ shown by the arrows?

[Apakah proses pergerakan keluar-masuk bahan pada organisma seperti yang ditunjukkan oleh anak panah.]

- A Osmosis
[Osmosis]
- B Diffusion
[Resapan]
- C Active transport
[Pengangkutan aktif]
- D Facilitated diffusion
[Resapan berbantu]

3. If ribosome is **absent** in the cell, which of the following functions cannot be carried out?

[Jika ribosom tiada dalam sel, manakah diantara fungsi berikut yang tidak dapat dijalankan?]

- A Synthesis of proteins
[Sintesis protein]
- B Transport of proteins
[Pengangkutan protein]
- C Synthesis and transport of lipids
[Sintesis dan pengangkutan lipid]
- D Breakdown of unwanted structures
[Penguraian struktur yang tidak diperlukan]

4. What are the processes involved in the movement of mineral ions and water into root hairs?

[Apakah proses yang terlibat dalam pergerakan ion mineral dan air ke dalam akar rerambut?]

	Mineral ions <i>[Ion mineral]</i>	Water <i>[Air]</i>
A	Osmosis <i>[Osmosis]</i>	Active transport <i>[Pengangkutan aktif]</i>
B	Facilitated diffusion <i>[Resapan berbantu]</i>	Osmosis <i>[Osmosis]</i>
C	Osmosis <i>[Osmosis]</i>	Facilitated diffusion <i>[Pengangkutan aktif]</i>
D	Active transport <i>[Pengangkutan aktif]</i>	Osmosis <i>[Osmosis]</i>

Dapatkan skema Jawapan di Laman

5. Diagram 3 shows the movement of substance P across the plasma membrane.
[Rajah 3 menunjukkan pergerakan bahan P merentasi membran plasma]

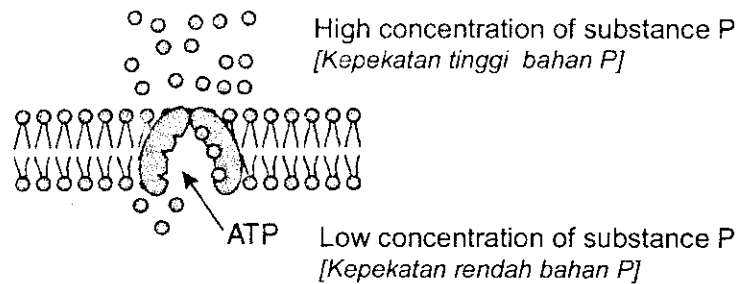


Diagram 3
[Rajah 3]

Substance P moves across the plasma membrane by
[Bahan P bergerak merentasi membrane plasma secara]

- | | | | |
|---|----------------------------------------|---|---------------------------------------------|
| A | osmosis
[Osmosis] | C | active transport
[pengangkutan aktif] |
| B | simple diffusion
[resapan berbantu] | D | facilitated diffusion
[resapan berbantu] |
6. Which of the following are **true** about protein?
[Antara berikut yang manakah benar tentang protein?]
- I Formation of polypeptides is a condensation reaction
[Pembentukan polipeptida adalah suatu tindakan kondensasi]
 - II Breakdown of polypeptides is hydrolysis reaction
[Penguraian polipeptida adalah suatu tindakan tindakan hidrolisis]
 - III Essential amino acids cannot be synthesized by animal cells.
[Asid amino perlu tidak boleh disintesis oleh sel haiwan]
 - IV Non-essential amino acid can be synthesized by animal cells.
[Asid amino tidak perlu dapat disintesis oleh sel haiwan]
- | | | | |
|---|----------------------------------------------|---|------------------------------------------------------|
| A | I and II only
[I dan II sahaja] | C | III and IV only
[III dan IV sahaja] |
| B | I, II and III only
[I, II dan III sahaja] | D | I, II, III and IV only
[I, II, III dan IV sahaja] |

- 7 Diagram 4 shows a molecule of an organic compound.
[Rajah 4 menunjukkan suatu molekul sebatian organik]

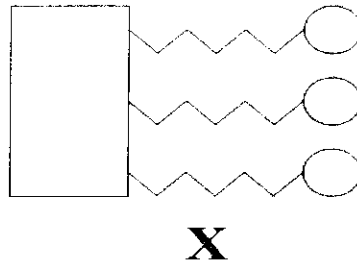


Diagram 4
[Rajah 4]

Which of the following molecules is X?
[Antara berikut yang manakah molekul X?]

- A Sugar
[Gula]
- B Protein
[Protein]
- C Maltose
[Maltosa]
- D Triglycerides
[Trigliserida]
8. Four different food tests were carried out on a food sample.
The results are shown in Table 1.

[Empat ujian makanan yang berbeza telah dijalankan keatas suatu sampel makanan. Keputusan ditunjukkan dalam Jadual 1]

Test tube [Tabung uji]	Test carried out [Ujian yang dijalankan]	Observation [Pemerhatian]
1	Biuret test [Ujian Biuret]	Purple solution [Larutan ungu]
2	Benedict test [Ujian benedict]	Blue solution [Larutan biru]
3	Iodine test [Ujian iodin]	Dark blue [Biru gelap]
4	DCPIP test [Ujian DCPIP]	Colourless solution [Larutan tidak berwarna]

Table 1
[Jadual 1]

Dapatkan skema Jawapan di Laman

The food sample contains

[Makanan tersebut mengandungi]

I	protein [protein]
II	starch [kanji]
III	vitamin C [vitamin C]
IV	reducing sugar [Gula penurunan]

- | | | | |
|---|----------------------------------------|---|----------------------------------------------|
| A | I and IV only
[I dan IV sahaja] | C | I, II and III only
[I, II dan III sahaja] |
| B | II and III only
[II dan III sahaja] | D | I, II, III and IV
[I, II, III dan IV] |

9. Diagram 5 shows a stage during meiosis in an animal cell.
[Rajah 5 menunjukkan suatu peringkat meiosis dalam sel haiwan]

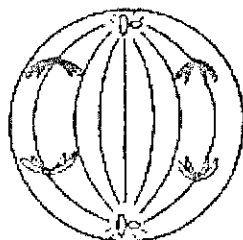


Diagram 5
[Rajah 5]

Which of the statement about the cell is true?

