NAMA : _____

KELAS : _____

SEKOLAH MENENGAH KEBANGSAAN JINJANG
JINJANG UTARA, 52000 KUALA LUMPUR

UJIAN PERTENGAHAN TAHUN TINGKATAN 5 TAHUN 2023
BIOLOGI
KERTAS 2 **4551/2**
2 JAM 30 MINIT

JANGAN BUKA SOALAN SEHINGGA DIBERITAHU

ARAHAN

1. *Jawab semua soalan di Bahagian A, pilih mana-mana 1 soalan daripada Bahagian B dan WAJIB menjawab soalan Bahagian C.*
2. *Jawab soalan Bahagian A di dalam kertas soalan ini. Jawapan untuk Bahagian B dan C hendaklah ditulis di dalam helaian tambahan.*
3. *Anda dibenarkan menggunakan kalkulator saintifik yang tidak boleh diprogramkan.*
4. *Masa yang dicadangkan untuk menjawab soalan ialah 90 minit untuk Bahagian A, 30 minit untuk Bahagian B dan 30 minit untuk Bahagian C.*
5. *Semua kertas jawapan dan kertas soalan anda hendaklah diserahkan pada akhir peperiksaan.*

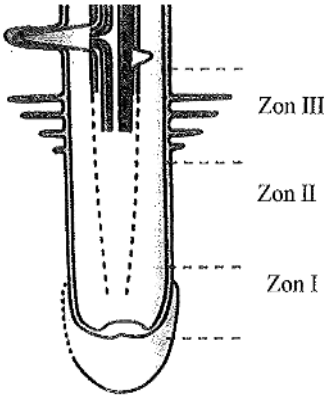
Untuk kegunaan Pemeriksa			
Bahagian	***Soalan***	***Markah penuh***	***Markah Diperoleh***
A	1	6	
	2	6	
	3	7	
	4	7	
	5	8	
	6	8	
	7	9	
	8	9	
B	9	20	
	10	20	
C	11	20	
		Jumlah	

Kertas peperiksaan ini mengandungi 19 halaman bercetak termasuk muka surat hadapan.

[*Lihat halaman sebelah*

Bahagian A
Section A.

1. Rajah 1.1 menunjukkan zon-zon pertumbuhan sel pada bahagian hujung akar.
Figure 1.1 shows the cell growth zones at the tip of the root.



Rajah 1.1

a. i. Kenal pasti Zon I.
Identify Zone I.
cell division zone

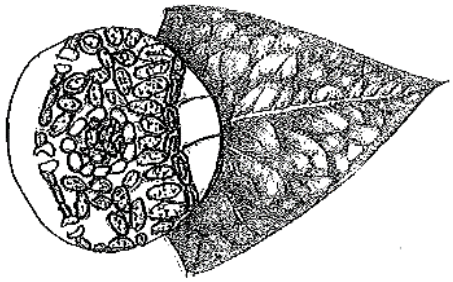
ii. Namakan proses pembahagian sel yang berlaku dengan aktif di Zon I.
Name the process of cell division that takes place actively in Zone I.
mitosis

b. Rajah 1.2 menunjukkan sejenis sel yang dijumpai pada bahagian akar pokok.
Figure 1.2 shows a type of cell found in the root of a tree.

Rajah 1.2

Antara zon pertumbuhan I, II atau III, di manakah sel dalam Rajah 1.2 boleh dijumpai? Terangkan jawapan anda.
Among growth zones I, II or III, where can the cells in Figure 1.2 be found? Explain your answer.
Zone III, cells differentiate to form permanent tissues and the cells change their shapes

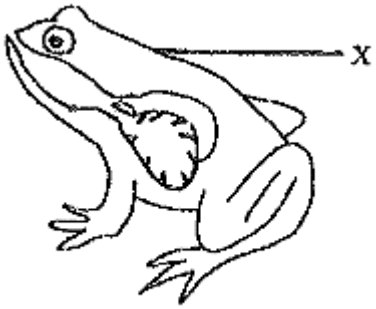
c. Rajah 1.3 menunjukkan struktur sehelai daun.
Figure 1.3 shows the structure of a leaf.



Rajah 1.3

Berdasarkan Rajah 1.3, apakah aras organisasi sel untuk daun. Terangkan jawapan anda.
Based on Figure 1.3, what is the level of cell organization for leaves. Explain your answer.
organ, consists of several types of tissues

2. Rajah 2 menunjukkan struktur respirasi seekor katak.
Figure 2 shows the respiratory structure of a frog.



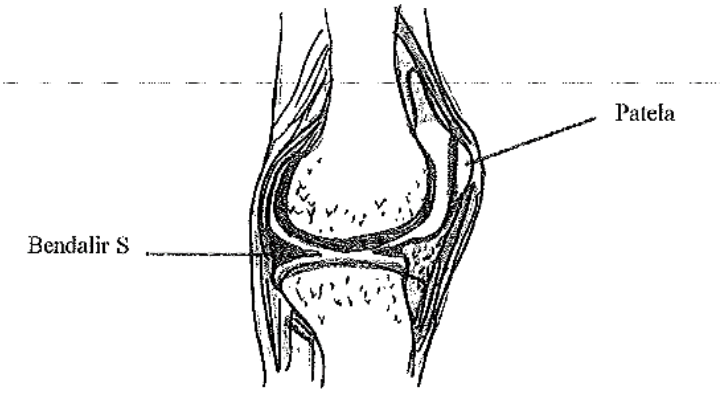
Rajah 2

a. Namakan struktur X.
Name the structure X.
skin

b. Terangkan satu penyesuaian struktur X.
Describe one structural adaptation of X.
thin, allows gaseous exchange to occur very quickly for respiration

c. Semasa musim kemarau, katak terdedah kepada suhu yang melampau. Terangkan bagaimana keadaan ini mempengaruhi pertukaran gas pada struktur X.
During the dry season, frogs are exposed to extreme temperatures. Explain how these conditions affect gas exchange at structure X.
Structure X becomes dry. Gas unable to dissolve. Gaseous exchange occurs in lung.

3. Rajah 3 menunjukkan struktur satu sendi.
Figure 3 shows the structure of a joint.



Rajah 3

a. Namakan jenis sendi ini dan nyatakan fungsinya.
Name this type of joint and state its function.

Hinge joint

allow the movement of bone in one direction only. (180)

b. Jika penghasilan bendalir S berkurang, terangkan kesannya kepada pergerakan.
If the production of fluid S is reduced, explain the effect on movement.

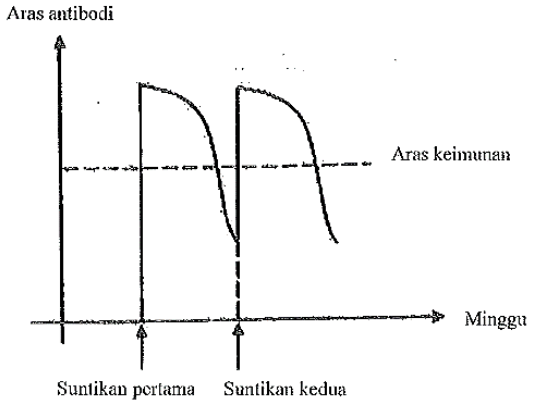
If S is reduced, lack of lubricant. Increasing the friction between bones.

c. Terangkan mengapa pengecutan otot memerlukan bekalan darah yang mencukupi.
Explain why muscle contraction requires an adequate blood supply.

contraction of muscle requires energy. ATP is produced through cell respiration.

