

Bahagian B / Section B

[20 markah / 20 marks]

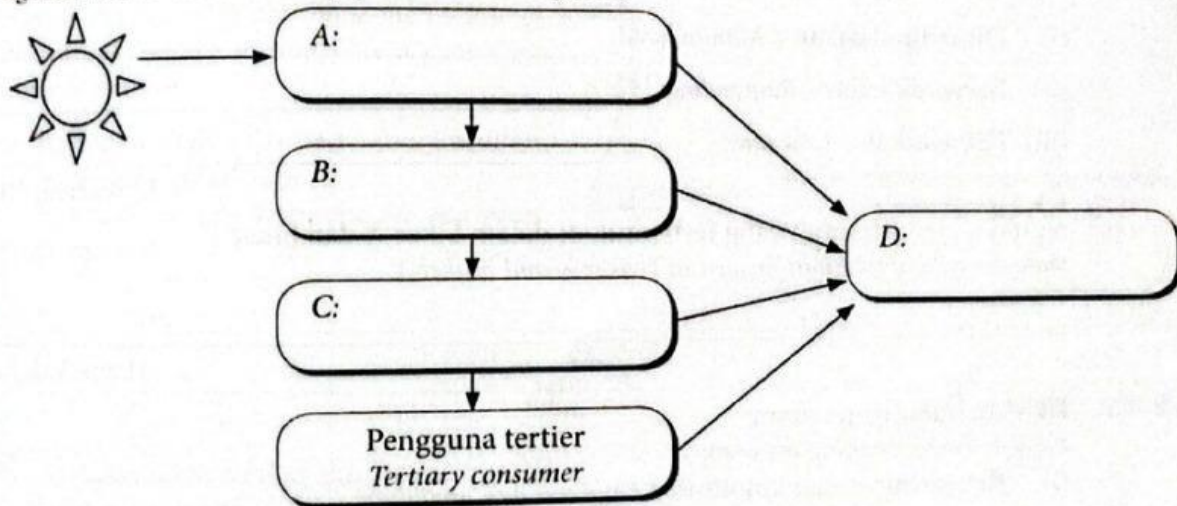
Jawab semua soalan

1. Nyatakan sama ada pernyataan di bawah **BENAR** atau **PALSU**.
State whether the statements below are **TRUE** or **FALSE**.

- (a) Kepelbagaian organisma hidup, iaitu haiwan, tumbuhan dan mikroorganisma dipanggil biodiversiti. / The variety of living organisms which are animals, plants and microorganisms is called biodiversity.
- (b) Ikan ialah haiwan poikiloterma yang melakukan persenyawaan dalam. / Fish is a poikilothermic that carries out internal fertilisation.
- (c) Cacing pita ialah sejenis haiwan invertebrata tanpa kaki yang mempunyai badan tanpa segmen. / A tape worm is an invertebrate without legs and without segmented body.
- (d) Pokok bunga matahari ialah sejenis tumbuhan dikotiledon yang mempunyai daun berurat jejala dan batang berkayu.
A sunflower plant is a dicotyledon that has leaves with network-like veins and a woody stem.

[4 markah / 4 marks]

2. Rajah 2 menunjukkan hubungan yang terbentuk dalam sebuah ekosistem.
Diagram 2 shows the relationship formed in an ecosystem.



Rajah 2/ Diagram 2

Namakan A, B, C dan D.

Name A, B, C and D.

[4 markah / 4 marks]

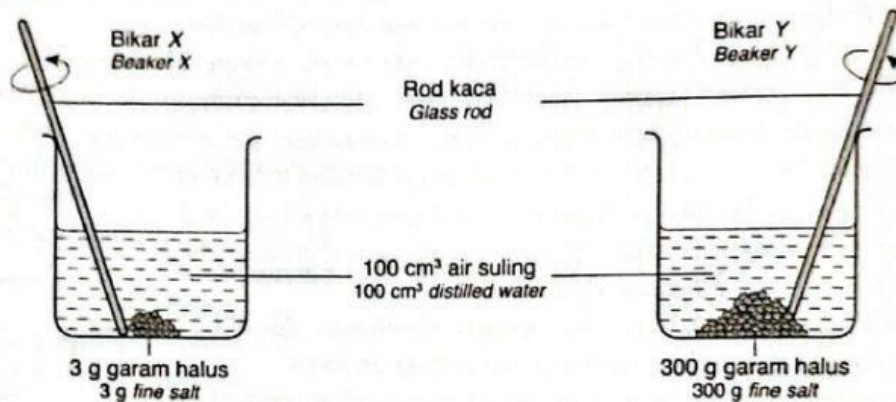
3. Gariskan jawapan yang betul.

Underline the correct answer.