[Manakah diantara pernyataan berikut benar tentang sel tersebut?]

- A The cell is found in the liver.
[Sel tersebut terdapat di dalam hati]
- B The cell has four chromosomes at interphase.
[Sel tersebut mempunyai empat kromosom semasa interfasa]
- C The cell produces diploid daughter cells at the end of the process.
[Sel tersebut menghasilkan sel anak diploid di akhir proses.]
- D The cell produces two daughter cells at the end of the process.
[Sel tersebut menghasilkan dua sel anak di akhir proses.]

Dapatkan skema Jawapan di Laman

Dapatkan skema Jawapan di Laman

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10. Diagram 6 shows metaphase 1 in an animal cell.
[Rajah 6 menunjukkan metafasa 1 dalam sel haiwan]

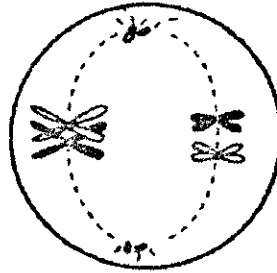


Diagram 6
[Rajah 6]

How many chromosomes are there in the daughter cell ^{after the} of this division?
[Berapakah bilangan kromosom dalam sel anak selepas pembahagian ini?]

- A 2
 - B 4
 - C 8
 - D 16
11. Diagram 7 shows the process of cloning a sheep.
[Rajah 7 menunjukkan proses pengklonan kambing biri-biri]

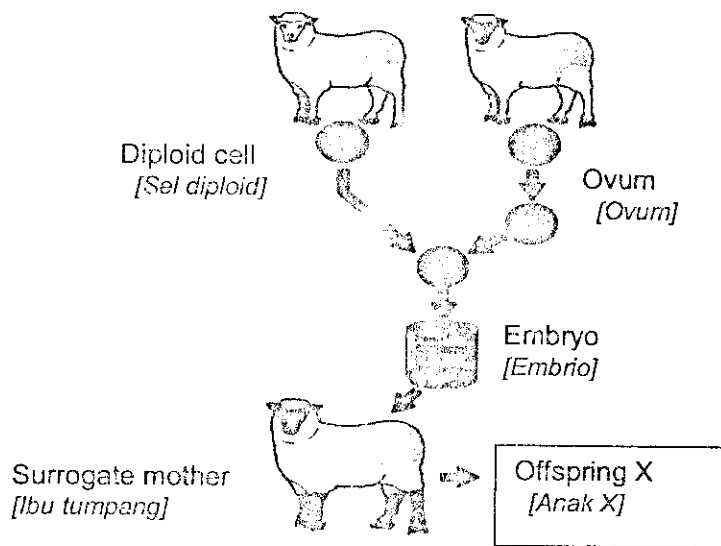
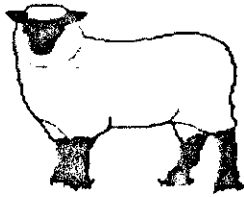


Diagram 7
[Rajah 7]

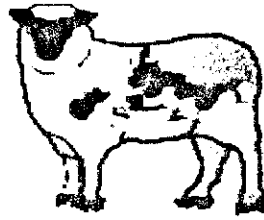
Which of the following is the offspring X?
[Antara yang berikut yang manakah anak X?]

Dapatkan skema Jawapan di Laman

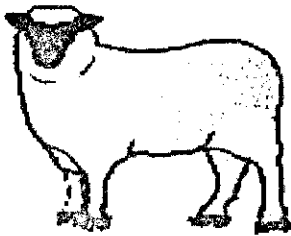
A.



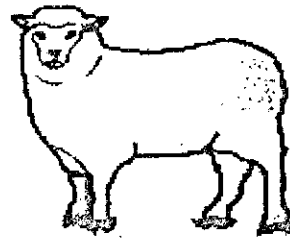
C.



B.



D.



12. Which of the following is an autotrophic organism?
[Antara berikut yang manakah organisma autotrofik?]

- A Cat
[Kucing]
- B Amoeba
[Amoeba]
- C Mushroom
[Cendawan]
- D Hibiscus plant
[Pokok bunga raya]

13 Bleeding gums is due to the deficiency of
[Gusi berdarah disebabkan oleh kekurangan]

- A iron
[besi]
- B calcium
[kalsium]
- C vitamin B
[vitamin B]
- D vitamin C
[vitamin C]

Dapatkan skema Jawapan di Laman

- 14 Which of the following carbohydrates is a disaccharide?
[Antara karbohidrat berikut yang manakah disakarida?]

- | | | | |
|---|------------------------|---|--------------------------|
| A | Fructose
[Fruktosa] | C | Sucrose
[Sukrosa] |
| B | Glucose
[Glukosa] | D | Galactose
[Galaktosa] |

- 15 Diagram 8 shows the human digestive system.
[Rajah 8 menunjukkan sistem pencernaan manusia]

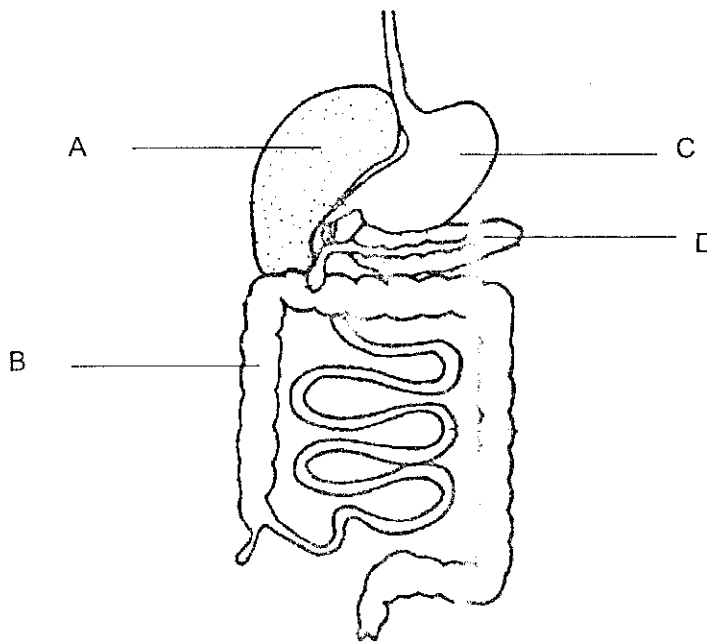


Diagram 8
[Rajah 8]

- Which of the following organs A, B, C or D secrete hydrochloric acid?
[Antara organ A, B, C atau D berikut, yang manakah merembeskan asid hidroklorik?]