More glucose and oxygen is supplied to muscle cell

4. Rajah 4 menunjukkan sejenis graf keimunan manusia.
Figure 4 shows a type of human immunity graph.



Rajah 4

Berdasarkan Rajah 4 ;
Based on Figure 4;

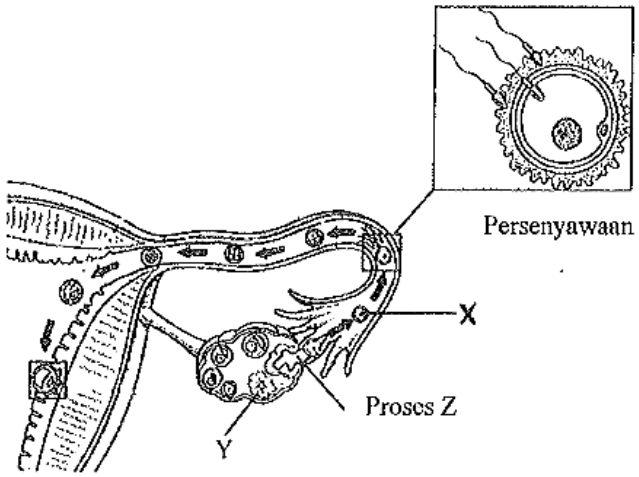
a. i. Apakah yang dimaksudkan dengan keimunan?
What is meant by immunity?
Body's ability to defend the infections caused by pathogen

ii. Nyatakan jenis keimunan yang ditunjukkan dalam Rajah 4.
State the type of immunity shown in Figure 4.
artificial passive immunity

b. Terangkan mengapakah suntikan kedua diperlukan selepas suntikan pertama.
Explain why a second injection is needed after the first injection.
Because the immune level decrease
This immune is temporary or non-last longer

c. Seorang yan dipatuk ular berbisa diberi suntikan antiserum untuk merawatnya. Terangkan bagaimanakah suntikan antiserum dapat menyembuhkan pesakit itu.
A person bitten by a poisonous snake is given an antiserum injection to treat it. Explain how the injection of antiserum could cure the patient.
Antiserum contains antibody. Can increase the antibody level through immune system
Toxins able to neutralise quickly

5. Rajah 5.1 menunjukkan proses yang berlaku di ovari dan tiub Falopio.
Figure 5.1 shows the processes that occur in the ovaries and fallopian tubes.



Rajah 5.1

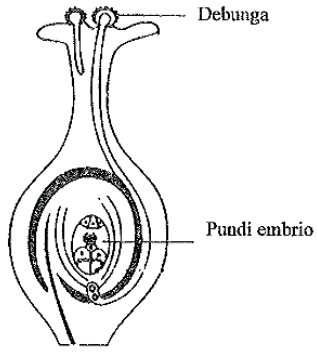
a. i. Namakan struktur X.
Name the structure X.
secondary oocyte

ii. Nyatakan hormon yang terlibat dalam proses Z.
State the hormones involved in the Z process.
luteinizing hormone

iii. Terangkan kesan jika hormon yang dinyatakan di 5.a.ii. tidak dihasilkan.
Explain the effect if the hormones mentioned in 5.a.ii. not produced.
ovulation process do not occur. Corpus luteum do not form. Fertilisation process do not occur

b. Struktur X telah disenyawakan di dalam tiub Falopio. Terangkan peranan struktur Y semasa kehamilan.
Structure X has been fertilized in the Fallopian tubes. Explain the role of the Y structure during pregnancy.
Structure Y release progesterone and oestrogen.
Stimulate the thickening of endometrium

c. Rajah 5.2 menunjukkan proses persenyawaan di dalam tumbuhan berbunga.
Figure 5.2 shows the fertilization process in a flowering plant.



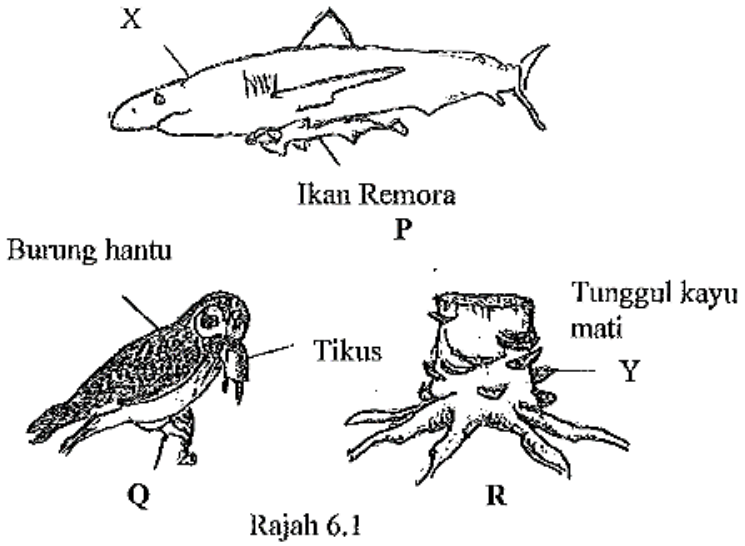
Rajah 5.2

Nyatakan satu persamaan dan satu perbezaan antara persenyawaan dalam Rajah 5.1 dengan Rajah 5.2.
State one similarity and one difference between fertilization in Figure 5.1 and Figure 5.2.

Persamaan :
Similarity :
Both produce diploid zygote

Perbezaan :
Difference :
In Diagram 5.1 only carry out once fertilise and occur in fallopian tube while diagram 5.2 carry out double fertilisation that occur in embryo sac

6. Organisma berinteraksi antara satu sama lain dalam pelbagai cara. Rajah 6.1 menunjukkan tiga jenis interaksi yang berbeza antara organisma.
Organisms interact with each other in many ways. Figure 6.1 shows three different types of interactions between organisms.



Rajah 6.1

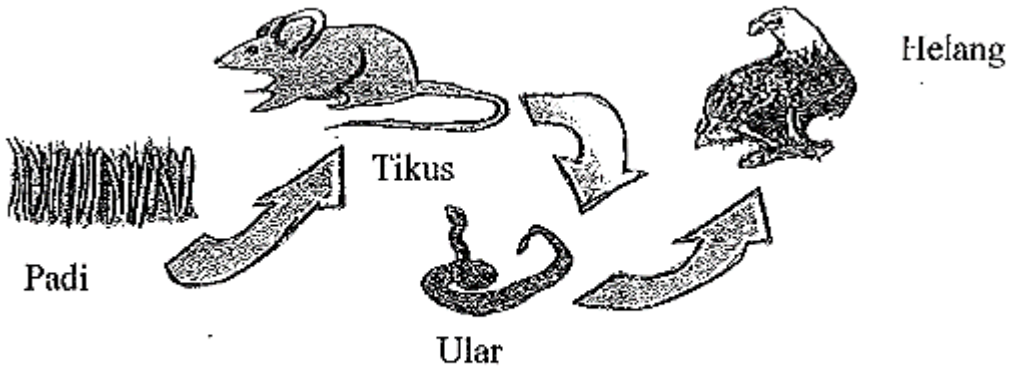
a. Namakan jenis interaksi yang diwakili oleh P, Q dan R.
Name the type of interaction represented by P, Q and R.

P : commensalism
Q : prey-predator
R : saprotrophic

b. Serbuk kayu boleh digunakan dalam interaksi R untuk penanaman cendawan secara komersial. Terangkan bagaimana cendawan boleh tumbuh pada serbuk kayu.
Wood powder can be used in R interactions for commercial mushroom cultivation. Explain how mushroom can grow on sawdust.

mushroom is a saprotrophic organism. It obtains nutrient from death and decompose organic substance. Digestion occurs outside the body of an organism before the nutrients are absorbed into its body.

c. Rajah 6.2 menunjukkan satu rantai makanan.
Figure 6.2 shows a food chain.



Rajah 6.2

Bilangan organisma pada aras trof kedua dalam rantai makanan telah bertambah. Cadangkan satu cara untuk mengurangkan bilangan organisma tersebut. Jelaskan cadangan anda.
The number of organisms at the second trophic level in the food chain has increased. Suggest a way to reduce the number of such organisms. Explain your proposal.

Introduce new predator for rat such as owl

7. Rajah 7.1 menunjukkan keadaan satuu tumbuhan di dalam pasu yang pecah dan terbalik secara mengiring selepas satu bulan.
Figure 7.1 shows the condition of a plant in a pot that broke and turned sideways after one month.

