

NAMA : TING:.....

PERSIDANGAN KEBANGSAAN PENGETUA-PENGETUA
SEKOLAH MENENGAH
NEGERI KEDAH DARULAMAN

PEPERIKSAAN PERCUBAAN SPM 2009**4551/1****BIOLOGY**

Kertas 1

Ogos

 $1 \frac{1}{4}$ 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 belakang kertas soalan ini.*

Kertas soalan ini mengandungi 31 halaman

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

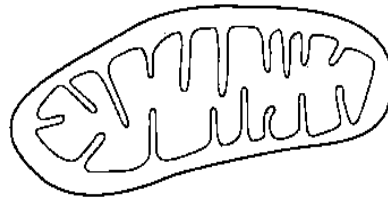


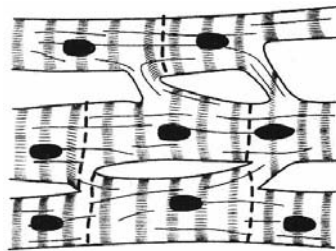
Diagram 1
Rajah 1

Which of the following process takes place in this organelle?
Di antara proses yang berikut, yang manakah berlaku dalam organel tersebut?

- A Respiration
Respirasi
- B Photosynthesis
Fotosintesis
- C Lipid synthesis
Sintesis lipid
- D Protein synthesis
Sintesis protein
- 2 Diagram 2 shows the different structures P, Q and R in a cell organisation.
Rajah 2 menunjukkan pelbagai struktur P, Q dan R dalam organisasi



P



Q



R

Diagram 2
Rajah 2

Which of the following is the correct level of cell organization
Yang manakah antara berikut adalah aras organisasi sel yang betul?

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

- 3 Diagram 3 shows the intake of K into a root cell.
Rajah 3 menunjukkan pengambilan K ke dalam sel akar.

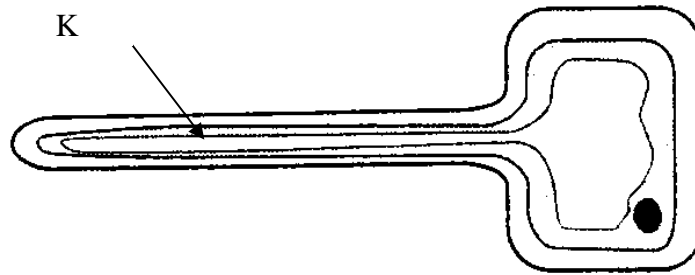


Diagram 3
Rajah 3

The process requires energy. Which of the following is K?
Proses ini memerlukan tenaga. Yang manakah K?

- | | |
|-----------------------------|----------------------|
| A Water Air | C Oxygen Oksigen |
| B Nitrate ion Ion nitrat | D Glucose Glukosa |
- 4 Diagram 4 shows gaseous exchange in an alveolus.
Rajah 4 menunjukkan pertukaran gas dalam alveolus.

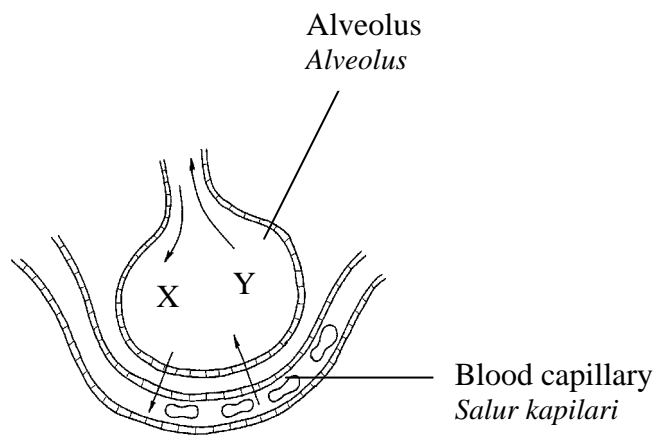


Diagram 4
Rajah 4

Which of the following process occur in the exchange of gases X and Y.
Yang manakah antara proses berikut berlaku dalam pertukaran gas X dan gas Y.

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

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- 6 Diagram 6(a) shows diffusion through a semi-permeable membrane.
Diagram 6(b) shows the result of diffusion after one hour

*Rajah 6(a) menunjukkan resapan melalui membran separa telap.
Rajah 6(b) menunjukkan keputusan resapan selepas satu jam.*

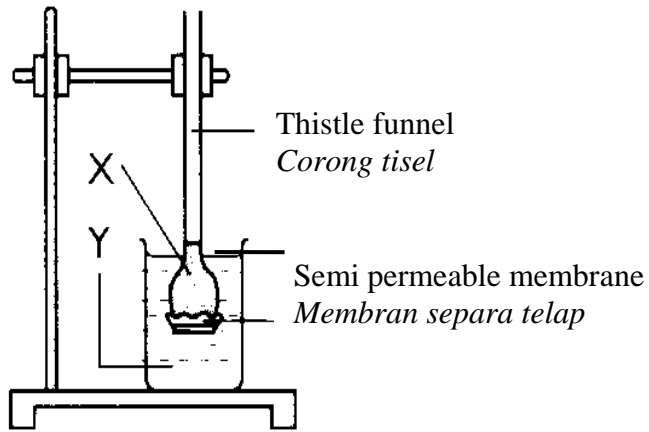


Diagram 6(a)
Rajah 6(a)

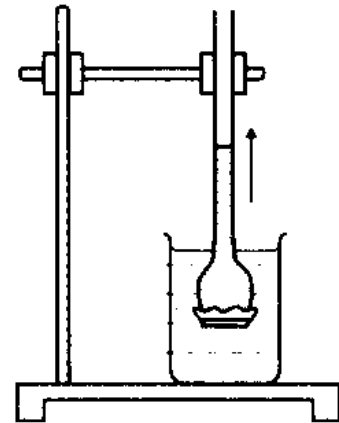


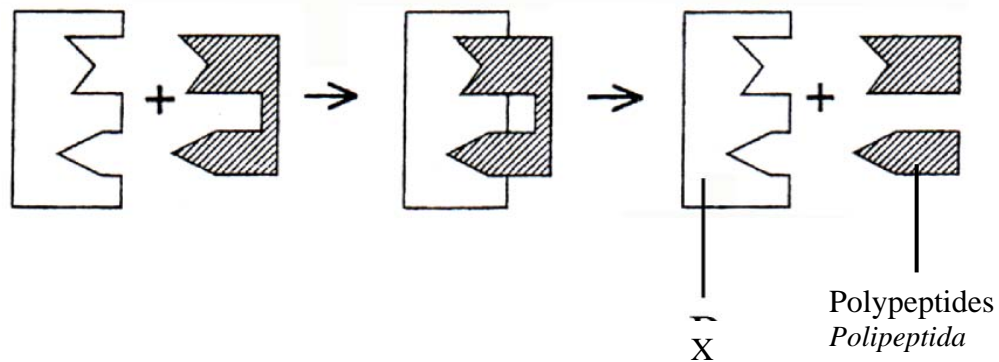
Diagram 6(b)
Rajah 6(b)

After one hour
Selepas satu jam

Which of the following represent X and Y?
Yang manakah antara berikut mewakili X dan Y?

| | X | Y |
|---|--|--|
| A | Distilled water <i>Air suling</i> | 20% sucrose solution <i>20% larutan sukrosa</i> |
| B | 20% sucrose solution <i>20% larutan sukrosa</i> | Distilled water <i>Air suling</i> |
| C | 20% sucrose solution <i>20% larutan sukrosa</i> | 20% sucrose solution <i>20% larutan sukrosa</i> |
| D | Distilled water <i>Air suling</i> | Distilled water <i>Air suling</i> |

- 7 Diagram 7 shows the action of an enzyme on a substrate.
Rajah 7 menunjukkan tindakan enzim ke atas suatu substrat



Rajah 7

Name substance X.
Namakan bahan X

- A Starch
Kanji
- B Protein
Protein
- C Amylase
Amilase
- D Pepsin
Pepsin
- 8 Diagram 8 shows two different types of protein molecules.
Rajah 8 menunjukkan dua jenis molekul protein.