16. Diagram 9 shows a across section of a leaf .
 [Rajah 9 menunjukkan keratan rentas sehelai daun.]

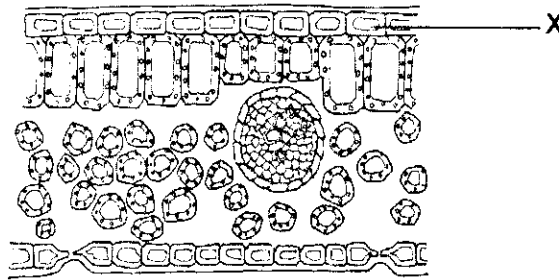


Diagram 9
 [Rajah 9]

What is the adaptation of the **structure X** to optimize photosynthesis?
 [Apakah penyesuaian yang terdapat pada struktur X untuk mengoptimumkan fotosintesis?]

- A Have a lot of chloroplast.
 [Mempunyai banyak kloroplas]
- B Large air spaces between cell.
 [Ruang udara yang besar antara sel]
- C Waterproof layer on the surface.
 [Lapisan kalis air pada permukaan]
- D Cylindrical cell arranged end to end in long, row.
 [Sel berbentuk selindar tersusun hujung ke hujung dalam barisan panjang]
17. Which adaptations help the villi to absorb mineral salts effectively?
 [Penyesuaian yang manakah membantu vilus menyerap garam mineral secara berkesan?]
- I Large in number.
 [Bilangan yang banyak]
- II Thin epithelial walls.
 [Dinding epithelium yang nipis]
- III Lacteal in every villus.
 [Lakteal pada setiap vilus]
- IV Dense blood capillaries.
 [Kapilari darah yang padat]
- A I and II only.
 [I dan II sahaja]
- B II and III only
 [II dan III sahaja]
- C I, II and IV only
 [I, II dan IV sahaja]
- D I, III and IV only
 [I, III dan IV sahaja]

Dapatkan skema Jawapan di Laman

18. Diagram 10 shows the products of a method of food production.
[Rajah 10 menunjukkan hasil daripada suatu kaedah penghasilan makanan.]

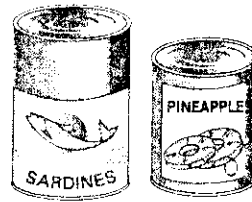


Diagram 10
[Rajah 10]

Which of the following are true about the method?
[Antara berikut yang manakah benar tentang kaedah tersebut?]

- I Discovered by Louis Pasteur.
[Ditemui oleh Louis Pasteur]
- II Foods can be preserved over a year.
[Makanan boleh disimpan lebih daripada setahun]
- III Can destroy enzymes and kill microorganisms
[Boleh memusnahkan enzim dan membunuh mikroorganisma]
- IV Used only for preservation of fish and vegetables
[Hanya digunakan untuk mengawet ikan dan sayur-sayuran]

- | | |
|------------------------------------------|-----------------------------------------------|
| A I and II only.
[I dan II sahaja] | C II and IV only
[II dan IV sahaja] |
| B II and III only
[II dan III sahaja] | D I, III and IV only
[I, II dan IV sahaja] |

19. Diagram 11 shows a respiratory system.
[Rajah 11 menunjukkan sistem respirasi.]

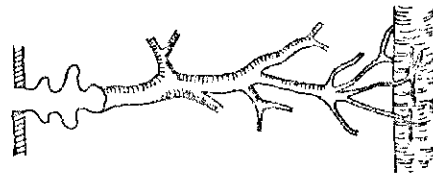


Diagram 11
[Rajah 11]

Which organism has the system?
[Organisma yang manakah mempunyai sistem tersebut?]

- | | |
|--------------------|-------------------------------|
| A Snail
[Siput] | C Housefly
[Lalat] |
| B Frog
[Katak] | D Earthworm
[Cacing tanah] |

Dapatkan skema Jawapan di Laman

- 20 Diagram 12 shows the structure of an amoeba.
 [Rajah 12 menunjukkan struktur Amoeba]

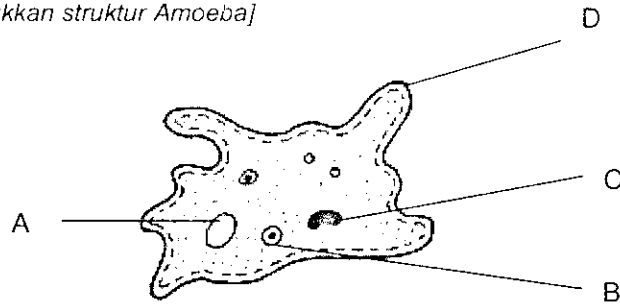


Diagram 12
 [Rajah 12]

Which structures A, B, C or D is involved in gaseous exchange ?
 [Antara struktur A, B, C atau D yang manakah terlibat dalam pertukaran gas?]

- 21 Diagram 13 shows the structure of the gill in a fish.
 [Diagram 13 menunjukkan struktur insang seekor ikan.]