Rajah 7.1

a. i. Kenal pasti dua jenis gerak balas yang ditunjukkan oleh tumbuhan tersebut.
Identify the two types of responses shown by the plant.

phototropism, geotropism

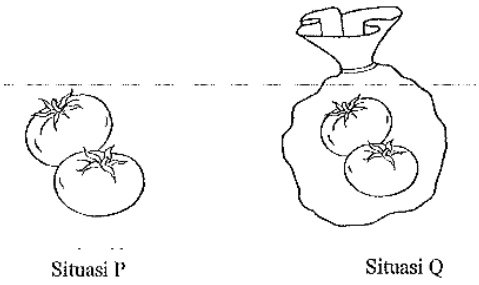
ii. Nyatakan fitohormon yang terlibat dalam gerak balas di a.i..
State the phytohormones involved in the reaction in a.i..

auxin

b. Berdasarkan Rajah 7.1, terangkan bagaimana hujung pucuk bergerak balas terhadap rangsangan apabila didedahkan kepada cahaya.
Based on Figure 7.1, explain how shoot tips respond to stimuli when exposed to light.

when the shoot are exposed to the sunlight from one direction only, the auxin will move away from the light. The auxin concentration is higher on the shaded region. The cell in the shaded area elongate more. Shoot bend toward the light

c. Rajah 7.2 menunjukkan dua situasi tomato matang, situuasi P dan situasi Q. Pemasakan tomato tersebut dipengaruhi oleh fitohormon.
Figure 7.2 shows two situations of ripe tomatoes, situation P and situation Q. The ripening of the tomato is influenced by phytohormones.

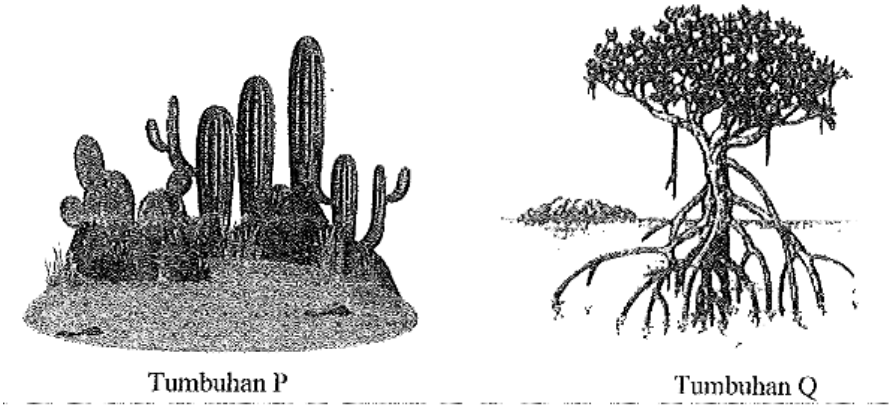


Rajah 7.2

i. Berdasarkan rajah 7.2, nyatakan tomato dalam situasi manakah yang akan masak terlebih dahulu?
Based on figure 7.2, state which tomato will ripen first in which situation?
Situation Q

ii. Berdasarkan jawapan anda di c.i., huraikan peranan fitohormon dalam pemasakan tomato.
Based on your answer in c.i., describe the role of phytohormones in tomato ripening.
Ethylene is used commercially to promote maturation of fruit quickly evenly

8. Rajah 8 menunjukkan dua tumbuhan, P dan Q di dua habitat yang berbeza.
Figure 8 shows two plants, P and Q in two different habitats.



Rajah 8

a. i. Nyatakan pengelasan tumbuhan P dan Q, berdasarkan habitatnya.
State the classification of P and Q plants, based on their habitat.

Tumbuhan P : xerophute
Plant P :
Tumbuhan Q : halophyte
Plant Q :

ii. Nyatakan satu masalah yang dihadapi tumbuhan P dalam habitatnya.
State one problem faced by plant P in its habitat.
lack of water

b. Terangkan satu ciri penyesuaian tumbuhan P untuk hidup di habitatnya.
Explain one feature of plant P adaptation to live in its habitat.
long root, thorn shape leaves

c. Huraikan kepentingan ekosistem yang didominasikan oleh tumbuhan Q sebagai zon perlindungan dan sumber perikanan :
Describe the importance of an ecosystem dominated by Q plants as a protection zone and fishery resource:

Zon pelindungan :
Protection zone:
lessen the impact of strong wave and wind that reach the seashore area.
conducive for fish rearing in floating cages and also for breeding commercial species

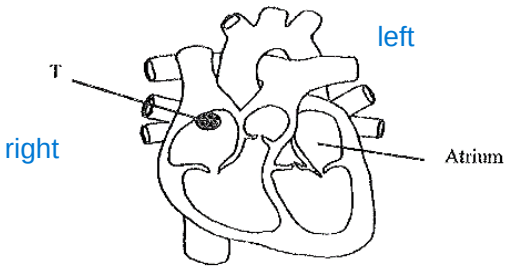
Zon perikanan :
Fishing zone:

Bahagian B.
Section B.

ii. generate electrical impulse, spread in both atria cause atria to contract.
To the atrioventricel node, bundle of His and Purkinje up to the apex of the heart.
To whole ventricle wall, ventricle will contract and pump the blood out of the heart

9. Rajah 9.1 menunjukkan struktur jantung manusia.
Figure 9.1 shows the structure of the human heart.

sinoatrium node generate electrical impulse



Rajah 9.1

a. i. Namakan struktur berlabel T dan nyatakan fungsinya.
Name the structure labeled T and describe it its function.

ii. Bincangkan bagaimana T berfungsi dalam pengepaman jantung.
Discuss how T works in the pumping of the heart.

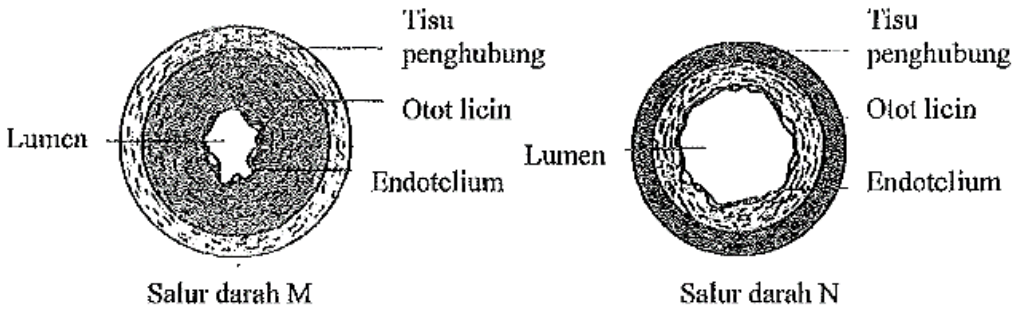
b. Pernyataan berikut menerangkan tentang punca-punca penyakit kardiovaskular.
The following statements describe the causes of cardiovascular disease.

Merokok, mengamalkan diet tidak seimbang dan mengamalkan gaya hidup yang tidak sihat menyebabkan penyakit kardiovaskular.
Smoking, eating an unbalanced diet and living an unhealthy lifestyle cause cardiovascular disease.

Smoking will reduce the concentration of oxygen in the blood. Heart needs to pump more vigorously to supply enough oxygen to whole body. Load of the heart increase.
Unbalance diet such as excessive intake of fat and cholesterol will accumulate of fat and cholesterol in the wall of artery. lumen size becomes smaller, blood pressure will increase
Unhealthy lifestyle such as less exercise will reduce the activeness of the heart. sudden vigorous activities will cause heart pain.

Bincangan mengenai pernyataan di atas.
Discussion of the above statement.

c. Rajah 9.2 menunjukkan dua jenis salur darah M dan N dalam sistem peredaran darah manusia.
Figure 9.2 shows the two types of blood vessels M and N in the human circulatory system.



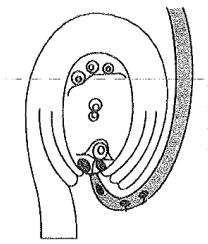
Rajah 9.2

Nyatakan perbezaan antara salur darah M dan N.
State the difference between M and N blood vessels.

artery
smaller lumen size
muscular wall
carry oxygenated blood

vein
large lumen size
less muscular wall
carry deoxygenated blood

10. a. Rajah 10.1 menunjukkan persenyawaan yang berlaku pada tumbuhan berbunga.
Figure 10.1 shows fertilization that occurs in flowering plants.



Rajah 10.1

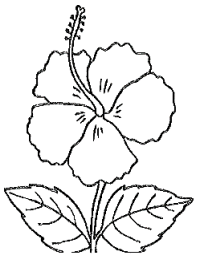
double fertilisation
2 male gametes will move into embryo sac
1 male gamete cell fuse with eggs cell to zygote
the other male gamete will fuse with polar nuclei to form endosperm tissues

i. Huraikan jenis persenyawaan yang ditunjukkan pada Rajah 10.1..
Describe the type of fertilization shown in Figure 10.1..

ii. Terangkan kepentingan proses persemuawaan tersebut dalam memastikan kemandirian tumbuhan berbunga.
Explain the importance of the fertilization process in ensuring the survival of flowering plants.

produce zygote. genetic information is passed down from 1 generation to the next generation
produce endosperm tissues to supply nutrition to the growth of embryo

b. Rajah 10.2 menunjukkan sejenis bunga yang dijumpai di sebuah taman.
Figure 10.2 shows a type of flower found in a garden.