- (a) Cas-cas yang sama akan saling (menarik / menolak). / Same charges will (attract / repel).
- (b) Daya tarikan dan daya tolakan antara cas elektrik dipanggil (daya kemagnetan / elektrostatik).
Pulling force and pushing force between electric charges are called (magnetism / electrostatic).
- (c) Aliran cas (positif / negatif) dari awan ke tanah dipanggil petir.
The flow of (positive / negative) charges from the clouds to the ground is called lightning.
- (d) Apabila objek bercas negatif menyentuh elektroskop yang bercas positif, kerajang emas (mencapah / tidak mencapah). / When a negatively charged object touches a positively charged electroscope, the gold leaf (diverges / does not diverge).

[4 markah / 4 marks]

4. Rajah 4 menunjukkan satu eksperimen menggunakan dua buah bikar, iaitu X dan Y yang berisi 100 cm^3 air suling. 3 g garam halus ditambah ke dalam bikar X, manakala 300 g garam halus ditambah ke dalam bikar Y. Kedua-dua bikar kemudiannya dikacau menggunakan sebatang rod. Diagram 4 shows an experiment done using two beakers, X and Y that are filled with 100 cm^3 distilled water. 3 g of fine salt is added into beaker X, while 300 g of the same salt is added into beaker Y. Both beakers are stirred using a rod.



Rajah 4/ Diagram 4

- (a) Nyatakan pemboleh ubah dalam eksperimen ini.

State the variables in this experiment:

(i) Dimanipulasikan / Manipulated: _____

(ii) Bergerak balas / Responding: _____

(iii) Dimalarkan / Constant: _____

[3 markah / 3 marks]

- (b) Nyatakan jenis larutan yang terbentuk di dalam bikar X dan bikar Y.

State the type of solutions formed in beaker X and beaker Y.

Beaker X: _____

Beaker Y: _____

[1 markah / 1 mark]

5. (a) Jelaskan hubungan antara:

Explain the relationship between:

(i) Kenyaringan dan amplitud / Loudness and amplitude

The louder the sound, the _____ the amplitude

The softer the sound, the _____ the amplitude

(ii) Kelangsingan dan frekuensi / Pitch and frequency

The higher the pitch of a sound, the _____ its frequency.

The lower the pitch of a sound, the _____ its frequency.

[2 markah / 2 marks]

- (b) Jelaskan sifat-sifat yang mempengaruhi kelangsingan bunyi alat-alat muzik berikut.
Explain the characters that affect the pitch of the following musical instruments.

(i) Piano / Piano:

The _____ depends on the _____ being _____.

pressed

pitch

key

(ii) Rekorder / Recorder:

The pitch depends on the _____ of the air column.

Short air columns produce _____ pitched sound, and

_____ air column produce low pitched sound.

high

long

length

[2 markah / 2 marks]

Bahagian C / Section C

[60 markah / 60 marks]

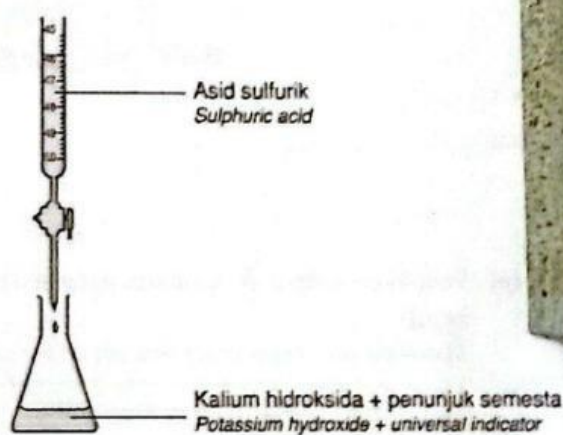
Jawab semua soalan

6. Ahmad menjalankan eksperimen pentitratan seperti yang ditunjukkan dalam Rajah 6 untuk menentukan isi padu asid sulfurik yang diperlukan untuk meneutralkan larutan kalium hidroksida.

Ahmad carries out a titration experiment as shown in Diagram 6 to determine the volume of sulphuric acid needed to neutralise a potassium hydroxide solution.

- (a) Bagaimanakah Ahmad menentukan takat akhir pentitratan?

How does Ahmad determine the end point of titration.



Rajah 6/ Diagram 6

When the potassium hydroxide solution change colour from pink to green

green

hydroxide

pink

[2 markah / 2 marks]

- (b) Apakah maksud takat akhir pentitratan?

What is the meaning of the end point of titration?

The point when _____ base or alkali has been _____ by _____ or vice versa.

neutralised

acid

all

[2 markah / 2 marks]

- (c) Nyatakan perubahan yang berlaku kepada larutan kalium hidroksida sebelum pentitratan berlaku dan ketika pentitratan berakhir jika penunjuk yang digunakan ialah fenolftalein.

