

LATIHAN BAHAGIAN C - SAINS TINGKATAN 3

NAMA / NAME

KELAS / CLASS

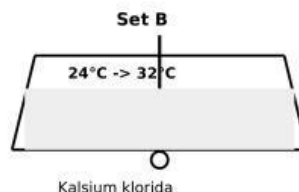
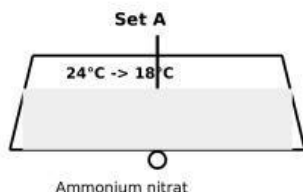
ARAHAN: Teliti rajah dan maklumat yang diberikan. Pilih satu jawapan yang betul, A atau B, bagi setiap soalan.
INSTRUCTIONS: Study the diagrams and information given. Choose one correct answer, A or B, for each question.

Soalan Eksperimen 1: Tindak Balas Eksotermik dan Endotermik

Experimental Question 1: Exothermic and Endothermic Reactions

Seorang murid mengkaji perubahan suhu apabila dua bahan berbeza dilarutkan dalam air. Suhu awal air bagi kedua-dua set ialah 24°C.

A student investigates the temperature change when two different substances are dissolved in water. The initial water temperature for both sets is 24°C.



(a) Apakah pemerhatian bagi Set A?

What is the observation for Set A?

A	Suhu menurun daripada 24°C kepada 18°C. The temperature decreases from 24°C to 18°C.	☐
B	Suhu meningkat daripada 24°C kepada 32°C. The temperature increases from 24°C to 32°C.	☐

(b) Apakah inferens yang sesuai bagi Set A?

What is a suitable inference for Set A?

A	Tindak balas membebaskan haba ke persekitaran. The reaction releases heat to the surroundings.	☐
B	Tindak balas menyerap haba daripada persekitaran. The reaction absorbs heat from the surroundings.	☐

(c) Apakah pemboleh ubah dimanipulasikan?

What is the manipulated variable?

A	Jenis bahan yang dilarutkan dalam air. The type of substance dissolved in water.	☐
B	Perubahan suhu campuran. The temperature change of the mixture.	☐

(d) Apakah pemboleh ubah bergerak balas?

What is the responding variable?

A	Jenis bahan yang dilarutkan dalam air. The type of substance dissolved in water.	☐
B	Perubahan suhu campuran. The temperature change of the mixture.	☐

(e) Hipotesis manakah yang sesuai?

Which hypothesis is suitable?

A	Jenis bahan yang berbeza menghasilkan perubahan suhu yang berbeza. Different substances produce different temperature changes.	☐
B	Semua bahan menghasilkan perubahan suhu yang sama. All substances produce the same temperature change.	☐

(f) Pengelasan manakah yang betul?

Which classification is correct?

A	Set A eksotermik; Set B endotermik. Set A is exothermic; Set B is endothermic.	☐
B	Set A endotermik; Set B eksotermik. Set A is endothermic; Set B is exothermic.	☐

(g) Bagaimanakah ujian yang adil dapat dipastikan?

How can a fair test be ensured?

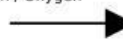
A	Gunakan isipadu air yang sama bagi kedua-dua set. Use the same volume of water for both sets.	☐
B	Gunakan isipadu air yang berbeza bagi kedua-dua set. Use different volumes of water for both sets.	☐

LATIHAN BAHAGIAN C - SAINS TINGKATAN 3

Soalan Eksperimen 2: Kereaktifan Logam terhadap Oksigen
Experimental Question 2: Reactivity of Metals towards Oxygen

Eksperimen membandingkan kereaktifan magnesium, aluminium dan zink terhadap oksigen.
The experiment compares the reactivity of magnesium, aluminium and zinc towards oxygen.

Oksigen / Oxygen



Logam dalam oksigen / Metal in oxygen



Logam Metal	Pemerhatian Observation
Magnesium	Terbakar dengan nyalaan putih yang sangat terang. Burns with a very bright white flame.
Aluminium	Terbakar dengan nyalaan terang. Burns with a bright flame.
Zink	Berpijar dengan terang. Glows brightly.

(a) Apakah tujuan eksperimen ini?

What is the aim of this experiment?

A	Mengkaji kekonduksian elektrik beberapa logam. To investigate the electrical conductivity of several metals.	☐
B	Membandingkan kereaktifan beberapa logam terhadap oksigen. To compare the reactivity of several metals towards oxygen.	☐

(b) Apakah pemboleh ubah dimanipulasikan?

What is the manipulated variable?

A	Jenis logam. Type of metal.	☐
B	Keamatan nyalaan. Intensity of the flame.	☐

(c) Apakah pemboleh ubah bergerak balas?

What is the responding variable?

A	Jenis logam yang digunakan. Type of metal used.	☐
B	Keamatan nyalaan / keadaan pembakaran logam. Intensity of flame / condition of metal combustion.	☐

(d) Susunan kereaktifan menaik yang betul ialah...

The correct order of increasing reactivity is...

A	Zink → Aluminium → Magnesium. Zinc → Aluminium → Magnesium.	☐
B	Magnesium → Aluminium → Zink. Magnesium → Aluminium → Zinc.	☐

(e) Inferens yang betul bagi magnesium ialah...

The correct inference for magnesium is...

A	Magnesium paling kurang reaktif terhadap oksigen kerana terbakar dengan cergas. Magnesium is the least reactive towards oxygen because it burns vigorously.	☐
B	Magnesium sangat reaktif terhadap oksigen kerana terbakar dengan cergas. Magnesium is very reactive towards oxygen because it burns vigorously.	☐

(f) Hipotesis manakah yang sesuai?

Which hypothesis is suitable?

A	Semakin reaktif logam, semakin cergas pembakarannya dalam oksigen. The more reactive the metal, the more vigorously it burns in oxygen.	☐
B	Semakin reaktif logam, semakin kurang cergas pembakarannya dalam oksigen. The more reactive the metal, the less vigorously it burns in oxygen.	☐

(g) Definisi secara operasi bagi logam yang lebih reaktif ialah...

The operational definition of a more reactive metal is...

A	Logam yang mempunyai jisim lebih besar sebelum dipanaskan. A metal that has a greater mass before heating.	☐
B	Logam yang terbakar lebih cergas / menghasilkan nyalaan lebih terang dalam keadaan yang sama. A metal that burns more vigorously / produces a brighter flame under the same conditions.	☐