Alpha helix
Heliks alpha

Beta pleated
Lipatan beta

Diagram 8
Rajah 8

Which protein structure does these two types of molecules belong to?
Apakah struktur protein yang ditunjukkan oleh kedua-dua molekul protein itu?

- A Primary structure
Struktur primer
- B Secondary structure
Struktur sekunder
- C Tertiary structure
Struktur tertier
- D Quarternary structure
Struktur kuartener

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- 9 Diagram 9 shows the molecule of an enzyme.
Rajah 9 menunjukkan satu molekul enzim

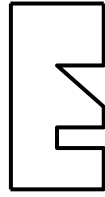
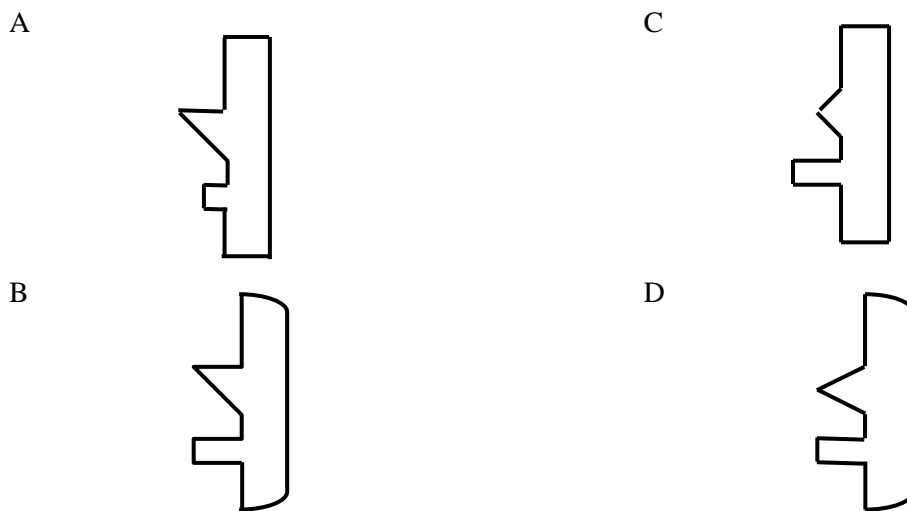


Diagram 9
Rajah 9

Which of the following is the substrate for this enzyme?
Manakah berikut adalah substrat untuk enzim tersebut?



- 10 Diagram 10 shows a chart of the cell cycle.
Rajah 10 menunjukkan carta kitar sel

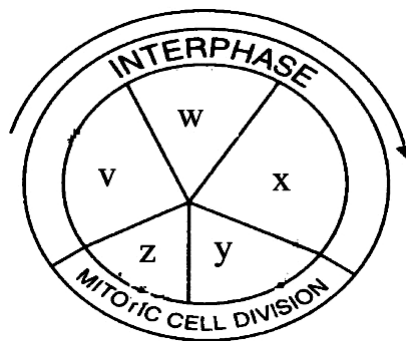


Diagram 10
Rajah 10

In which phase does the cytokinesis takes place?
Di fasa manakah sitokinesis berlaku?

- | | | | |
|---|---|---|---|
| A | V | C | Y |
| B | W | D | Z |

- 11 Diagram 11 shows an animal cell undergoing meiosis I.
Rajah 11 menunjukkan satu sel haiwan sedang mengalami meiosis I

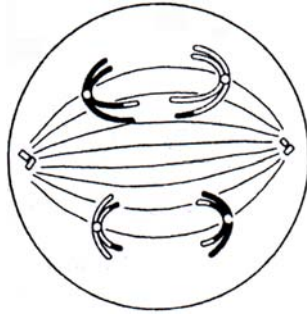


Diagram 11
Rajah 11

How many chromosomes are there in the gamete of this animal?
Berapakah bilangan kromosom dalam gamet haiwan ini?

- A 2
 B 4
 C 6
 D 8
- 12 Table 1 shows the chromosomal behaviour during Prophase I .
Jadual 1 menunjukkan tindakan kromosom dalam profasa I.

| |
|---|
| <p>S – The homologous chromosomes come together to form bivalents <i>Kromosom homolog berdekatan membentuk bivalen</i></p> <p>T - The chromosomes begin to condense <i>Kromosom mula menjadi pendek dan tebal</i></p> <p>U – Crossing over occurs <i>Pindah silang berlaku</i></p> |
|---|

Table 1
Jadual 1

Which of the following shows the correct sequence of the chromosomal behavior?
Yang manakah antara berikut menunjukkan urutan tindakan kromosom yang betul

- A S, U, T
 B U, T, S
 C T, S, U
 D S, T, U

- 13 Diagram 12 shows the structure of a chloroplast seen under an electron microscope.
Rajah 12 menunjukkan struktur kloroplas yang dilihat di bawah mikroskop electron

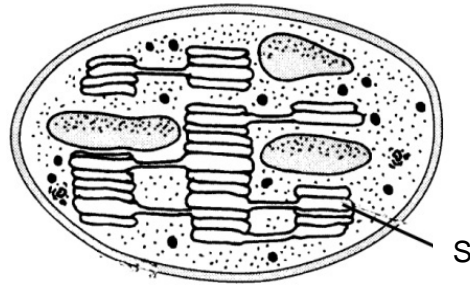


Diagram 12
Rajah 12

Name the process that occurs in S
Namakan proses yang berlaku di S.

- | | | | |
|---|---|---|--|
| A | Reduction of carbon dioxide <i>Penurunan karbon dioksida</i> | C | Photolysis of water <i>Fotolisis air</i> |
| B | Synthesis of glucose <i>Sintesis glukose</i> | D | Synthesis of starch <i>Sintesis kanji</i> |

- 14 Diagram 13 shows the structure of a villus in the ileum
Rajah 13 menunjukkan struktur vili dalam ileum.

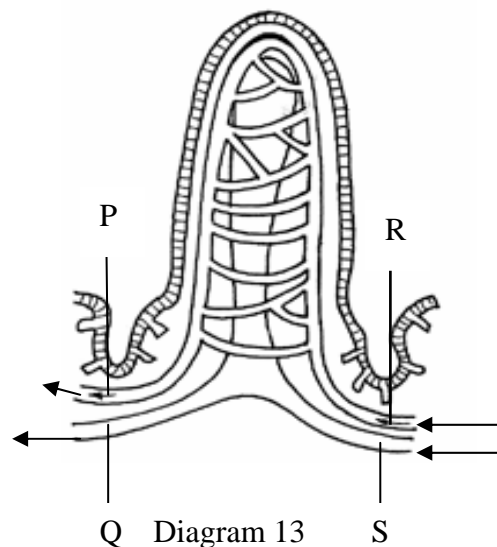


Diagram 13
Rajah 13

Which of the following carry large amounts of glucose and fat-soluble vitamins?
Salur yang manakah membawa banyak glukosa dan vitamin larut dalam lemak?

| | Glucose <i>Glukosa</i> | Fat soluble vitamins <i>Vitamin larut dalam lemak</i> |
|---|---------------------------|--|
| A | P | S |
| B | Q | P |
| C | R | S |
| D | S | Q |

- 15 Table 2 shows the results of an experiment to determine the amount of vitamin C in lime juice.