Rajah 10.2

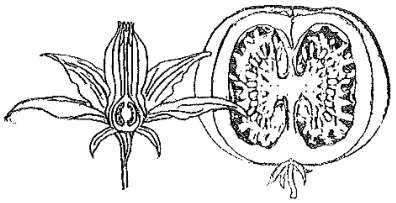
both of them are reproductive organs, both produce gamete

Bandingakan dan bezakan organ pembiakan jantan dan organ pembiakan betina bagi bunga yang ditunjukkan pada Rajah 10.2.
Compare and contrast the male and female reproductive organs of the flower shown in Figure 10.2.

male
produce male gamete (pollen grain)
known as stamen

female
produce female gamete (ovule)
known as carpel

c. i. Rajah 10.3 menunjukkan keratan membujur buah.
Figure 10.3 shows a longitudinal section of a fruit.



Rajah 10.3

Terangkan perkembangan ovari menjadi buah selepas persenyawaan.
Explain the development of the ovary into a fruit after fertilization.

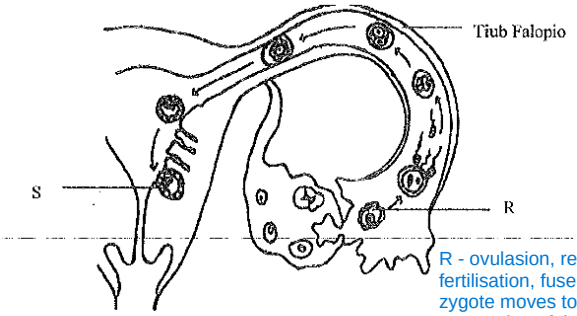
triploid endosperm nucleus divides by mitosis and form the endosperm tissue that supplies nutrient to the embryo.
zygote divide in mitosis to form larger cell and smaller cell
large cell develops into a suspensor that anchors the embryo to the wall of the embryo sac
Smaller cell will form embryo that consists of plumule, radiale & cotyledon.

ii. Biji benih merupakan struktur yang digunakan untuk menanam kebanyakkan tanaman angiosperma semula jadi bagi mengekalkan kemandirian spesies tumbuhan. Nyatakan kepentingan biji benih untuk kemandirian tumbuhan.

the endosperm tissues or cotyledon that supply nutrient to supply energy for the germination process.
Testa structure is strong and water impermeable to prevent the seed from spoiling.
dormant structure which enables the seed to be stored for a long time

Bahagian C.
Section C.

11. Rajah 11.1 menunjukkan perkembangan zigot manusia.
Figure 11.1 shows the development of the human zygote.

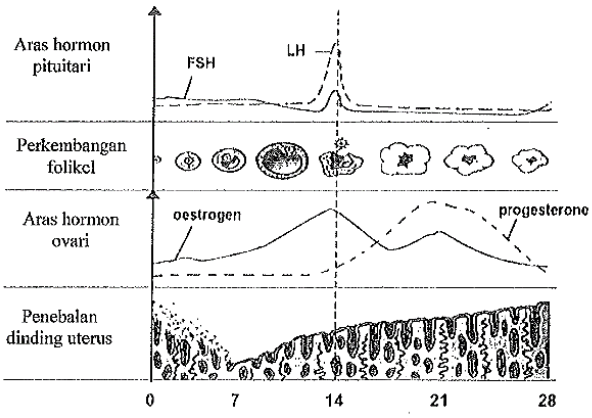


Rajah 11.1

a. Huraikan proses-proses yang berlaku dari R ke S.
Describe the processes that occur from R to S.

R - ovulasion, release of secondary oocyte from ovary
fertilisation, fuse of 1 sperm with secondary oocyte to form zygote moves towards the uterus helped by peristaltic contraction of the fallopian tube & the action of the ciliated epithelial cells of the fallopian tube
zygote undergoes many divisions in the way & formed morula then blastocyst
In the uterus, blastocyst implants on the endometrium of the uterus when the trophoblastic villi of the wall of blastocyst penetrates the endometrium the blastocyst develops into an embryo

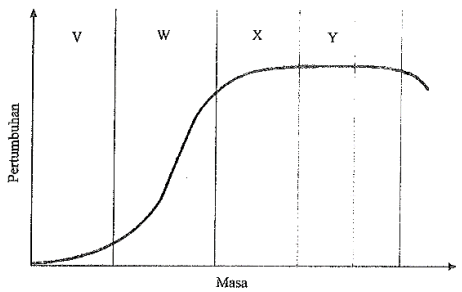
b. Rajah 11.2 menunjukkan satu kitar haid seorang wanita.
Figure 11.2 shows a woman's menstrual cycle.



Rajah 11.2

Terangkan perubahan yang mungkin berlaku dalam ovari dan uterus sekiranya oosit sekunder disenyawakan.
Explain the changes that may occur in the ovary and uterus if the secondary oocyte is fertilized.

c. Rajah 11.2 menunjukkan lengkung pertumbuhan manusia.
Figure 11.2 shows the human growth curve.



Rajah 11.3

V, W, X dan Y adalah fasa-fasa pada lengkung pertumbuhan. Terangkan perubahan yang berlaku pada setiap fasa.
V, W, X and Y are the phases of the growth curve. Explain the changes that occur in each phase.

NAME: ..... CLASS: .....

4551/2
BIOLOGY
Paper 2
AUGUST 2023
2 ½ hours

SEKOLAH MENENGAH KEBANGSAAN KEPONG BARU
KUALA LUMPUR

MID-YEAR EXAMINATION
BIOLOGY
FORM FIVE

PAPER 2
2 hours and 30 minutes

DO NOT OPEN THIS QUESTION PAPER UNTIL YOU ARE TOLD TO DO SO

1. This question paper consists of three sections: **Section A, Section B** and **Section C.**

2. Answer **all** questions in **Section A,** choose any **one** question for **Section B** and answer the question in **Section C.**

3. You may use a non-programmable scientific calculator.

Section	Question	Full marks	Score marks
A	1	6	
	2	6	
	3	7	
	4	7	
	5	8	
	6	8	
	7	9	
	8	9	
B	9	20	
	10	20	
C	11	20	
Total			

This question paper consists of 17 printed pages including the front page

Bahagian A
Section A.

1. Rajah 1 menunjukkan keratan rentas batang bagi tumbuhan X dan Y.
Diagram 1 shows the cross sections of stems for plant X and Y.

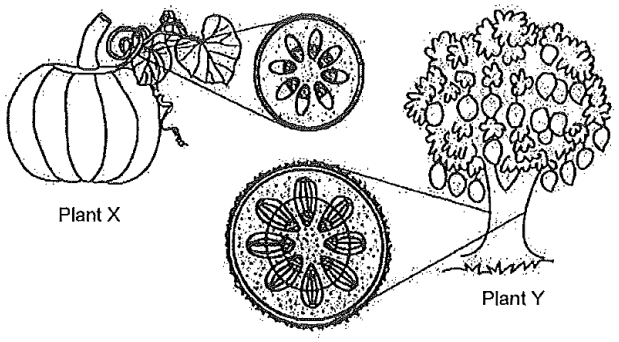


Diagram 1

a. i. Namakan jenis tumbuhan X dan tumbuhan Y berdasarkan kitaran hayatnya.
Name the type of plant X and plant Y based on its life cycle.

X : _____
Y : _____

ii. Tumbuhan manakah yang mempunyai sokongan mekanikal yang lebih kuat? Terangkan jawapan anda.
Which plant has a stronger mechanical support? Explain your answer.

_____
_____
_____

b.

Tumbuhan yang mengalami pertumbuhan sekunder mempunyai nilai ekonomi yang tinggi. *Plants that undergo secondary growth have high economic value.*

Jelaskan pernyataan di atas.
Explain the above statement.