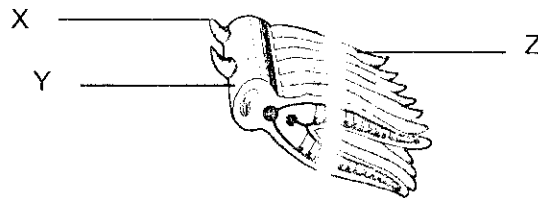


Diagram 13
 [Rajah 13]

What are the parts labeled X, Y and Z ?
 [Apakah bahagian yang berlabel X, Y dan Z?]

	X	Y	Z
A	Gill rakers [Sisir insang]	Gill arch [Lengkung insang]	Gill filaments [Filamen insang]
B	Gill arch [Lengkung insang]	Gill filaments [Filamen insang]	Gill rakers [Sisir insang]
C	Gill filaments [Filamen insang]	Gill rakers [Sisir insang]	Gill arch [Lengkung insang]
D	Gill arch [Lengkung insang]	Gill filaments [Filamen insang]	Gill rakers [Sisir insang]

Dapatkan skema Jawapan di Laman

- 22 Table 2 shows the result obtained from an experiment to determine the percentage of oxygen content in inhaled air using a J-tube.
 [Jadual 2 menunjukkan keputusan yang diperolehi daripada suatu eksperimen untuk menentukan peratus kandungan oksigen dalam udara sedut dengan menggunakan tiub J.]

Length of air column	10 cm
Length of air column upon adding potassium hydroxide solution	9.8 cm
Length of air column upon adding potassium pyrogallate solution	8.0 cm

Table 2
 [Jadual 2]

What is the percentage of oxygen in the inhaled air ?
 [Apakah peratus oksigen dalam udara sedut tersebut?]

- A 18.0 %
 B 18.4 %
 C 80.0 %
 D 81.6 %
- 23 Diagram 14 shows a food chain .
 [Rajah 14 menunjukkan suatu rantai makanan]

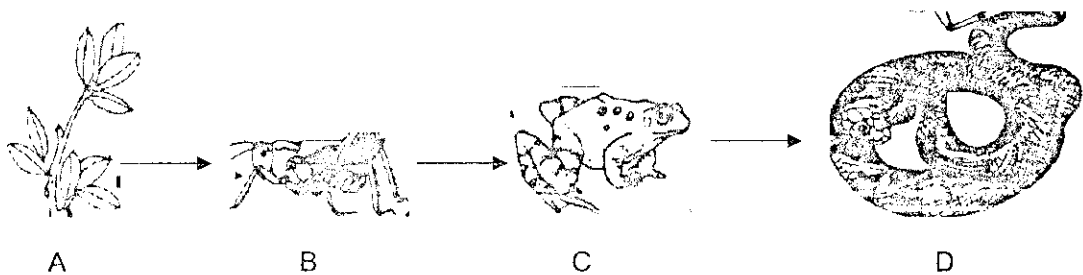


Diagram 14
 [Rajah 14]

Which of the organism A, B, C or D receives the most energy?
 [Manakah organisma A, B, C atau D yang menerima paling banyak tenaga?]

24 Diagram 15 shows a root system of a mangrove plant.
 [Rajah 15 menunjukkan suatu sistem akar pokok bakau]

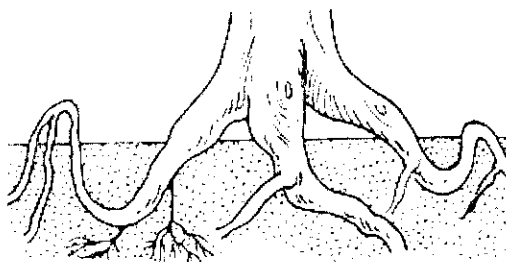


Diagram 15
 [Rajah 15]

Which mangrove plant has the root system?
 [Manakah pokok bakau yang mempunyai sistem akar tersebut?]

- A *Avicennia* sp
- B *Bruguiera* sp
- C *Sonneratia* sp
- D *Rhizophora* sp

25 Diagram 16 shows part of nitrogen cycle.
 [Rajah 16 menunjukkan sebahagian daripada Kitar Nitrogen.]

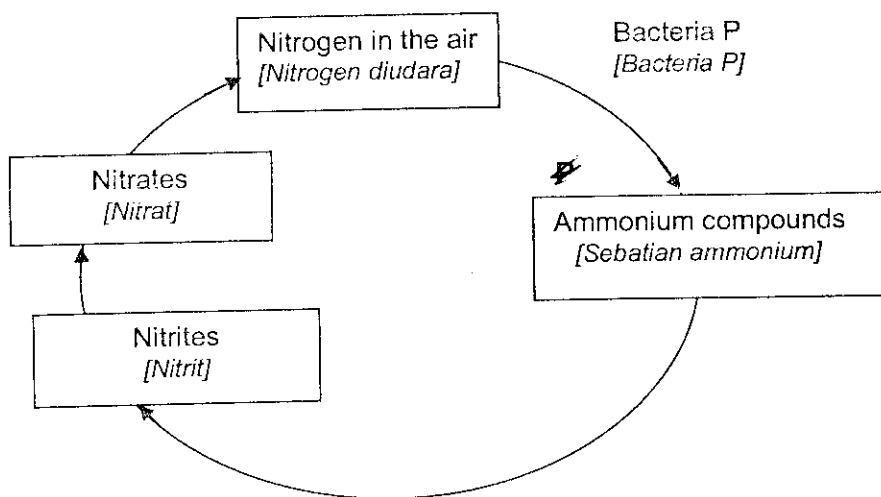


Diagram 16
 [Rajah 16]

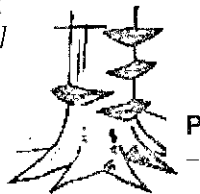
What is the name of bacteria P which change nitrogen in the air to ammonium compounds?

[Apakah nama bakteria P yang menukarkan nitrogen di udara kepada sebatian ammonia?]