Jadual 2 menunjukkan satu eksperimen untuk menentukan kandungan vitamin C dalam jus limau.

| Sample <i>Sampel</i> | Volume required to decolourise 1.0 cm ³ of 0.1% DCPIP solution <i>Isipadu yang diperlukan untuk melunturkan 1.0 cm³ larutan 0.1% DCPIP</i> |
|--|---|
| 0.1% Ascorbic acid <i>0.1 % asid askorbik</i> | 0.4 ml |
| Lime juice <i>Jus limau</i> | 2.0 ml |

Table 2

Jadual 2

What is the amount of vitamin C in lime juice?

Berapakah kandungan vitamin C dalam juice limau?

- A 0.2 mg/cm³
 B 0.3 mg/cm³
 C 0.5 mg/cm³
 D 5.0 mg/cm³
- 16 Table 3 shows the observations made when food test is carried out on a food sample P.
Jadual 3 menunjukkan pemerhatian apabila ujian makanan dijalankan terhadap sample makanan P

| Test <i>Ujian</i> | Observation <i>Pemerhatian</i> |
|--|---|
| Millon's Test <i>Ujian Millon</i> | A brick red precipitate <i>Mendakan merah bata</i> |
| Benedict's Test <i>Ujian Benedict</i> | Blue mixture <i>Campuran biru</i> |
| Sudan III Test <i>Ujian Sudan III</i> | The upper layer is red <i>Lapisan atas menjadi merah</i> |
| DCPIP Test <i>Ujian DCPIP</i> | Blue colour disappears <i>Warna biru dilunturkan</i> |

Table 3

Jadual 3

- A Protein, starch, vitamin C.
Protein, kanji, vitamin C
 B Reducing sugar, starch, protein.
Gula menurun, kanji, protein
 C Fats, protein, vitamin C.
Lemak, protein, vitamin C
 D Reducing sugar, fats, protein.
Gula menurun, lemak, protein

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- 17 Diagram 14 shows the process that occurs between the body cells and the tracheole of an insect.

Rajah 14 menunjukkan proses yang berlaku antara sel-sel badan dan trakea di dalam badan serangga.

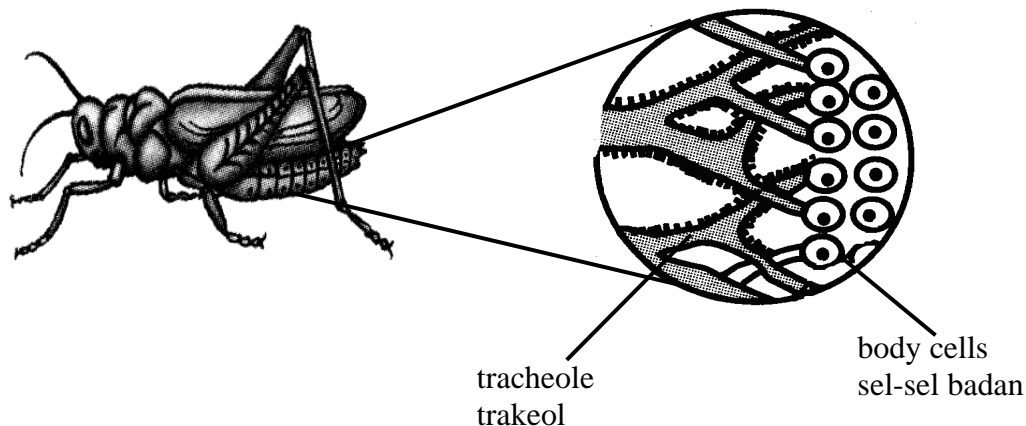


Diagram 14
Rajah 14

Name the process.

Namakan proses tersebut.

- | | |
|--|---|
| A Osmosis <i>Osmosis</i> | C Diffusion <i>Resapan</i> |
| B Facilitated diffusion <i>Resapan berbantu</i> | D Active transport <i>Pengangkutan aktif</i> |

- 18 Diagram 15 shows the characteristics of both aerobic respiration and anaerobic respiration.
Rajah 15 menunjukkan ciri-ciri untuk kedua-dua respirasi aerobik dan respirasi anaerob.

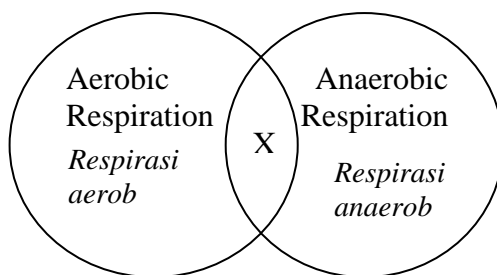


Diagram 15
Rajah 15

Which of the following is true about X?

Yang manakah antara berikut benar tentang X?

- | |
|--|
| A ATP is released <i>ATP dihasilkan</i> |
| B Lactic acid is formed <i>Asid laktik dihasilkan</i> |
| C Water is formed <i>Air dihasilkan</i> |
| D Glucose is formed <i>Glukosa dihasilkan</i> |

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- 19 Diagram 16 shows the arrangement of apparatus to measure the percentage of certain gas in the air.

Rajah 16 menunjukkan radas untuk pengukuran peratus gas tertentu di dalam udara

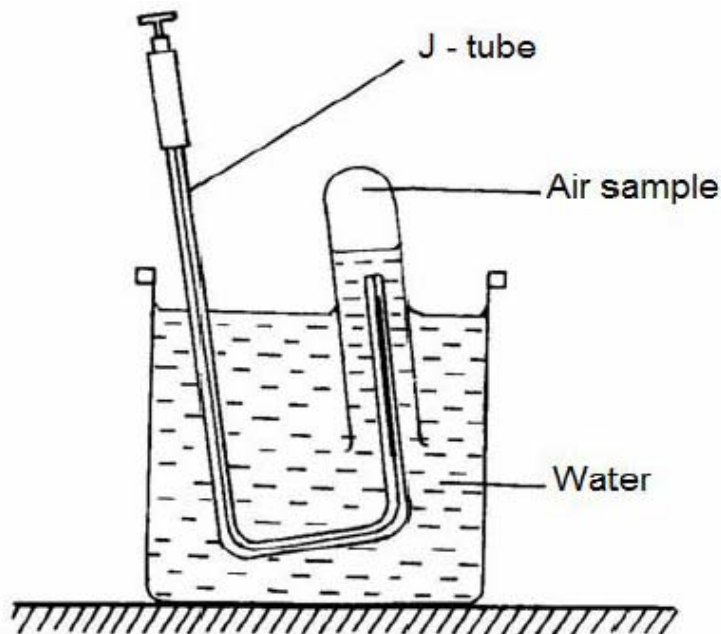


Diagram 16

Rajah 16

Initial length of the air column10.00cm

Panjang awal kolum udara10.00cm

Length of air column after using potassium hydroxide solution9.8cm

Panjang kolum udara setelah larutan kalium hidroksida digunakan9.8cm

Length of air column after using alkaline potassium pyrogallate7.8cm

Panjang kolum udara setelah alkali kalium pirogalol digunakan7.8cm

Calculate the percentage of oxygen content in the inhaled air.

Kirakan peratus oksigen di dalam udara yang disedut.

- A 12%
- B 16%
- C 18%
- D 20%

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- 20 Diagram 17 is a graph which shows the changes of pressure in the lungs of a person.
Rajah 17 ialah graf yang menunjukkan perubahan tekanan dalam peparu seseorang.