_____
_____
_____

2. Rajah 2.1 menunjukkan satu sel darah merah. Rajah 2.2 menunjukkan struktur membran plasma sel darah merah.
Diagram 2.1 shows a red blood cell. Diagram 2.2 shows the structure of the plasma membrane of the red blood cell.

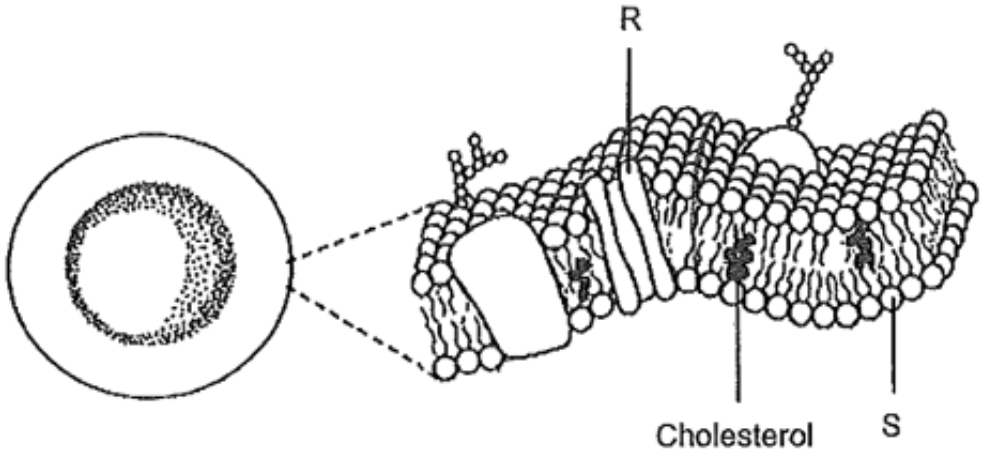


Diagram 2.1 Diagram 2.2

a. Berdasarkan Rajah 2.2.,
Based on Diagram 2.2.,
   i. Namakan struktur R dan S.
   Name structure R and S.
   R : _____
   S : _____

   ii. Nyatakan peranan kolesterol kepada struktur membran plasma.
   State the role of cholesterol to the structure of plasma membrane.
   _____
   _____

b. Fungsi sel darah merah adalah untuk mengangkut oksigen ke sel-sel badan. Oksigen bergerak merentasi membran plasma untuk bergabung dengan haemoglobin. Dalam Rajah 2.2, lukiskan anak panah untuk menunjukkan pergerakan oksigen merentasi membran plasma sel darah merah.
The function of red blood cell is to transport oxygen to the body cells. Oxygen move across the plasma membrane to combine with haemoglobin. In Diagram 2.2, draw an arrow to show the movement of oxygen across the plasma membrane of the red blood cell.

c. Sel darah merah direndam dalam air suling selama 30 minit. Terangkan kesan ke atas sel darah merah.
The red blood cell was immersed in distilled water for 30minutes. Explain the effect on the red blood cell.
   _____
   _____
   _____

3. Rajah 2.1 menunjukkan struktur komponen dalam sel tumbuhan.
Diagram 2.1 shows the structure of a component in a plant cell.

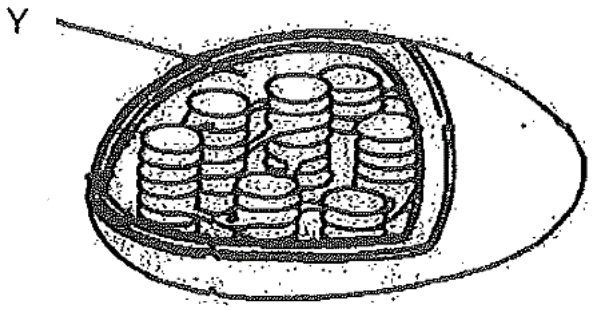


Diagram 3.1

a. Strukturnya mengandungi pigmen fotosintesis yang berfungsi menyerap tenaga cahaya.
The structure contains photosynthesis pigments that function to absorb light energy.

i. Labelkan pada Rajah 3.1 dengan huruf X di mana pigmen boleh ditemui.
Label on Diagram 3.1 with letter X where the pigment can be found.

ii. Nyatakan dua perbezaan tindak balas yang berlaku dalam X pada a.i. dan dalam Y.
State two differences in the reactions that occur in X at a.i. and in Y.

Tindak balas dalam X. ***Reaction in X.***	**Tindak balas dalam Y.** ***Reaction in Y.***

b. Rajah 3.2 menunjukkan graf jumlah pengambilan karbon dioksida melawan keamatan cahaya.
Diagram 3.2 shows a graph of total carbon dioxide uptake against light intensity.

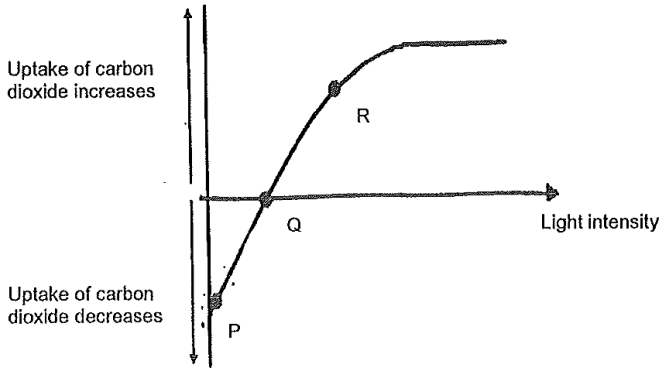


Diagram 3.2

Seorang petani mendapati tanamannya berkembang pesat dengan pengeluaran bunga, biji benih dan buah-buahan yang banyak.
A farmer found that his crops were growing fast with the production of flowers, seeds and fruits in abundance.

Berdasarkan rajah 3.2, nyatakan titik mana yang menyokong situasi tersebut. Terangkan jawapan anda.
Based on diagram 3.2, state which point supports the situation. Explain your answer.

_____

_____

_____

_____

c. Rumah hijau digunakan untuk mengawal faktor-faktor yang boleh menyumbang kepada peningkatan hasil tanaman. Rajah 3.3 menunjukkan tumbuhan ditanam di dalam rumah hijau.
Greenhouse is used to control the factors that can contribute to the increase of crop yields. Diagram 3.3 shows plants are planted in a greenhouse.

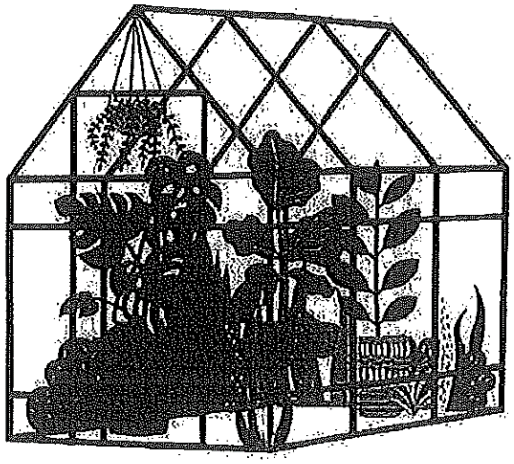


Diagram 3.3

Nyatakan satu ciri rumah hijau yang boleh meningkatkan kadar tindak balas bebas cahaya tumbuhan itu.
State one characteristic of a greenhouse that can increase the light independent reaction rate of the plant.

_____

_____

4. Rajah 4.1 menunjukkan nukleotida daripada molekul DNA.
Diagram 4.1 shows a nucleotide from a DNA molecule.

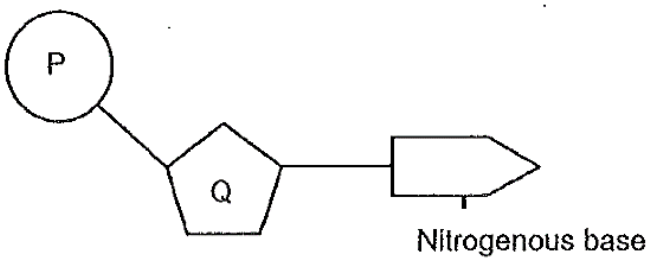


Diagram 4.1

a. Namakan komponen P dan Q.
Name the components P and Q.