State the change in the potassium hydroxide solution before the titration and when the titration ends if the indicator used is phenolphthalein.

_____ titration, _____ indicator in potassium hydroxide is _____, when titration ends it becomes _____.

phenolphthalein

Before

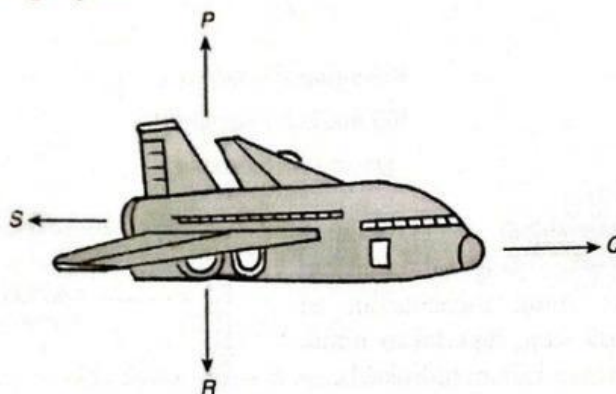
pink

[2 markah / 2 marks]

- (d) Tulis satu persamaan perkataan bagi tindak balas yang berlaku dalam eksperimen ini.
Write a word equation for the reaction that takes place in this experiment.



7. Rajah 7 menunjukkan sebuah kapal terbang yang sedang bergerak.
Diagram 7 shows a moving airplane.



Rajah 7/ Diagram 7

- (a) Padankan empat daya utama yang sedang bertindak ke atas kapal terbang tersebut dengan betul.
Match the four main forces that act on the airplane correctly.

(i) Daya tujahan dari enjin.
Thrust force from the engine.

(ii) Berat kapal terbang.
Weight of the aeroplane.

(iii) Daya geseran
Friction force

(iv) Daya angkat
Lift force

P

Q

R

S

[4 markah / 4 marks]

- (b) Pada pendapat anda, bagaimanakah kapal terbang tersebut mengekalkan keapungannya?
In your opinion, how does the airplane maintain its buoyancy?

its at a certain where the force is larger than the force.

thrust

velocity

Maintaining

speed

friction

[2 markah / 2 marks]

- (c) Nyatakan dua daya yang kekal apabila kapal terbang menambah kelajuannya.
State two forces that remain unchanged when the airplane increases its speed.

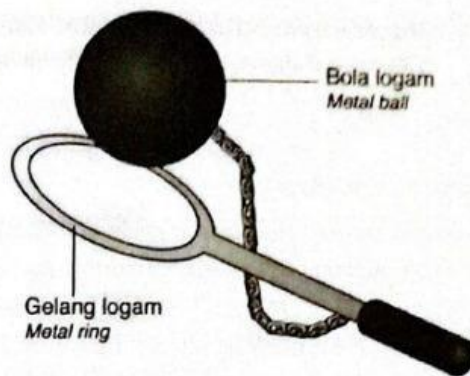
(i)

(ii)

[2 markah / 2 marks]

8. Pada suhu bilik, bola logam dalam Rajah 8 boleh melepasi gelung logam dengan mudah. Tetapi apabila bola logam dipanaskan dengan kuat, bola logam tidak lagi dapat melepasi gelung.

At room temperature, a metal ball such as in Diagram 8 can easily pass through the metal ring. But when the ball is heated strongly, it cannot pass through the ring anymore.



Rajah 8/ Diagram 8

- (a) Mengapakah bola logam tidak dapat melepasi gelung apabila dipanaskan?

Why does the metal ball cannot slip through the metal ring when it is heated.

The metal ball and its volume . This is because, when , the in the metal ball vibrates more and move further from each other.

vigorously heated expands apart particles increases [2 markah / 2 marks]

- (b) Apakah yang perlu dilakukan supaya bola logam dapat melepasi gelung? Jelaskan jawapan anda.

What should be done to enable the metal ball to slip through the ring? Explain your answer.

Metal ball should be so that particles vibrate more , Kinetic energy will , particles will be to each other and cause the metal ball to .

closer decrease cooled contract slowly [2 markah / 2 marks]

- (c) Berikan empat contoh aplikasi pengembangan dan pengecutan jirim dalam kehidupan harian.

Give four examples of applications of expansion and contraction in daily life.

- in the thermometer

- Expansion between train

- strip in iron

- cables

rails Electrical gap Mercury Bimetallic [4 markah / 4 marks]

- (d) Berikan dua perbezaan antara konduksi dan perolakan.

Give two differences between conduction and convection.

1. In conduction, heat flows through whereas in convection, heat flows through gas and .

2. In conduction, heat is transferred through of particles whereas in convection, the particles of fluids and gas move and the heat with them.

vibration carry freely solids fluids [2 markah / 2 marks]