Air pressure in the lungs (mm Hg)
Tekanan dalam peparu (mmHg)

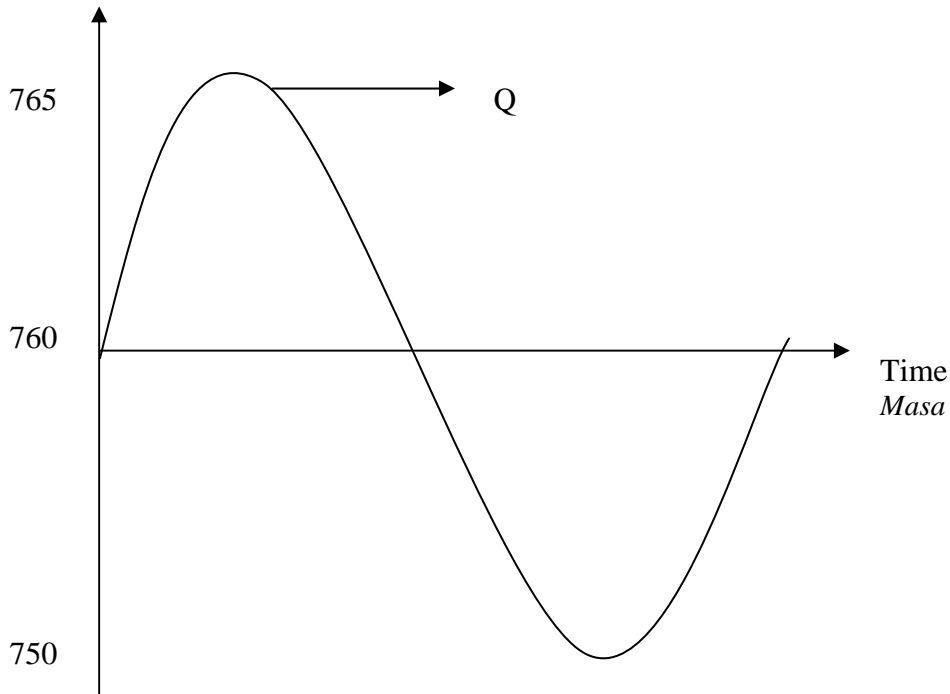


Diagram 17
Rajah 17

Which of the following occurs at Q?

Yang manakah antara berikut berlaku di Q?

- A The ribs move upwards and the diaphragm downwards
Sangkar rusuk bergerak ke atas dan diafragma ke bawah
- B The ribs move upwards and the diaphragm flattens
Sangkar rusuk bergerak ke atas dan diafragma mendatar
- C The ribs move downwards and the diaphragm curves upwards
Sangkar rusuk bergerak ke bawah dan diafragma melengkung ke atas
- D The ribs move downwards and the diaphragm flattens
Sangkar rusuk bergerak ke bawah dan diafragma melengkung ke atas

- 21 Diagram 18 shows two organism living together.
Rajah 18 menunjukkan dua organisma yang hidup bersama.

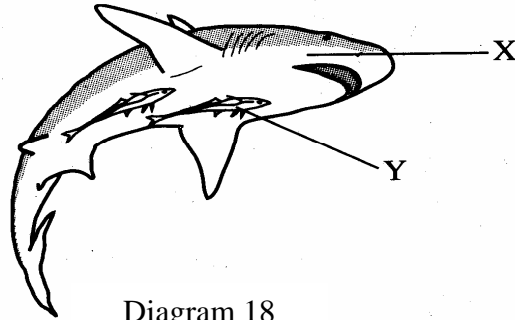


Diagram 18
Rajah 18

Which of the following describe the relationship between a remora fish (Y) and a shark (X)?
Manakah antara berikut menerangkan perhubungan antara ikan remora (Y) dan jerung(X)?

| | Shark (X) | Remora fish (Y) |
|---|------------------------------------|-------------------------------------|
| A | Host <i>Perumah</i> | Endoparasites <i>Endoparasit</i> |
| B | Epizyote <i>Epizoit</i> | Host <i>Perumah</i> |
| C | Host <i>Perumah</i> | Commensal <i>Komensal</i> |
| D | Ectoparasite <i>Ektoparasit</i> | Host <i>Perumah</i> |

- 22 Diagram 19 shows a type of plant in the mangrove swamp.
Rajah 19 menunjukkan sejenis tumbuhna bakau.

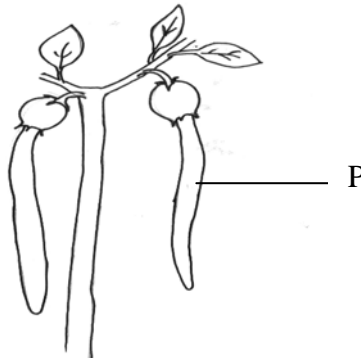


Diagram 19
Rajah 19

What is structure P ?
Apakah struktur P?

- | | |
|--|---|
| A Prop roots <i>Akar jangkang</i> | C Pneumatophore <i>Pneumatofor</i> |
| B Vivipary seeds <i>Biji benih vivipari</i> | D Succulent leaves <i>Daun sukulen</i> |

- 25 Table 5 shows the time taken for methylene blue solution to decolourise in three water samples of P, Q and R.

Jadual 5 menunjukkan masa yang diambil untuk larutan biru metilena menjadi tidak berwarna bagi tiga sampel air iaitu P, Q dan R

| Water sample <i>Sampel air</i> | P | Q | R |
|---|-------------------------|-------------------------|-------------------------|
| Time taken for methylene blue solution to decolourise <i>Masa untuk metilena biru menjadi tidak berwarna</i> | 8 hours <i>8 jam</i> | 3 hours <i>3 jam</i> | 5 hours <i>5 jam</i> |

Table 5

Jadual 5

Which of the following is the sample water for P, Q and R ?

Manakah yang berikut mungkin adalah sampel air P, Q dan R ?

| | P | Q | R |
|---|------------------------------------|------------------------------------|--------------------------------|
| A | Pond water <i>Air kolam</i> | Drain water <i>Air longkang</i> | Tap water <i>Air paip</i> |
| B | Drain water <i>Air longkang</i> | Tap water <i>Air paip</i> | Pond water <i>Air kolam</i> |
| C | Drain water <i>Air longkang</i> | Pond water <i>Air kolam</i> | Tap water <i>Air paip</i> |
| D | Tap water <i>Air paip</i> | Drain water <i>Air longkang</i> | Pond water <i>Air kolam</i> |

- 26 The CFCs in the air condition and refrigerator have been replaced by HCFC. Which of the following statement explains the reason for the replacement?

Kandungan CFC di dalam penghawa dingin dan peti sejuk telah digantikan penggunaannya dengan HCFC.

Di antara pernyataan berikut yang manakah menerangkan sebab penggantian bahan tersebut?

- A HCFC cost is cheaper compare to CFC
Kos HCFC lebih murah berbanding dengan CFC
- B HCFC is not easily broken by the UV compare to CFC
HCFC tidak dapat diuraikan dengan mudah oleh sinaran UV berbanding CFC
- C HCFC is a lot cooler gas compared to CFC
HCFC lebih menyejukkan berbanding CFC
- D HCFC is heavier gas so it does not rise to the atmosphere
HCFC adalah gas berat, oleh itu ia tidak boleh sampai ke atmosfera

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- 27 Diagram 21 shows a type of pollution.
Rajah 21 menunjukkan sejenis pencemaran.



Diagram 21
Rajah 21

Which of the following is the effect of this type of pollution?
Manakah antara berikut adalah kesan daripada pencemaran ini?