P : _____

Q : _____

b. Molekul DNA terdiri daripada dua rantai polinukleotida. Lengkapkan Rajah 4.2 untuk menunjukkan molekul DNA yang lengkap. Tulis pasangan bes nitrogen yang sepadan dengan T dan C dalam lukisan anda.
A DNA molecule consists of two polynucleotide chains. Complete Diagram 4.2 to shows a complete DNA molecule. Write the nitrogenous base pairs that correspond to T and C in your drawing.

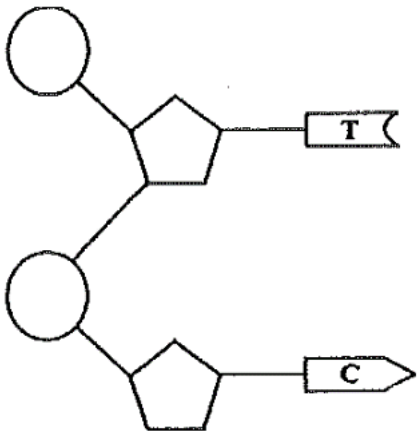


Diagram 4.2

c. Rajah 4.3 menunjukkan urutan sintesis protein daripada sehelai DNA.
Diagram 4.3 shows the sequence of protein synthesis from a DNA strand.

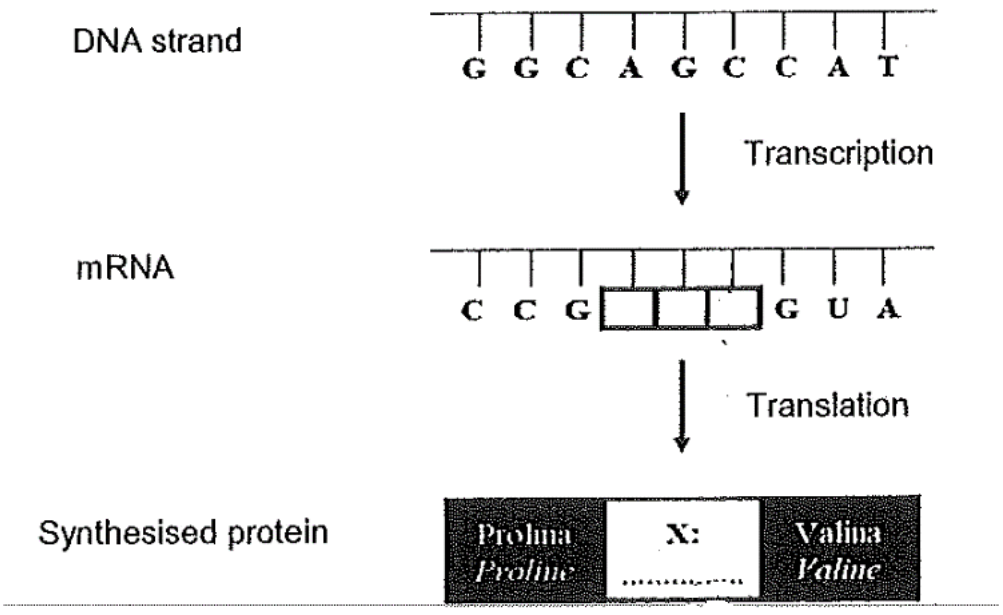


Diagram 4.3

Dalam Rajah 4.3,
In Diagram 4.3,

i. Lengkapkan jujukan asas nitrogen untuk mRNA.
Complete the nitrogenous base sequence for the Mrna.

ii. Tentukan asid amino X berdasarkan jadual di bawah. Tulis jawapan anda pada ruangan yang disediakan di atas.
Determine amino acid X based on the table below. Write your answer in the space provided above.

Kod kodon triplet. ***Triplet codon code.***	**Asid amino.** ***Amino acid.***
UGC	Sistein *Cysteine*
UGC	
GCU	Alanin *Alanine*
GCA	
UCG	Serine. *Serine.*
UCA	

5. Rajah 5 menunjukkan anak benih diletakkan secara melintang dalam tanah.
Diagram 5 shows a seed placed horizontally in the soil.

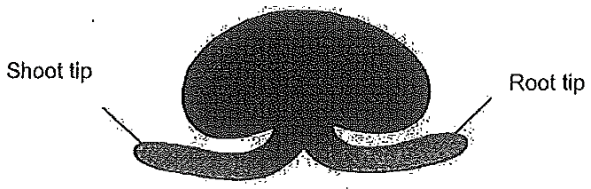


Diagram 5

a. i. Dalam ruang yang dibekalkan dibawah, lukiskan keputusan jangkaan bagi hujung akar dan hujung pucuk anak benih selepas beberapa hari.
In the space provided below, draw the expected result of the root tip and the shoot tip of the seedling after a few days.

ii. Terangkan apa yang berlaku di hujung akar.
Explain what happen at the tip of the root.

_____
_____
_____
_____

b. Namakan jenis tindak balas yang ditunjukkan oleh hujung akar.
Name the type of response shown by the root tip.

_____

c. Seorang pelajar meletakkan mangga yang belum masak bersama pisang masak dalam bekas bertutup pada suhu bilik. Ramalkan perubahan yang berlaku pada mangga yang belum masak. Terangkan jawapan anda.
A student places unripe mango together with ripe bananas in a closed container at room temperature. Predict the changes that occur to the unripe mangoes. Explain your answer.

_____
_____
_____
_____

6. Rajah 6.1 menunjukkann seorang individu disuntik dengan bahan Y. Rajah 6.2 menunjukkan seorang individu disuntik dengan bahan yang diekstrak daripada darah kuda.
Diagram 6.1 shows an individual is injected with substance Y. Diagram 6.2 shows an individual is injected with substance that is extracted from horse blood.

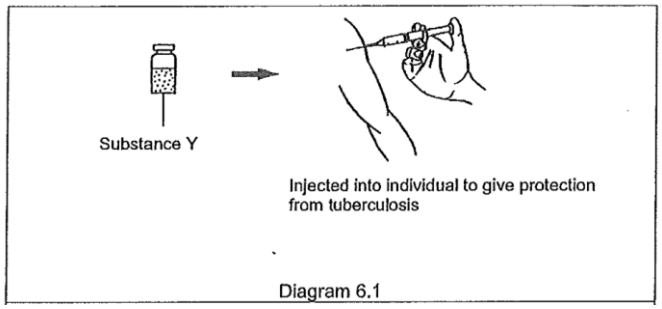


Diagram 6.1

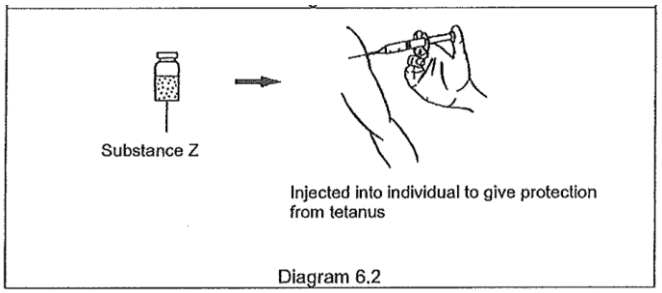


Diagram 6.2

a. i. Nyatakan jenis imuniti yang diperolehi oleh individu dalam Rajah 6.1 dan Rajah 6.2.
State the type of immunity obtained by individual in Diagram 6.1 and Diagram 6.2.

Rajah 6.1. : _____
Diagram 6.1 : _____

Rajah 6.2 : _____
Diagram 6.2 : _____

ii. Bezakan antara bahan Y dan Z. Tulis jawapan anda pada ruang yang disediakan.
Differentiate between substances Y and Z. Write your answer in the space provided.

Bahan Y. ***Substance Y.***	**Bahan Z.** ***Substance Z.***

b. Rajah 6.3 menunjukkan poster tentang Kempen Kesedaran Penyusunan Susu Ibu.
Diagram 6.3 shows a poster about Breastfeeding Awareness Campaign.

