1. Diagram 1 shows the flow chart of reflex arc on touched by a hot object..

   Rajah 1 menunjukkan carta aliran arka refleks bagi tersentuh objek panas.

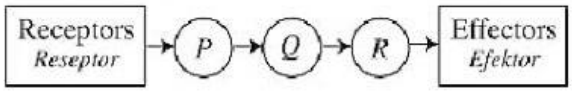

Diagram 1 / *Rajah 1*

What do *P*, *Q* and *R* represent?

Apakah yang diwakili oleh P, Q, dan R?

	P	***Q***	***R***
A	Sensory neurone *Neuron deria*	Motor neurone *Neuron motor*	Relay neurone *Neuron perantaraan*
B	Relay neurone *Neuron perantaraan*	Sensory neurone *Neuron deria*	Motor neurone *Neuron motor*
C	Relay neurone *Neuron perantaraan*	Motor neurone *Neuron motor*	Sensory neurone *Neuron deria*
D	Sensory neurone *Neuron deria*	Relay neurone *Neuron perantaraan*	Motor neurone *Neuron motor*

2. Diagram 2 shows the human endocrine system.

   Rajah 2 menunjukkan sistem endokrin manusia.

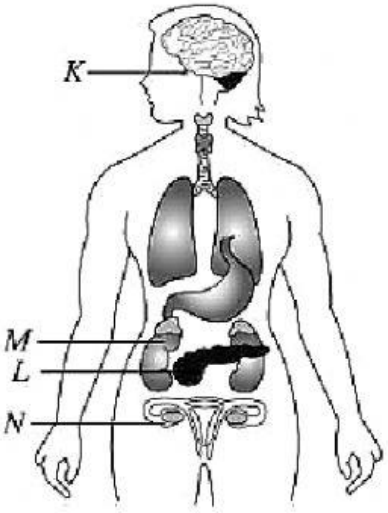

Diagram 2 / *Rajah 2*

Choose the correct match between the labelled endocrine glands and their functions.

Pilih padanan yang betul untuk kelenjar endokrin berlabel dan fungsinya.

	Endocrine gland ***Kelenjar endokrin***	**Function** ***Fungsi***
A	*K*	To control the secretion of hormones by the other endocrine glands *Mengawal perembesan hormon oleh kelenjar endokrin lain*
B	*L*	To control metabolic rate *Mengawal kadar metabolik*
C	*M*	To control blood glucose level *Mengawal aras glukosa dalam darah*
D	*N*	To control the amount of mineral salts in blood *Mengawal jumlah garam mineral dalam darah*

3. Diagram 3 shows an endocrine gland.

Rajah 3 menunjukkan satu kelenjar endokrin.

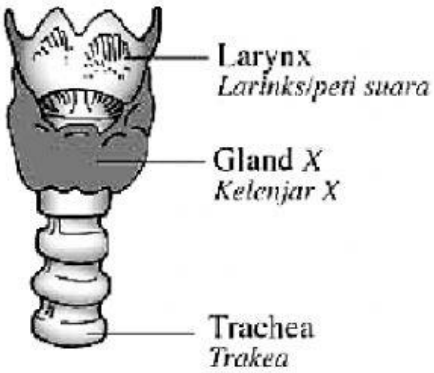

Diagram 3 / *Rajah 3*

The deficiency of a type of hormone secreted by gland *X* will cause

Kekurangan hormon yang dirembes oleh kelenjar X akan menyebabkan

A Goitre
Goiter

B Myxcedema
Myscedema

C Diabetes mellitus
Penyakit kencing manis

D Addison's disease
Penyakit Addison

4 Ali is involved in serious accident. His cerebellum is being injured. What will happen to Ali?

Ali terlibat dalam satu kemalangan yang serius. Serebelumnya telah tercedera. Apakah yang akan berlaku terhadap Ali?

A He may lose sense of balance and body coordiantion.
Dia mungkin kehilangan kesedaran seimbang dan koordinasi badan.

B He may not able to carry out various involuntary actions.
Dia mungkin tidak mampu menjalankan pelbagai tindak luar kawal.

C He may not able to think logically.
Dia mungkin tidak mampu berfikir secara logik.

D He may lose various sensations.
Dia mungkin kehilangan pelbagai deria.

5 Diagram 4 shows the stages in meiosis I.

Rajah 4 menunjukkan peringkat-peringkat dalam meiosis I.

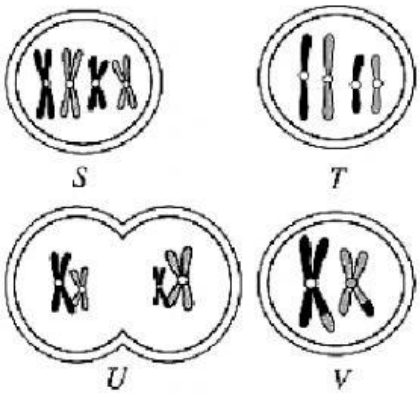

Diagram 4 / *Rajah 4*

Which of the following shows the correct sequence in the meiosis I?