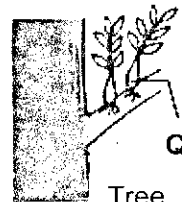
- A Rhizobium
[Rhizobium]
- B Nitrobacter
[Nitrobacter]
- C Nitrosomonas
[Nitrosomonas]
- D Denitrifying bacteria
[Bakteria pendenitritan]

- 26 Diagram 17 shows two types of interaction in plants.
[Rajah 17 menunjukkan dua jenis interaksi pada tumbuhan]

Dead trunk
[Pokok mati]



P



Q

Tree
[Pokok]

Diagram 17
[Rajah 17]

What is organism P and Q?
[Apakah organisma P and Q?]

	P	Q
A	Saprophyte [Saprofit]	Commensal [Komensal]
B	Parasite [Parasit]	Saprophyte [Saprofit]
C	Saprophyte [Saprofit]	Parasite [Parasit]
D	Parasite [Parasit]	Commensal [Komensal]

- 29 The following information is about the use of chlorofluorocarbons.
[Maklumat berikut adalah tentang penggunaan klorofluorokarbon.]

Chlorofluorocarbons are used as coolants in air conditioners and refrigerators, as foaming agent in making styrofoam packing and as propellants in aerosol cans.

[Klorofluorokarbon digunakan sebagai bahan penyejuk dalam penghawa dingin dan peti sejuk, sebagai agen kimia dalam pembuatan bekas polisterin dan sebagai bahan aktif dalam tin aerosol.]

Which of the following is the effect of the intensive use of the above?
[Antara yang berikut, yang manakah kesan penggunaan bahan tersebut secara intensif?]

- A Air pollution
[Pencemaran air]
 - B Eutrophication
[Eutrofikasi]
 - C Ozone depletion
[Penipisan Lapisan Ozon]
 - D Thermal pollution
[Pencemaran Terma]
- 30 Which of the following is **not** one of the prime health risks associated with greater UV radiation due to depletion of ozone layer?
[Antara berikut yang manakah bukan risiko kesihatan yang utama yang dikaitkan dengan pancaran UV kesan daripada penipisan lapisan ozon.]
- A Damage to eyes
[Kerosakan mata]
 - B Reduced immunity
[Merendahkan imuniti]
 - C Increased liver cancer
[Peningkatan kanser hati]
 - D Increased skin cancer
[Peningkatan barah kulit]

- 31 Diagram 18 shows a flow chart of the systemic circulation in human.
[Rajah 18 menunjukkan carta alir peredaran sistemik manusia]



Diagram 18
[Rajah 18]

What is X?

[Apakah organ X?]

- | | | | |
|---|-------------------|---|------------------------------|
| A | Gills
[Insang] | C | Body tissues
[Tisu badan] |
| B | Lungs
[Peparu] | D | Haemocoel
[Hemosel] |
- 32 Diagram 19 shows four types of blood cell in human.
[Rajah 19 menunjukkan empat jenis sel darah manusia]

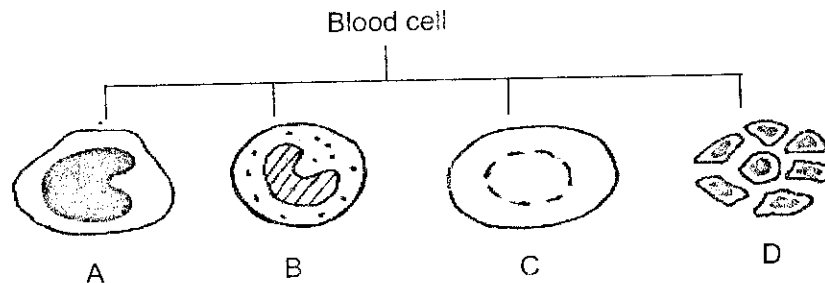


Diagram 19
[Rajah 19]

Which cell labelled A, B, C or D is an erythrocyte?
[Manakah sel yang berlabel A, B, C dan D adalah eritrosit?]

33. The transport of glucose in the phloem is known as
[Pengangkutan glukos dalam floem dikenali sebagai]
- | | | | |
|---|----------------------------------|---|--------------------------------|
| A | Transformation
[Transformasi] | C | Translocation
[Translokasi] |
| B | Transportation
[Pengangkutan] | D | Transpiration
[Transpirasi] |

Dapatkan skema Jawapan di Laman

34. Diagram 20 shows an experiment of bark ringing on the branch of a tree.
 [Rajah 20 menunjukkan suatu eksperimen menggelandkan dahan suatu pokok.]

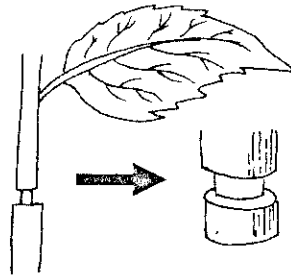


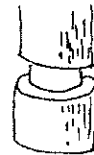
Diagram 20
 [Rajah 20]

What is the condition of the branch after one month?
 [Apakah keadaan dahan tersebut selepas satu bulan?]

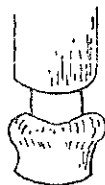
A



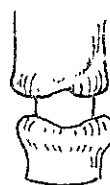
B



C



D



- 35 Diagram 21 shows a potometer which is set up to measure the rate of transpiration in a plant.

[Rajah 21 menunjukkan susunan potometer untuk mengukur kadar transpirasi pada tumbuhan.]