- A Photosynthesis in aquatic plants is increased
Fotosintesis pada tumbuhan akuatik meningkat
- B Growth rate in aquatic organism is increased
Kadar pertumbuhan pada organisma akuatik bertambah
- C Population of aquatic organism is reduced
Populasi organisma akuatik berkurangan
- D Trophic level in the food chain is increased
Aras trofik dalam rantai makanan bertambah

- 28 Diagram 22 shows the cross-section of a stem.
Rajah 22 menunjukkan keratan rentas batang

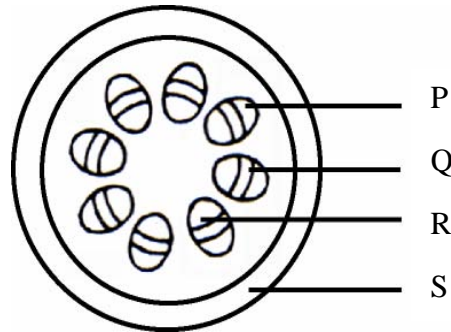


Diagram 22
Rajah 22

If the plant is exposed to radioactive carbon dioxide during the day, which tissue will be the first to become radioactive?

Sekiranya tumbuhan didedahkan kepada radioaktif karbon dioksida, tisu yang manakah pertama menjadi radioaktif?

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

- 29 Diagram 23 shows a stage in the blood clotting mechanism.
Rajah 23 menunjukkan satu peringkat di dalam mekanisme pembekuan darah.

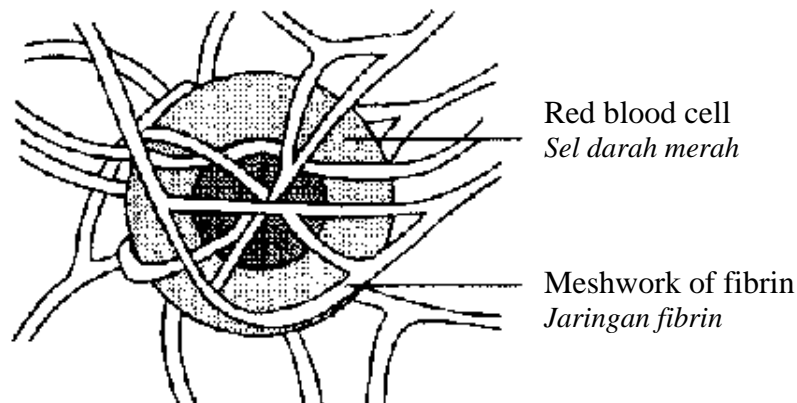


Diagram 23
Rajah 23

Which of the statement explains this stage?

Antara pernyataan berikut yang manakah menerangkan peringkat ini?

- A Thromboplastin converts prothrombin to thrombin
Tromboplastin menukarkan protrombin kepada thrombin
- B Platelets stimulate the formation meshwork of fibrin.
Platlet merangsang pembentukan jaringan fibrin.
- C Thrombin converts fibrinogen to meshwork of fibrin.
Trombin menukarkan fibrinogen kepada jaringan fibrin
- D Platelets release the thromboplastin to form meshwork of fibrin
Platlet membebaskan tromboplastin untuk membentuk jaringan fibrin

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- 30 Diagram 24 shows the blood circulatory system in human.
 Diagram 24 menunjukkan sistem peredaran darah dalam manusia

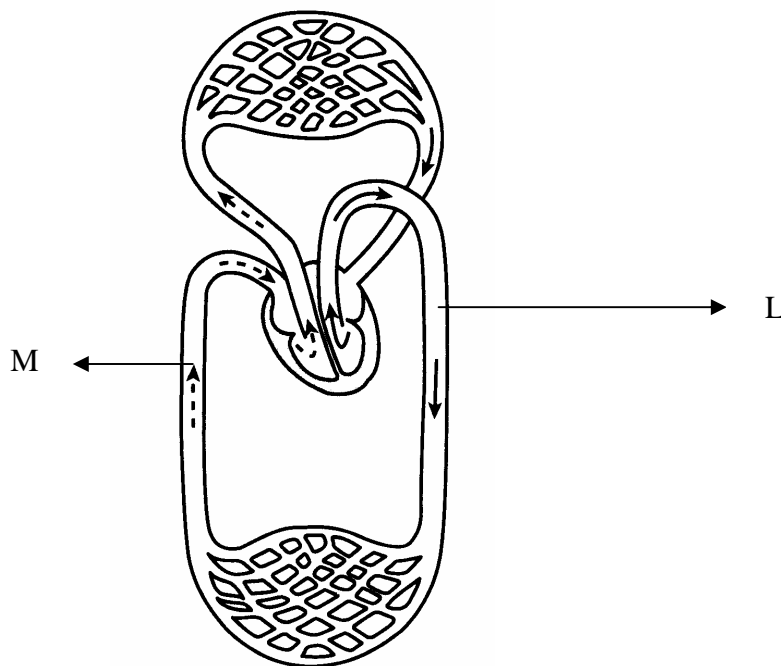


Diagram 24
 Rajah 24

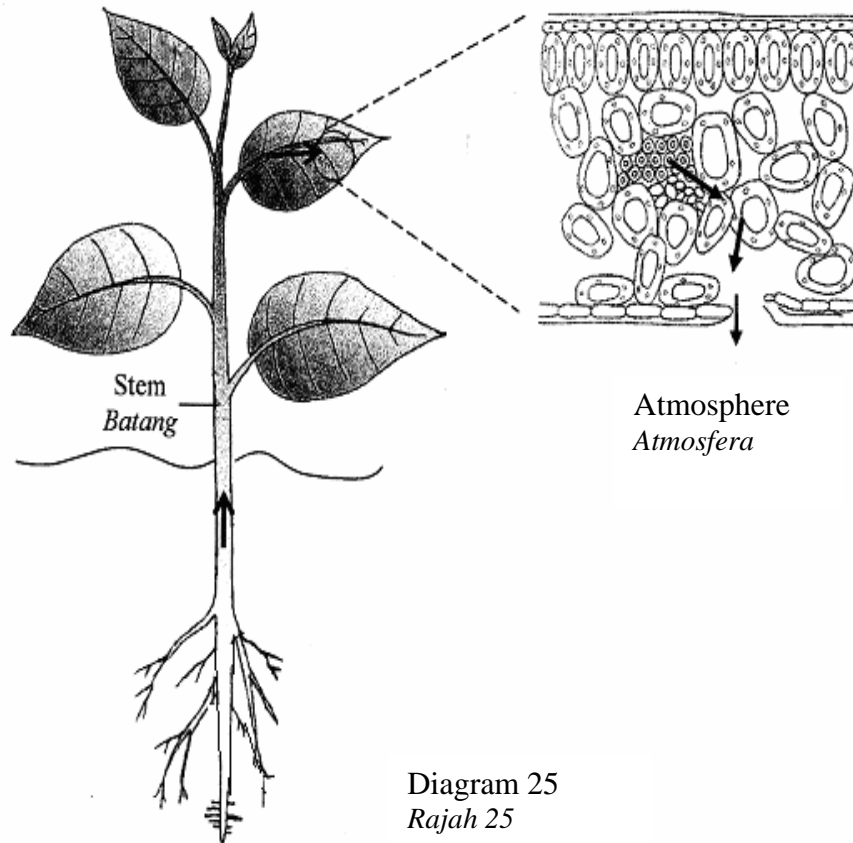
Which of the following is TRUE about the blood flow and the blood pressure at L and M?
 Antara berikut manakah yang benar tentang peredaran darah dan tekanan, darah pada L dan M

| | L | | M | |
|---|---------------------------------------|--|---------------------------------------|--|
| | Blood flow <i>Pengaliran darah</i> | Blood pressure <i>Tekanan darah</i> | Blood flow <i>Pengaliran darah</i> | Blood pressure <i>Tekanan darah</i> |
| A | Fast <i>Cepat</i> | High <i>Tinggi</i> | Slow <i>Perlahan</i> | Low <i>Rendah</i> |
| B | Fast <i>Cepat</i> | Low <i>Rendah</i> | Slow <i>Perlahan</i> | Low <i>Rendah</i> |
| C | Slow <i>Perlahan</i> | High <i>Tinggi</i> | Fast <i>Cepat</i> | High <i>Tinggi</i> |
| D | Slow <i>Perlahan</i> | Low <i>Rendah</i> | Fast <i>Cepat</i> | High <i>Tinggi</i> |

- 31 Which antibody causes the bacteria to clump together?
 Apakah jenis antibodi yang menyebabkan bakteria untuk menggumpal bersama?