Antara yang berikut, manakah menunjukkan urutan yang betul dalam meiosis I?

A *S, T, U, V*

B *T, S, U, V*

C *V, U, T, S*

D *V, U, S, T*

6 Diagram 5 shows the karyotype of a person.

Rajah 5 menunjukkan kariotip bagi seseorang.

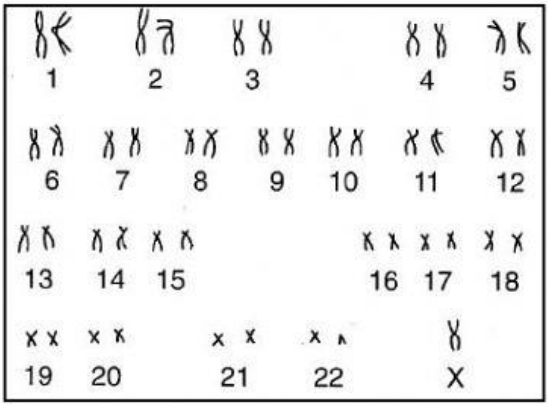

Diagram 5 / *Rajah 5*

What is the name of this type of genetic disorder?

Apakah nama bagi jenis kecacatan genetik itu?

A Haemophilia

Hemofilia

B Down's syndrome

Sindrom Down

C Turner's syndrome

Sindrom Turner

D Klinefelter's syndrome

Sindrom Klinefelter

7. Diagram 6 shows the cross-breeding between a red flower plant with a white flower plant.

Rajah 6 menunjukkan pembiakbakaan antara tumbuhan bunga merah dengan tumbuhan bunga putih.

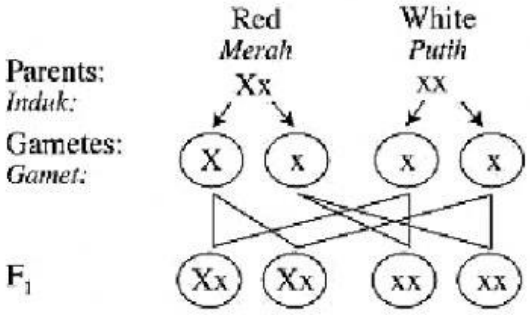

Diagram 6 / *Rajah 6*

What is the phenotype ratio of the red flower plant to the white flower plants in the offspring?

Berapakah nisbah fenotip oleh tumbuhan bunga merah kepada tumbuhan bunga putih dalam anak pokok?

A 2 red : 1 white
2 merah : 1 putih

B 1 red : 1 white
1 merah : 1 putih

C 1 red : 2 white
1 merah : 2 putih

D 0 red : 4 white
0 merah : 4 putih

8. Table 1 shows the elements W, X, Y and Z with their respective number of protons, number of neutrons and nucleon number.

Jadual 1 menunjukkan unsur-unsur W, X, Y dan Z dengan bilangan proton, bilangan neutron dan nombor nukleon masing-masing.

Element *Unsur*	Number of proton *Bilangan proton*	Number of neutrons *Bilangan neutron*	Number of nucleon Bilangan nukleon
W	5	6	11
X	6	6	12
Y	6	7	13
Z	7	7	14

Table 1/ *Jadual1*

Which of the following is a pair of isotopes?

Antara yang berikut, yang manakah pasangan isotope?

A W dan X
W and X

B X dan Y
X and Y

C Y dan Z
Y and Z

D W dan Z
W and Z

9. What is the process used to produce salt crystals from a salt solution?

Apakah proses yang digunakan untuk menghasilkan hablur garam daripada larutan garam?

A Boiling
Pendidihan

B Crystallation
Penghabluran

C Condensation
Kondensasi

D Fractional distillation
Penyulingan berperingkat

10. Which substance is made of ion particles?

Antara bahan berikut, yang manakah terbina daripada zarah-zarah ion?

A Iron
Besi

B Water
Air

C Sugar
Gula

D Salt
Garam

11. Diagram 7 shows a beaker containing some ice.

Rajah 7 menunjukkan suatu bikar berisi ais.

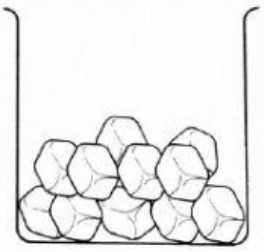

Diagram 7/ *Rajah 7*

What will happen when salt is added to the rice?

Apakah yang akan berlaku apabila garam ditambah kepada ais?

A The temperature rises above 100° C
Suhu meningkat melebihi 100° C

B The temperature drops to under 0° C
Suhu menurun kepada kurang 0° C

C The temperature remains at 0° C
Suhu kekal pada 0°C

D The temperature drops, then rises back to 0° C
Suhu menurun kemudian meningkat kembali kepada 0° C

12. Which of the following is a physical change?

Antara yang berikut, yang manakah perubahan fizik?