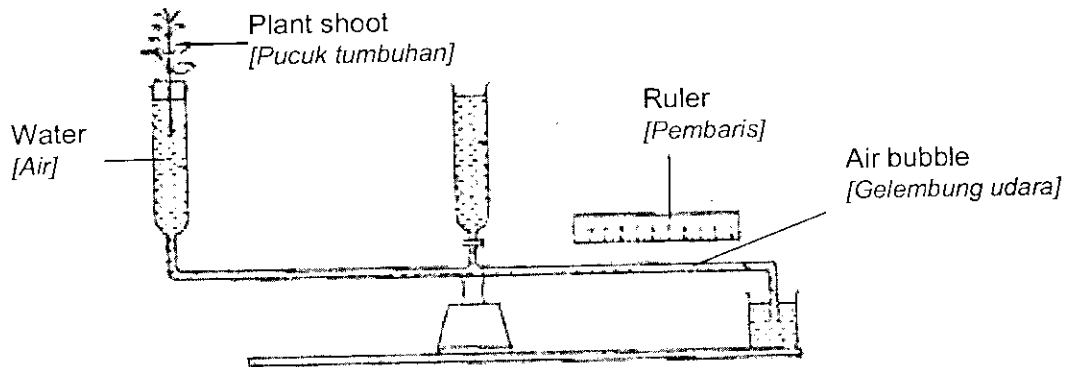


Diagram 21
[Rajah 21]

Time (minute) [Masa (minit)]	Position of air bubble (cm) [Kedudukan gelembung udara (cm)]
0	2.0
10	6.5

Table 4
[Jadual 4]

Table 4 shows the result of the experiment. Calculate the rate of transpiration in the plant.

[Jadual 4 menunjukkan keputusan eksperimen tersebut. Kirakan kadar transpirasi tumbuhan tersebut.]

- A 0.20 cm minute⁻¹
- B 0.45 cm minute⁻¹
- C 0.65 cm minute⁻¹
- D 0.85 cm minute⁻¹

Dapatkan skema Jawapan di Laman

36. Diagram 22 shows a muscle tissue in human.
 [Rajah 22 menunjukkan tisu otot manusia].

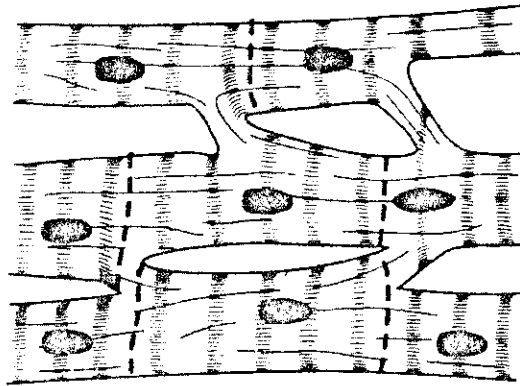


Diagram 22
 [Rajah 22]

Which of the following organs has this type of muscle?
 [Manakah antara organ-organ berikut mempunyai jenis otot tersebut?]

- A Liver
 [Hati]
 - B Heart
 [Jantung]
 - C Kidney
 [Ginjal]
 - D Stomach
 [Perut]
37. Diagram 23 shows the fins of a fish.
 [Rajah 23 menunjukkan sirip-sirip pada seekor ikan.]

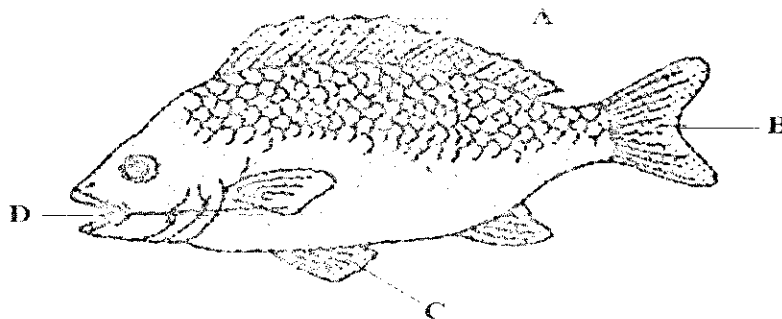


Diagram 23
 [Rajah 23]

Which of the fins A, B, C or D provide forward thrust for the fish in the water?
 [Manakah antara sirip A, B, C atau D menyediakan tujahan ke hadapan bagi ikan di dalam air?]

Dapatkan skema Jawapan di Laman

- 38 Diagram 24 shows the parts of human brain.
 [Rajah 24 menunjukkan bahagian-bahagian otak manusia]

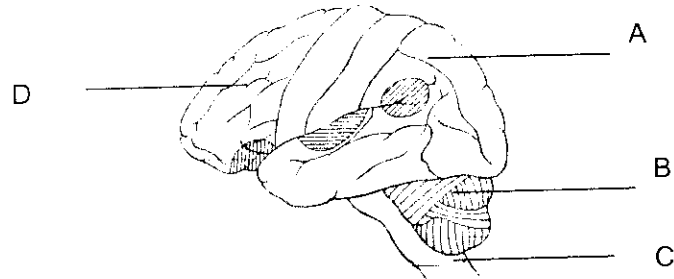


Diagram 24
 [Rajah 24]

Which structure controls muscular coordination?
 [Bahagian manakah yang mengawal koordinasi otot?]

- 39 Diagram 25 shows the internal environment of a multicellular organism.
 [Rajah 25 menunjukkan persekitaran dalaman bagi organisma multisel.]

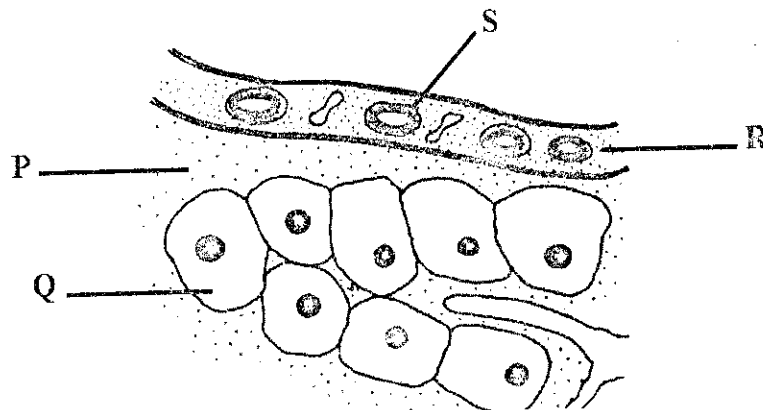


Diagram 25
 [Rajah 25]

Which of the parts labeled P, Q, R or S make up the internal environment?
 [Manakah bahagian yang bertabel A, B, C atau D membentuk persekitaran dalaman?]