- | | | | |
|---|---------------------------------|---|--------------------------------|
| A | Antitoxin <i>Anti toksin</i> | C | Agglutinin <i>Aglutinin</i> |
| B | Opsonin <i>Opsonin</i> | D | Lysin <i>Lisin</i> |

- 32 Diagram 25 shows that during transpiration, water molecules escape from the surface of the leaves will draw other water molecules from the mesophyll cells.
Rajah 25 menunjukkan semasa transpirasi, molekul air keluar daripada permukaan daun akan menyebabkan molekul air yang lain masuk ke dalam mesofil sel



Which phenomenon best describes this process?
Apakah fenomena yang menerangkan proses ini?

- A Capillary action
Tindakan kapilari
- B Transpirational pull
Tarikan transpirasi
- C Cohesive force
Daya lekatan
- D Adhesion force
Daya lekitan

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- 33 Diagram 26 shows the structure of a human arm with muscle P and Q.
Rajah 26 menunjukkan otot P dan Q pada struktur lengan manusia .

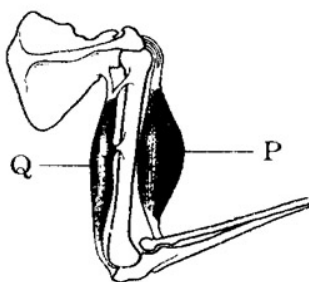


Diagram 26
Rajah 26

Which of the following pair of muscles action is true ?
Antara tindakan pasangan otot berikut yang manakah benar?

- | P | Q |
|--------------------------------|------------------------------|
| A Contracts <i>Mengecut</i> | Relaxes <i>Relax</i> |
| B Relaxes <i>Relax</i> | Contracts <i>Mengecut</i> |
| C Contracts <i>Mengecut</i> | Expands <i>Memanjang</i> |
| D Expands <i>Memanjang</i> | Contracts <i>Mengecut</i> |
- 34 Diagram 27 shows a structure of a human cervical vertebra.
Rajah 27 menunjukkan struktur vertebra serviks yang terdapat pada manusia.

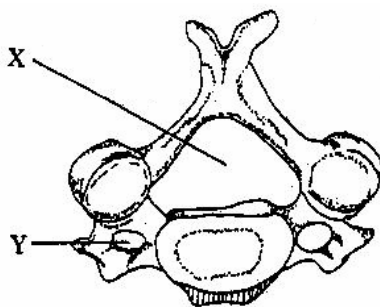


Diagram 27
Rajah 27

What are the structures located in the parts labelled X and Y ?
Apakah struktur yang terdapat pada bahagian yang belabel X dan Y?

| | X | Y |
|---|-------------------------------------|-------------------------------------|
| A | Neurone <i>Neuron</i> | Blood vessel <i>Salur darah</i> |
| B | Blood vessel <i>Salur darah</i> | Spinal cord <i>Saraf tunjang</i> |
| C | Spinal cord <i>Saraf tunjang</i> | Blood vessel <i>Salur darah</i> |
| D | Blood vessel <i>Salur darah</i> | Neuron <i>Neuron</i> |

- 35 Diagram 28 shows a joint in human skeletal system.
Rajah 28 menunjukkan sendi yang terdapat sistem rangka manusia.



Diagram 28
Rajah 28

What is the function of X ?
Apakah fungsi X?

- A Attach bone to the bone.
Menghubungkan tulang dengan tulang
- B Secretes fluid to lubricate the joint.
Merembeskan cecair untuk melicinkan pergerakan sendi.
- C Reduces friction between the bones
Mengurangkan geseran antara tulang
- D Prevents the bones from being dislocated.
Mencegah tulang daripada berganjak
- 36 Which of the following tissues is responsible for support in aquatic plant?
Tisu manakah di antara berikut memberi sokongan kepada tumbuhan air?
- A Parenchyma tissue
Tisu parenkima
- B Aerenchyma tissue
Tisu aerenkima
- C Sclerenchyma tissue
Tisu Sklerenkima
- D Collenchyma tissue
Tisu kolenkima

- 37 Diagram 29 shows a knee jerk action.
Rajah 29 menunjukkan tindakan sentakan lutut.

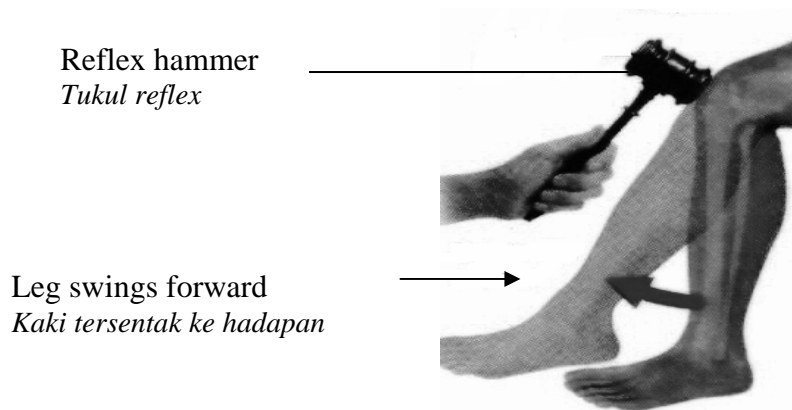


Diagram 29
Rajah 29

Which of the following is the correct direction of impulse when the knee jerk test has been done ?

Antara berikut yang manakah benar mengenai laluan impuls apabila ujian sentakan lutut dijalankan..

- A Receptor → afferent neurone → interneuron → efferent neurone → effector.
Reseptor → neuron aferen → interneuron → neuron eferen → efektor.
- B Receptor → afferent neurone → efferent neurone → effector.
Reseptor → neuron aferen → neuron eferen → efektor.
- C Effector → afferent neurone → efferent neurone → receptor.
Efektor → neuron aferen → neuron eferen → reseptor.
- D Receptor → efferent neurone → interneuron → afferent neurone → effector.
Reseptor → neuron eferen → interneuron → neuron aferen → efektor.
- 38 Which of the following situation is regulated by both hormones and nerves in the human body ?
Manakah situasi yang berikut dikawalatur oleh kedua-dua hormon dan sistem saraf badan manusia?
- A While having a favourite food
Semasa menikmati makanan kegemaran
- B Accidentally touches something hot
Menyentuh objek yang panas secara tidak sengaja
- C While being chased by a dog
Semasa dikejar seekor anjing
- D While listening to sentimental music.
Semasa menikmati muzik sentimental

- 39 Diagram 30 shows the structure of a nephron
Rajah 30 menunjukkan struktur nefron