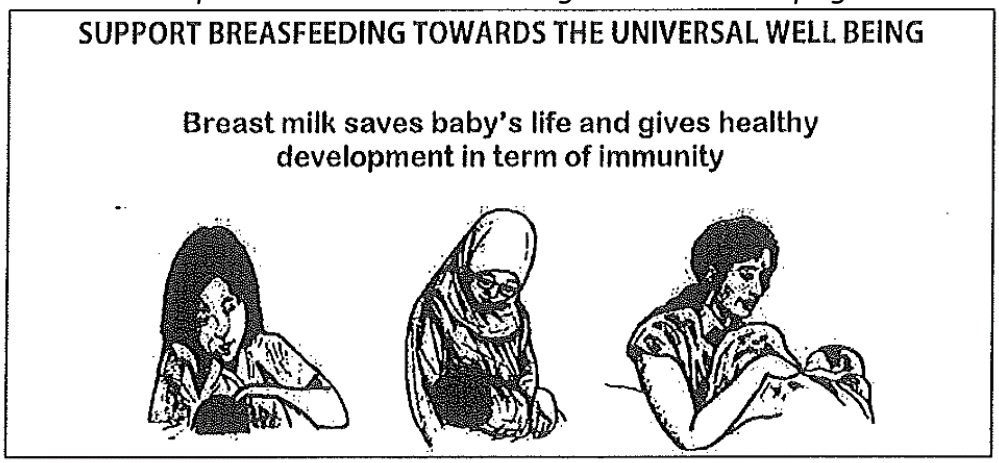


Diagram 6.3

i. Terangkan kelebihan susu ibu dari segi imuniti.
Explain the advantages of breast milk in term of immunity.

_____

_____

_____

_____

ii. Cadangkan cara lain bagaimana keimunan dalam 6.b.i. boleh diperolehi.
Suggest another way on how immunity in 6.b.i. can be obtained.

_____

7. Rajah 7.1 menunjukkan sel R dalam satu peringkat jenis pembahagian sel dalam ovari seorang wanita.
Diagram 7.1 shows cell R in one stage of a type of cell division in the ovary of a woman.

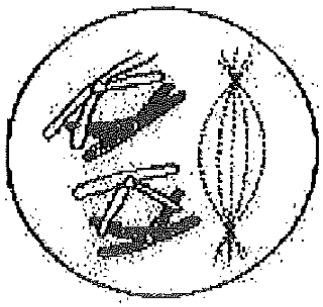


Diagram 7.1

a. i. Namakan jenis pembahagian sel dalam Rajah 7.1.
Name the type of cell division in Diagram 7.1.

_____

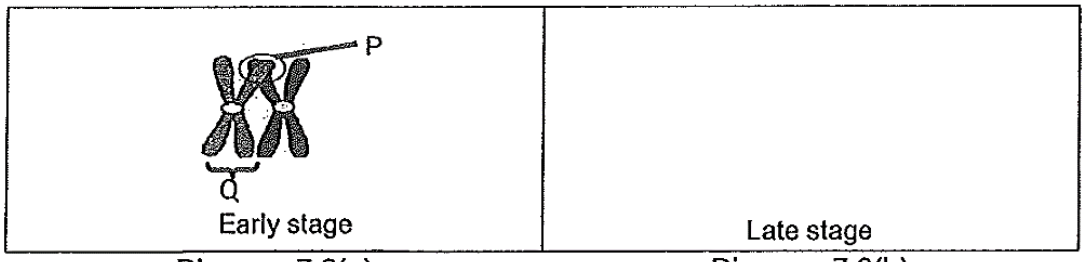


Diagram 7.2(a) Diagram 7.2(b)

ii. Namakan bahagian berlabel P dan Q.
Name part labelled P and Q.

P : _____

Q : _____

iii. Terangkan proses yang telah berlaku di P.
Explain the process that has taken place at P.

_____

_____

_____

iv. Lukiskan rajah kromosom dalam ruang yang disediakan dalam Rajah 7.2.b. selepas proses di P telah berlaku.
Draw the diagram of the chromosomes in the space provided in Diagram 7.2.b. after process at P has taken place.

b. Rajah 7.3 menunjukkan karyotype gangguan genetik.
Diagram 7.3 shows a karyotype of a genetic disorder.

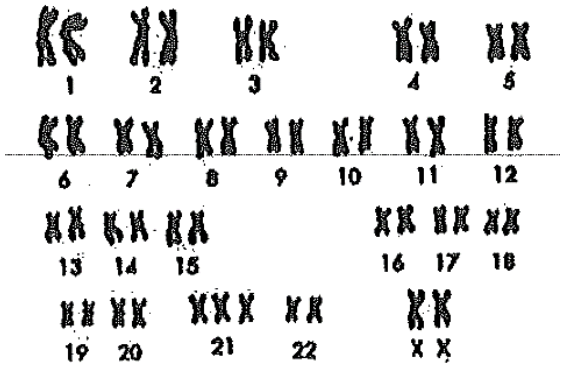


Diagram 7.3

i. Nyatakan jumlah bilangan kromosom dalam anak.
State the total number of chromosomes in the offspring.

_____

ii. Terangkan penyakit genetik yang dialami oleh keturunan.
Explain the genetic disease suffered by the offspring.

_____

_____

_____

8. Rajah 8.1 menunjukkan struktur tisu vaskular tumbuhan darat.
Diagram 8.1 shows the structure of vascular tissue of a terrestrial plant.

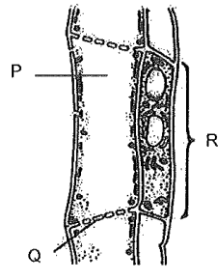


Diagram 8.1

a. Namakan struktur Q dan R.
Name structures Q and R.

Q : _____
R : _____

b. Nyatakan kesan keupayaan air dalam P apabila bahan daripada daun diangkut melalui R.
State the effect of water potential in P when substance from the leaves is transported through R.

_____

c. Rajah 8.2 menunjukkan sejenis tumbuhan yang boleh digunakan dalam kaedah merawat bahan buangan di dalam air.
Diagram 8.2 shows a type of plant that can be used in a method to treat waste in water.

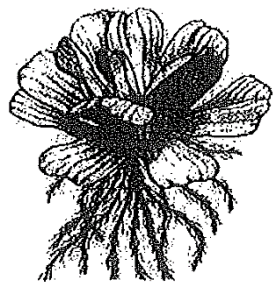


Diagram 8.2

i. Namakan kaedah yang digunakan.
Name the method used.

_____

ii. Terangkan bagaimana tumbuhan dalam Rajah 8.2 boleh digunakan untuk menyelesaikan isu pencemaran sumber air.
Explain how plant in Diagram 8.2 can be used to solve the issue of water sources pollution.

_____
_____
_____
_____

d. Rajah 8.3.a. dan 8.3.b. terlibat dalam proses kehilangan air daripada tumbuhan.
Diagram 8.3a. and 8.3.b. involve in the process of water loss from a plant.

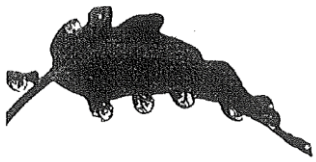


Diagram 8.3(a)

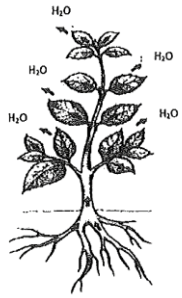


Diagram 8.3(b)

Nyatakan dua perbezaan antara kedua-dua proses yang ditunjukkan dalam Rajah 8.3.a. dan 8.3.b.
State two differences between both processes shown in Diagram 8.3.a. and 8.3.b..

Rajah 8.3.a. ***Diagram 8.3.a.***	**Rajah 8.3.b.** ***Diagram 8.3.b.***

Bahagian B.
Section B.

9. Rajah 9.1 menunjukkan bahagian membujur jantung manusia.
Diagram 9.1 shows a longitudinal section of a human's heart.

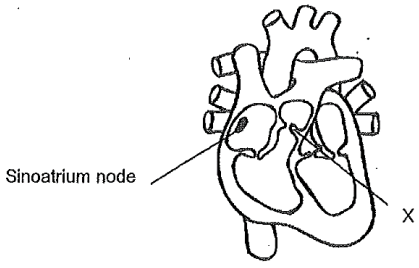


Diagram 9.1

a. i. Apakah struktur X dan peranannya?
What is structure X and its role?

ii. Bagi pesakit yang mengalami kegagalan nod sinaoatrium, doktor akan memasukkan 'Meditornic Micra' ke jantung dengan tidak menjalani pembedahan. Terangkan bagaimana peranti ini berfungsi.
For patient with sinaoatrium nodes failure, doctor will insert 'Meditornic Micra' to the heart by not undergoing surgery. Explain how this device works.

b. Rajah 9.2.a. menunjukkan bahagian membujur jantung normal kanak-kanak. Rajah 9.2.b. menunjukkan bahagian membujur jantung kanak-kanak akan cacat pada septum ventrikel.
Diagram 9.2.a. shows a longitudinal section of a normal heart of a child. Diagram 9.2.b. shows a longitudinal section of a child's heart will defect at the septum of a ventricle.