A Respiration
Respirasi

B Melting of ice
Peleburan ais

C Burning of paper
Pembakaran kertas

D Digestion of food
Pencernaan makanan

13. What are the advantages of lead-acid accumulator?

Apakah kelebihan akumulator asid-plumbum?

A Can be used forever

Boleh digunakan selama-lamanya

B Supplies high voltage

Membekalkan voltan tinggi

C Not rechargeable

Tidak boleh dicas semula

D No need to add distilled water

Tidak perlu tambah air suling

14. Table 2 shows the reactivity of metals V, W and X with acid and water.

Jadual 2 menunjukkan kereaktifan logam V, W dan X dengan asid dan air.

Metal *Logam*	Reaction with acid *Tindak balas dengan asid*	Reaction with water *Tindak balas dengan air*
V	Some *Sedikit*	Yes *Ya*
W	No *Tiada*	No *Tiada*
X	Yes *Ya*	Yes *Ya*

Table 2/ *Jadual 2*

Arrange the metals according to their reactivity in descending order.

Susun logam-logam tersebut mengikut kereaktifan menurun.

A *X, V, W*

B *V, X, W*

C *W, V, X*

D *X, W, V*

15. If you have an old rusty spoon, what should you do to refurbish it?
Sekiranya anda mempunyai sebatang sudu yang lama dan berkarat, bagaimanakah anda dapat memperbaharuinya semula?

A Through extraction method
Melalui kaedah pengekstrakan

B By using electroplating
Dengan menggunakan kaedah penyaduran

C By using purification method
Dengan menggunakan kaedah penulenan

D No specific method can be used
Tiada kaedah spesifik yang boleh digunakan

16. Why is beta radiation more widely used in industry than alpha and gamma radiation?
Mengapakah sinaran beta lebih banyak digunakan dalam industri berbanding dengan sinaran alfa dan sinaran gama?

A Beta radiation can penetrate very deeply into objects
Sinaran beta boleh menembus jauh ke dalam objek

B Beta radiation has higher penetration power than alpha radiation but not as dangerous as gamma rays.
Sinaran beta mempunyai kuasa penembusan yang lebih tinggi daripada sinaran alfa tetapi tidak sebahaya sinaran gama.

C Beta radiation is negatively charged.
Sinaran beta bercas negatif.

D Beta radiation has a very high velocity.
Sinaran beta mempunyai halaju yang sangat tinggi

17. Which material is suitable to be made into containers for radioactive substances?
Bahan yang manakah sesuai digunakan untuk membuat bekas simpanan bahan radioaktif?

A Paper
Kertas

B Copper
Kuprum

C Aluminium
Aluminium

D Lead
Plumbum

18. Diagram 8 shows the formation of an image by using a concave lens.

Rajah 8 menunjukkan pembentukan imej dengan menggunakan kanta cekung.

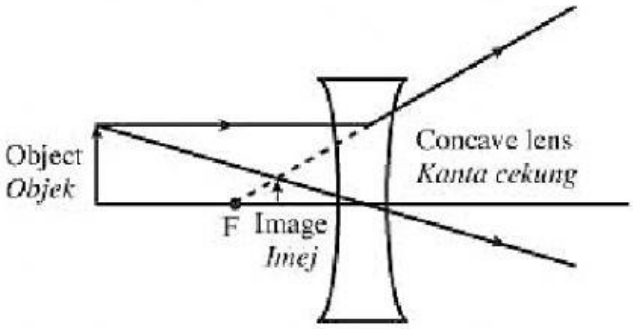

Diagram 8/ *Rajah 8*

How is the image formed if the object is moved closer to the lens?

Bagaimanakah dengan imej yang terbentuk jika objek dipindah dekat kepada kanta?

A The image is real and smaller than previous image.
Imej adalah nyata dan lebih kecil daripada imej dahulu.

B The image is virtual and smaller than previous image.
Imej adalah maya dan lebih kecil daripada imej dahulu.

C The image is virtual and bigger than previous image.
Imej adalah maya dan lebih besar daripada imej dahulu.

D The image is real and same size as the previous image.
Imej adalah nyata dan sama saiz dengan imej dahulu.

19. Diagram 16 shows a plant with yellow flower and green leaf under white light.

Rajah 16 menunjukkan satu tumbuhan dengan bunga kuning dan daun hijau di bawah cahaya putih.

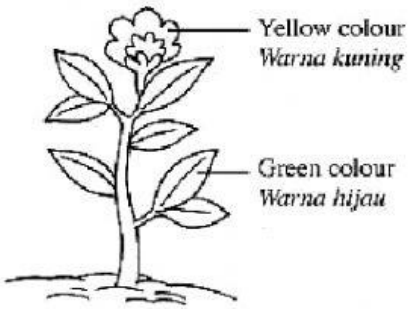

Diagram 9/ *Rajah 9*

What colours of the flower and leaf can be observed under red light?

Apakah warna bunga dan daun yang dapat diperhatikan di bawah cahaya merah?