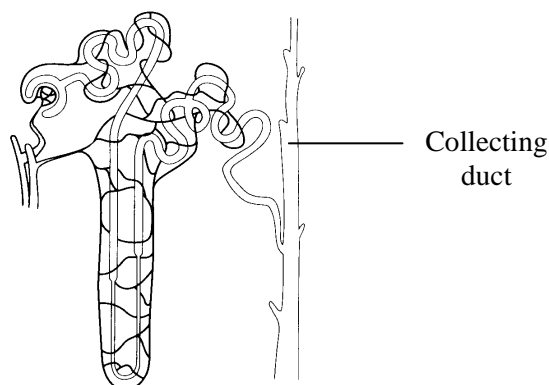


Diagram 30
Rajah 30

- Which of the following may occur if collecting duct is more permeable to water?
Manakah antara berikut yang mungkin berlaku jika ketelapan duktus pengumpul terhadap air meningkat ?
- A The urine produced is more but in a dilute form
Urin yang dihasilkan lebih banyak dan dalam keadaan cair
- B The urine produced is little but concentrated
Urine yang dihasilkan sedikit dan pekat
- C Concentration and the amount of urine decrease
Kepekatan dan kuantiti urin berkurangan
- D Concentration and the amount of urine increase
Kepekatan dan kuantiti urin meningkat.
- 40 Why does a farmer place a few unripe fruits together with ripe fruits?
Mengapakah petani meletakkan beberapa biji buah yang tidak masak dengan buah yang masak ranum?
- A This can make the unripe fruits sweeter and juicer
Ini membolehkan buah yang tidak masak menjadi lebih manis dan berjus
- B This can quicken the ripening of the unripe fruits.
Ini membolehkan buah yang tidak masak menjadi lebih cepat masak
- C This can make the colour of ripe fruits more attractive.
Ini membolehkan warna buah yang masak menjadi lebih menarik
- D This can make the ripe fruits keep longer
Ini membolehkan warna buah yang masak menjadi lebih menarik

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41 Diagram 31 is a graph which shows two hormones released by human's ovary.

Rajah 31 menunjukkan hormon yang dihasilkan oleh ovari manusia.

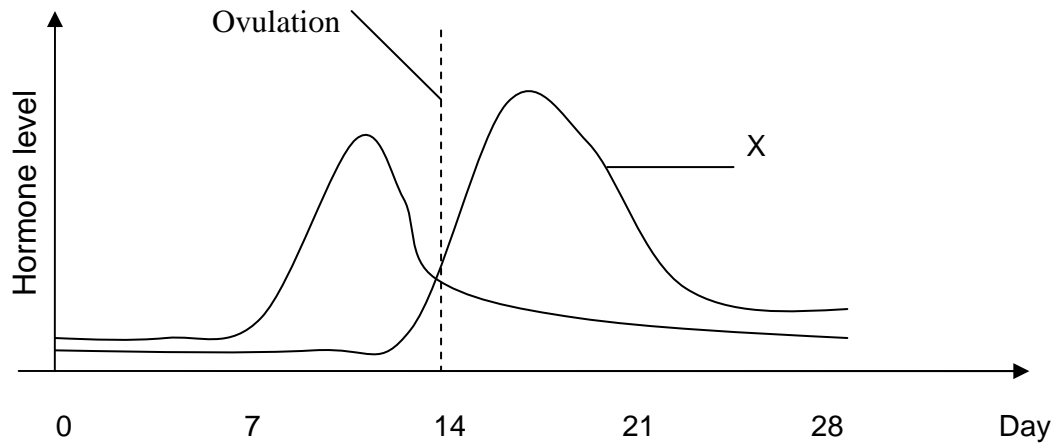


Diagram 31
Rajah 31

What is hormone X?

Apakah hormon X?

- A Follicle - stimulating hormone
Hormon perangsang folikel
- B Leuteinising hormone
Hormon Pelutinan
- C Oosterogen
Estrogen
- D Progesteron
Progesteron

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- 42 Diagram 32 shows a method of birth control use by a mother.
Rajah 32 menunjukkan kaedah mencegah kehamilan digunakan oleh seorang ibu



Diagram 32
Rajah 32

What is the consequences of this type of birth control ?

Apakah kesan ekoran dari pencegahan kehamilan jenis ini.

- A Ovum cannot be produced.
Ovum tidak dapat dihasilkan
- B The female sex hormones cannot be secreted .
Hormon seks perempuan tidak dapat dirembeskan
- C Sperm cells would be unable to enter the uterus.
Sel sperma tidak dapat memasuki uterus
- D Sperm cells would be unable to reach the ovum
Sel sperma tidak dapat mendekati ovum

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- 43 Diagram 33 shows the longitudinal section of the reproductive part of a flower
Rajah 33 menunjukkan keratan membujur bahagian pembiakan bunga.

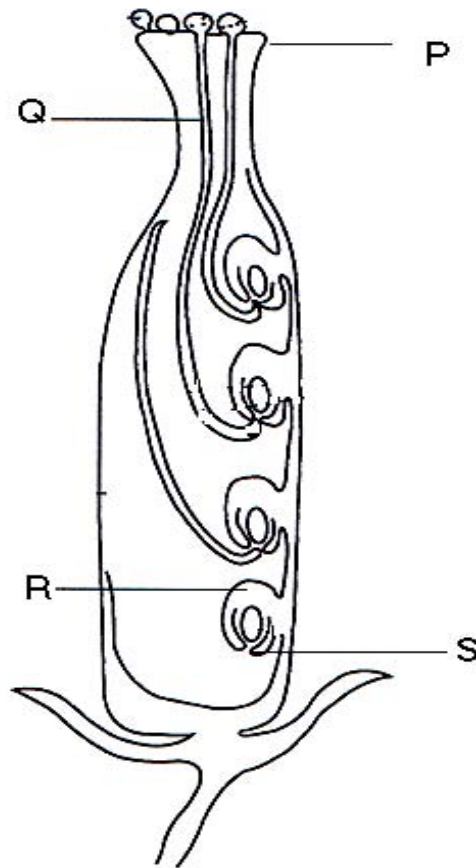


Diagram 33
Rajah 33

Where do pollination and fertilization occur?
Di manakah pendebungaan dan persenyawaan berlaku?

| | Pollination <i>Pendebungaan</i> | Fertilisation <i>Persenyawaan</i> |
|---|------------------------------------|--------------------------------------|
| A | P | R |
| B | Q | S |
| C | R | P |
| D | S | Q |

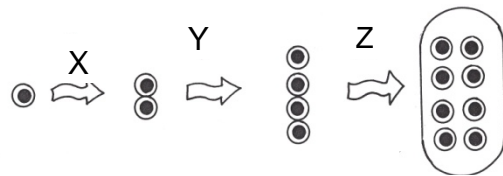
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- 44 Choose the correct sequence that shows development of a zygote before implantation.
Pilih urutan yang sesuai yang menunjukkan perkembangan zigot sebelum penempelan.

- A morula → blastocyst → embryo
morula → blastosista → embrio
- B embryo → morula → blastocyst
embrio → morula → blastosista
- C blastocyst → morula → embryo
blastosista → morula → embrio
- D blastocyst → embryo → morula
blastosista → embrio → morula

- 45 Diagram 34 shows the stages in the development of an embryo sac.
Rajah 34 menunjukkan peringkat perkembangan pundi embrio.



Embryo sac with eight nuclei
Pundi embrio dengan lapan nukleus

Diagram 34
Rajah 34

- What type of cell division occurs at stages X, Y and Z?
Apakah jenis pembahagian sel berlaku pada peringkat X, Y dan Z?

- | | X | Y | Z |
|---|-----------|------------|------------|
| A | Meiosis I | Mitosis | Meiosis II |
| B | Mitosis | Mitosis | Meiosis I |
| C | Mitosis | Meiosis I | Meiosis II |
| D | Meiosis I | Meiosis II | Mitosis |

- 46 Diagram 35 shows the structure of nucleotide in DNA molecule.
Rajah 35 menunjukkan struktur nukleotida dalam molekul DNA.