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

Dapatkan skema Jawapan di Laman

40. What are the effects of an increase in adrenaline secretion?
 [Apakah kesan perembesan hormone adrenalina?]

	Concentration of glucose in the blood [Kepekatan glukos dalam darah]	Concentration of glycogen in the liver [Kepekatan glycogen dalam hati]
A	Increases [Bertambah]	Decreases [Berkurang]
B	Increases [Bertambah]	Increases [Bertambah]
C	Decreases [Berkurang]	No effect [Tiada kesan]
D	No effect [Tiada kesan]	Increases [Bertambah]

41. A man consumes large quantities of alcohol in a long term.

What type of disease can the man suffer?

[Seseorang meminum kuantiti alkohol yang banyak untuk tempoh yang panjang. Apakah jenis penyakit yang akan dihidapinya?]

- A Alzheimer's disease
[Penyakit Alzheimer]
- B Parkinson's disease
[Penyakit Parkinson]
- C Liver cirrhosis
[Sirosis Hati]
- D Meningitis
[Meningitis]

Dapatkan skema Jawapan di Laman

- 42 Which of the following is a structure developed from integument of a flowering plant after fertilisation.

[Antara berikut yang manakah struktur yang berkembang daripada intergumen suatu tumbuhan berbunga selepas persenyawaan.]

- A Testa
[Testa]
 - B Seed
[Biji]
 - C Fruit
[Buah]
 - D Ovul
[Ovul]
- 43 Diagram 26 shows a process that occurs in a female reproductive system.
[Rajah 26 menggambarkan proses yang berlaku dalam sistem pembiakan perempuan]

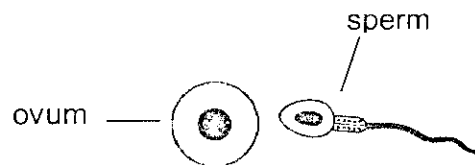


Diagram 26
[Rajah 26]

The fusion of a sperm nucleus and egg nucleus is known as
[Percantuman antara nukleus sperma dan nucleus ovum dikenali sebagai]

- A Ovulation
[Ovulasi]
- B Fertilisation
[Persenyawaan]
- C Implantation
[Penempelan]
- D Menstruation
[Haid]

Dapatkan skema Jawapan di Laman

- 44 Diagram 27 shows a longitudinal section of the root tip of a plant.
 [Rajah 27 menunjukkan keratan memanjang hujung akar tumbuhan]

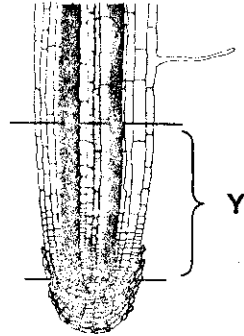


Diagram 27
 [Rajah 27]

Which is the cell that can be found in Zone Y?
 [Apakah sel yang boleh dijumpai pada Zon Y?]

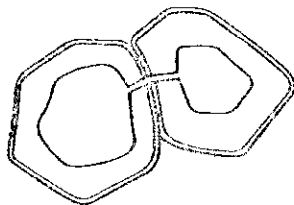
A.



B.



C.



D.



- 45 Which statements are **true** about the differences between spermatogenesis and oogenesis?
 [Pernyataan yang manakah **benar** tentang perbezaan antara spermatogenesis dan oogenesis?]

	Spermatogenesis	Oogenesis
I	The number of gametes produced per meiosis is four. <i>[Bilangan gamet yang terhasil dalam setiap meiosis adalah empat]</i>	The number of gametes produced per meiosis is one. <i>[Bilangan gamet dalam setiap meiosis adalah satu]</i>
II	The size of gametes produced is big. <i>[Saiz gamet yang dihasilkan adalah besar]</i>	The size of gametes produced is small. <i>[Saiz gamet yang dihasilkan adalah kecil]</i>
III	Cytokinesis results in an unequal distribution of the cytoplasm in the daughter cells produced. <i>[Sitokinesis menyebabkan ketidakseimbangan taburan sitoplasma dalam sel anak yang dihasilkan]</i>	Cytokinesis results in an equal distribution of the cytoplasm in the daughter cells produced. <i>[Sitokinesis menyebabkan keseimbangan taburan sitoplasma dalam sel anak yang dihasilkan]</i>
IV	Meiosis occurs continuously and does not stop at any stages. <i>[Meiosis berlaku berterusan dan tidak berhenti pada mana-mana peringkat]</i>	Meiosis does not occur continuously but stops at some stages. <i>[Meiosis tidak berlaku berterusan tapi berhenti pada peringkat yang tertentu]</i>

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

Dapatkan skema Jawapan di Laman

- 46 Diagram 28 shows a method of male contraception.
[Diagram 28 menunjukkan kaedah pemandulan lelaki.]

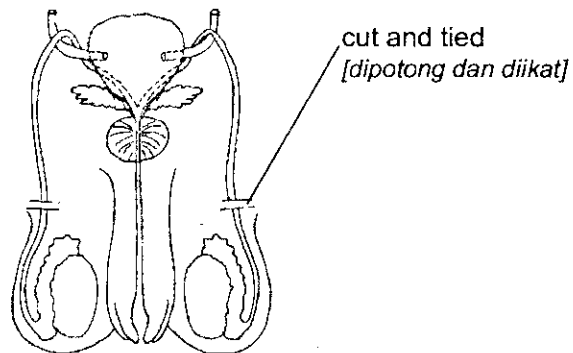


Diagram 28
[Rajah 28]

This method is known as
[Kaedah ini dikenali sebagai]

- A Tubectomy
[Tubektomi]
- B Vasectomy
[Vasektomi]
- C Spermicides
[Spermisides]
- D In-vitro fertilization
[Pensenyawaan in-vitro]
- 47 Which of the following is the genotype for a dominant homozygote?
[Antara berikut yang manakah genotip untuk homozigot dominant?]
- A RRYy
- B RrYy
- C Rryy
- D rryy

Dapatkan skema Jawapan di Laman

- 48 Diagram 29 shows a segment of double helix DNA.
[Rajah 29 menunjukkan segmen helik gandadua DNA.]