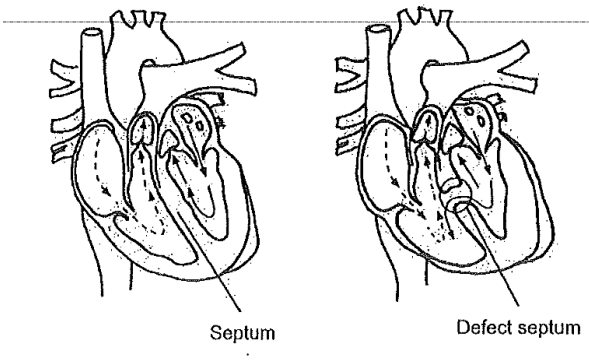
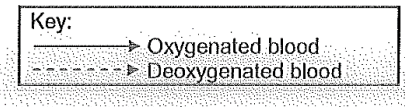


Diagram 9.2(a) Diagram 9.2 (b)



Berdasarkan Rajah 9.2.b., terangkan bagaimana kecacatan septum menjejaskan sistem peredaran darah kanak-kanak itu.
Based on Diagram 9.2.b., explain how septum defect affects the blood circulatory system of the child.

c. Rajah 9.3 menunjukkan sebahagian daripada sistem perederan darah dan sistem limfa pada manusia.
Diagram 9.3 shows a part of blood circulatory system and lymphatic system in human.

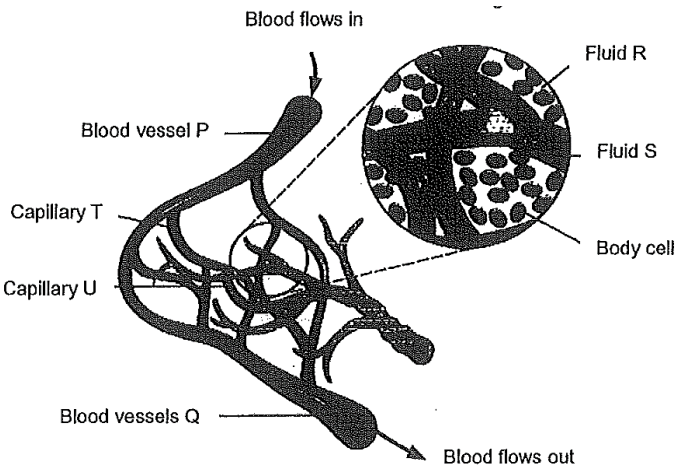


Diagram 9.3

Berdasarkan Rajah 9.3, bezakan antara:
Based on Diagram 9.3, differentiate between :

- Salur darah P dan salur darah Q.
  Blood vessel P and blood vessel Q.
- Bendalir R dan bendalir S.
  Fluid R and fluid S.
- Kapilari T dan kapilari U.
  Capillary T and capillary U.

12. Rajah 10.1 menunjukkan dalam tindakan tidak terkawal.
Diagram 10.1 shows in involuntary action.

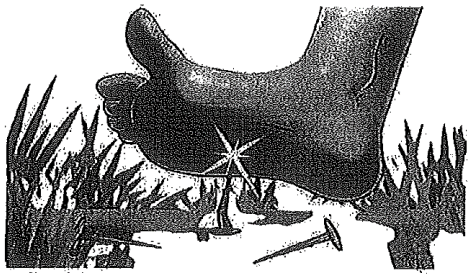


Diagram 10.1

a. i. Nyatakan kepentingan tindak balas.
State the importance of the response.

ii. Huraikan penghantaran impuls untuk melakukan gerak balas dalam Rajah 10.1.
Describe the transmission of impulse to perform the response in Diagram 10.1.

b. Rajah 10.2 menunjukkan satu situasi yang berlaku kepada seorang pelajar semasa dalam perjalanan pulang dari sekolah.
Diagram 10.2 shows a situation happened to a student during his way back from school.

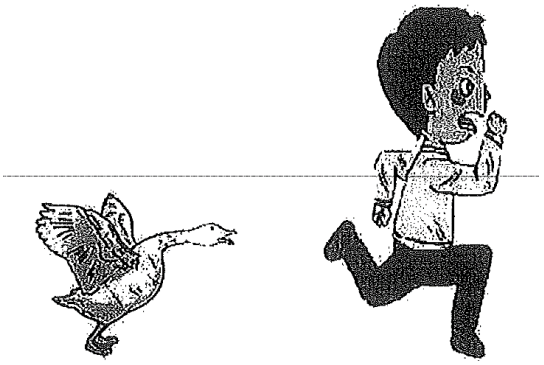


Diagram 10.2

i. Huraikan tindakan hormon dalam situasi dalam Rajah 10.2.
Describe the action of hormone in the situation in Diagram 10.2.

ii. Bandingkan sistem yang melibatkan dalam Rajah 10.1. dan Rajah 10.2..
Compare systems that involve in Diagram 10.1. and Diagram 10.2.

11. Rajah 11.1 menunjukkan beberapa organ dalam sistem pencernaan manusia.
Diagram 11.1 shows some of organs in the human digestive system.

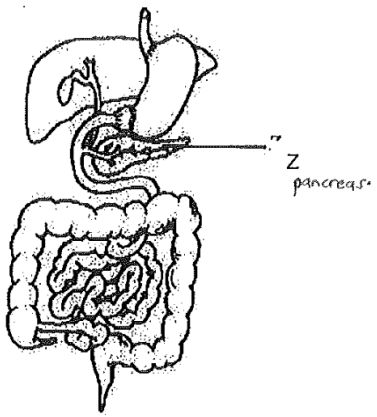


Diagram 11.1

a. Berdasarkan Rajah 11.1 di atas, bincangkan pencernaan glukosa yang berlaku dalam duodenum.
Based on Diagram 11.1 above, discuss the digestion of glucose that takes place in the duodenum.

b. i. Seorang lelaki yang menghidap kanser perlu membuang organ Z dari badannya. Ramalkan kesan yang mungkin dihadapinya selepas organ itu dibuang.
A man who with cancer needs to removed organ Z from his body. Predict the effects his may face after the organ is discarded.

ii. Candangkan tindakan yang perlu diambil oleh lelaki itu untuk mengawa masalah kesihatan yang mungkin timbul selepas organ Z dikeluarkan.
Suggest actions that the man needs to take to control health problems that may arise after organ Z is removed.

c. Rajah 11.2 menunjukkan orkid liar di atas pokok besar.
Diagram 11.2 shows a wild orchid on a big tree.

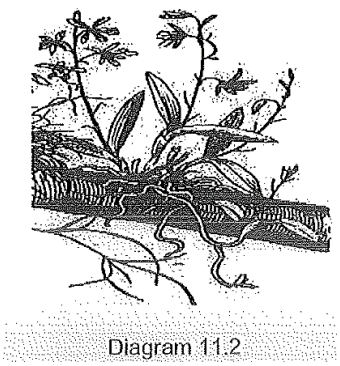


Diagram 11.2

i. Terangkan bagaimana orkid itu disesuaikan untuk meneruskan kemandirian spesiesnya.
Describe how the orchid was adapted to continue the survival of its species.

ii. Seorang lelaki memindahkan orkid ke tanah di bawha pokok besar supaya ia dapat menyerap air dari tanah. Wahrkan tindakannnya.
A man moves the orchid to the ground under the big tree so that it can absorb water form the ground. Justify his action.

d.

- Seorang petani mendapati tanaman lada yang diusahakan tidak subur.
  A farmer found the pepper crops he cultivated to be infertile.
- Keadaan daun pokok lada berwarna kekuningan.
  The condition of the leaves of the pepper tree is yellowish.

Berdasarkan pernyataan di atas, cadangkan langkah yang perlu diambil untuk menyelesaikan masalah tersebut bagi memastikan tanaman ladanya subur. Terangkan cadangan anda.
Based on the above statement, suggest step that should be taken to solve the problem to ensure his pepper crop is fertile. Explain your suggestions.