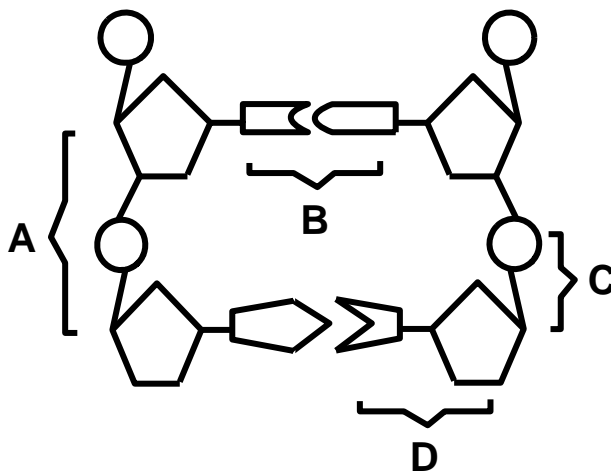


Diagram 35
Rajah 35

Which combination in the molecule carries the genetic information?
Kombinasi yang manakah dalam molekul membawa maklumat genetik?

- 47 Diagram 36 shows the alleles in a pair of homologous chromosome.
Rajah 36 menunjukkan alel-alel dalam satu pasang kromosom homolog.

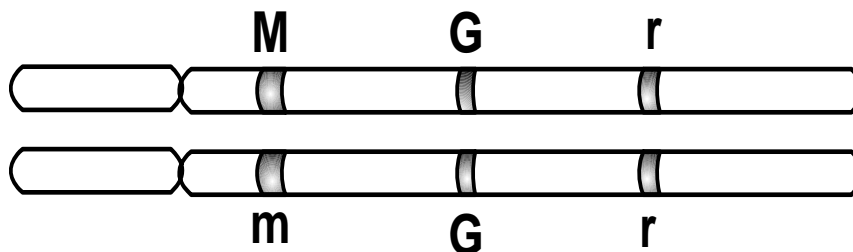


Diagram 36
Rajah 36

Based on diagram 19, which of the following describe gene and allele correctly?
Berdasarkan rajah 19, yang manakah berikut menghuraikan gen dan alel dengan betul

- A An allele has two genes.
Alel mempunyai dua gen
- B Gr is heterozygous.
Gr adalah heterozigot
- C Mm is homozygous.
Mm adalah homozigot
- D The trait of an organism is controlled by a pair of alleles.
Trait pada organisma dikawal oleh sepasang gen

- 48 Diagram 37 shows a sex-linked gene in haemophilia.
Rajah 37 menunjukkan gen pewarisan seks bagi haemofilia

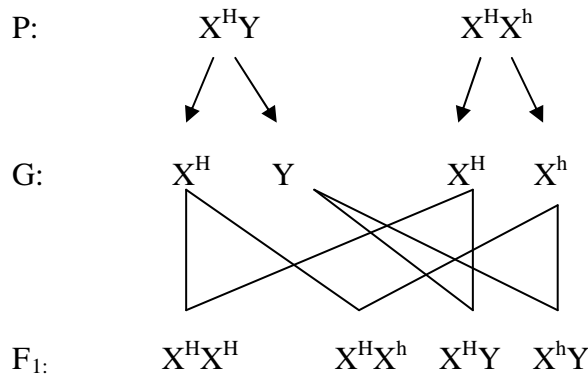


Diagram 37
Rajah 37

- What is the percentage of normal offspring in the F₁ generation ?
Berapakah peratus mendapat anak yang normal dalam generasi F₁ ?
- A 25%
B 50%
C 75%
D 100%
- 49 A woman with blood group AB married to a man with blood group O.
Which of the following is true about the blood group of their offspring?
Seorang wanita dengan kumpulan darah AB berkahwin dengan seorang lelaki dengan kumpulan darah O. Yang manakah berikut adalah benar tentang kumpulan darah anak-anak mereka
- A All the offspring have blood group AB
Semua anak mempunyai kumpulan darah AB
- B None of the offspring has blood group O.
Tiada seorang anak mempunyai kumpulan darah O
- C All the daughter will have blood group B.
Semua anak mempunyai kumpulan darah B
- D The probability of getting a son with blood group A is 50%.
Kebarangkalian mendapat anak lelaki dengan kumpulan darah A ialah 50%

- 50 Diagram 38 show the karyotypes of two individuals P and Q.
Rajah 38 menunjukkan kariotip bagi dua individu P dan Q.

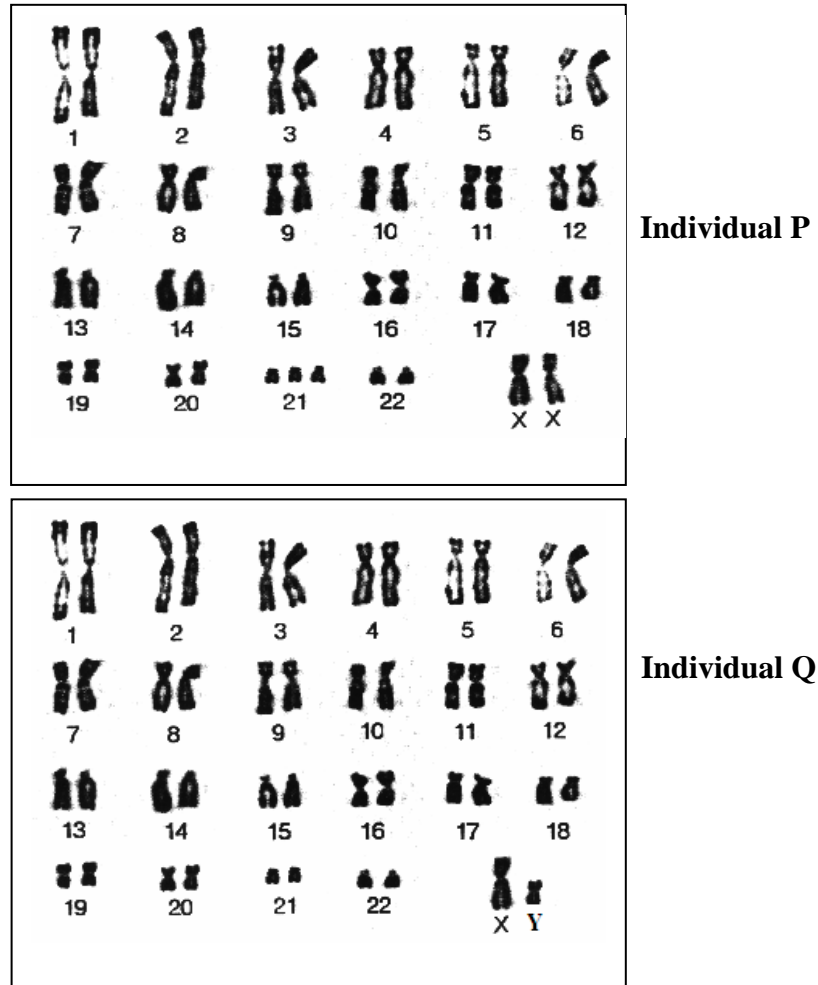


Diagram 38
Rajah 38

Which of the following represents individual P and Q?
Manakah yang berikut mewakili individu P dan Q ?

- | | <u>Individual P</u> | <u>Individual Q</u> |
|---|---|--|
| A | Klinefelter's syndrome male <i>Lelaki dengan sindrom Klinefelter</i> | Down's syndrome female <i>Perempuan dengan sindrom Down</i> |
| B | Down's syndrome female <i>Perempuan dengan sindrom Down</i> | Haemophilia male <i>Lelaki hemofilia</i> |
| C | Down's syndrome female <i>Perempuan sindrom down</i> | Normal male <i>Lelaki Normal</i> |
| D | Haemophilia male <i>Lelaki hemofilia</i> | Normal female <i>Perempuan Normal</i> |

END OF QUESTIONS