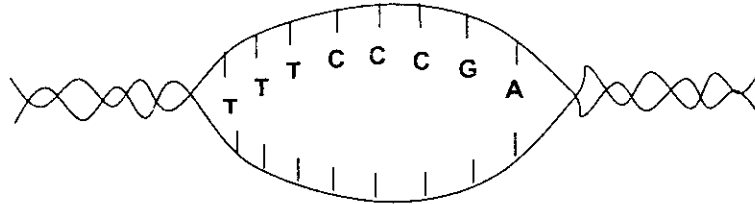


Diagram 29
[Rajah 29]

The sequence of nitrogenous bases in one of a polynucleotide chain in a segment of DNA molecule is TTTCCCGA.

What is the sequence of nitrogenous bases in the other complementary polynucleotide chain ?

[Susunan bes-bes bemitrogen dalam satu rantai nukleotida pada molekul DNA adalah seperti berikut, AATTCCGG.

Apakah susunan bes-bes bemitrogen dalam rantai nukleotida yang bersebelahan dengan rantai ini (rantai heliks ganda dua) ?]

- A ATCTATCG
- B AATTCCGG
- C TTAAGGCC
- D AAAGGGCT

Dapatkan skema Jawapan di Laman

- 49 Diagram 30 shows a histogram of the variation of a character.
[Rajah 30 menunjukkan histogram bagi variasi suatu ciri].

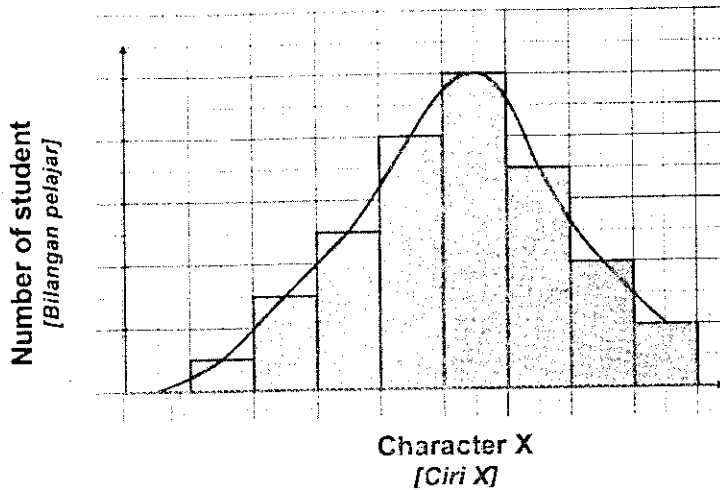


Diagram 30
[Rajah 30]

Which of the following is character X?
[Manakah antara berikut ciri X ?]

- A Height
[Ketinggian]
- B Eye colour
[Warna mata]
- C Blood group
[Kumpulan darah]
- D Tongue-rolling
[Menggulung lidah]

Dapatkan skema Jawapan di Laman

50 Diagram 31 shows the result of a blood test on a student.

[Rajah 31 menunjukkan keputusan ujian darah bagi seorang pelajar.]

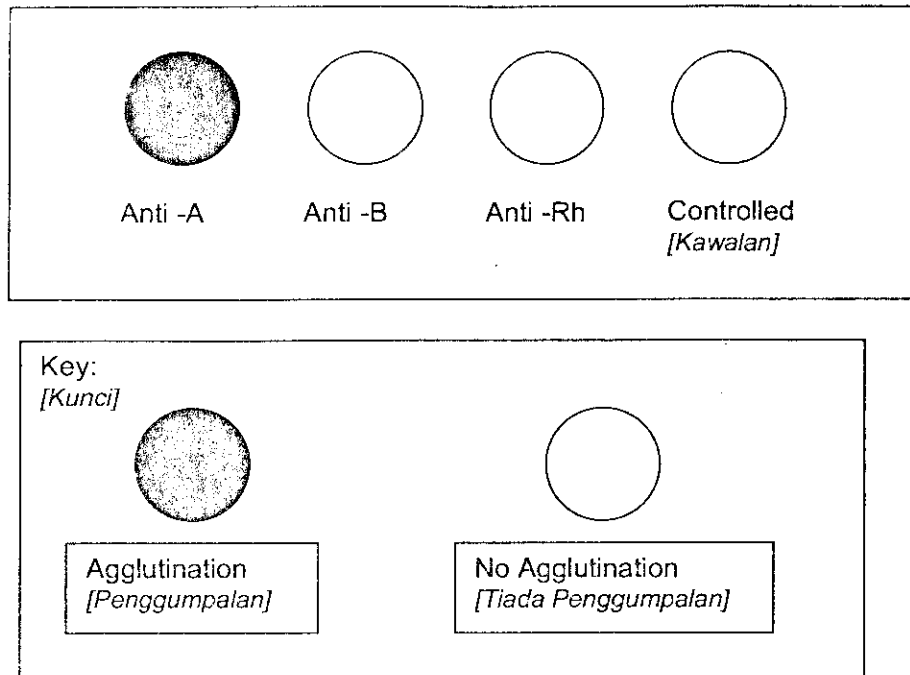


Diagram ~~29~~ 31
[Rajah 29]

Which of the statements is **true** about the student's blood group?
[Antara berikut yang manakah **benar** tentang kumpulan darah pelajar itu ?]

- A Blood group A and rhesus positive.
[Kumpulan darah A dan rhesus positif]
- B Blood group A and rhesus negative.
[Kumpulan darah A dan rhesus negatif]
- C Blood group B and rhesus positive.
[Kumpulan darah B dan rhesus positif]
- D Blood group B and rhesus negative.
[Kumpulan darah B dan rhesus negatif]

END OF QUESTION PAPER
KERTAS SOALAN TAMAT

Dapatkan skema Jawapan di Laman