Bab 1 & 2 : Pengenalan kepada Kimia & Jirim dan Struktur Atom
Chapter* 1 & 2 : *Introduction to Chemistry & Matter and the Atomic Structure

Soalan Objektif

Objective Question

1 Antara pernyataan berikut, yang manakah benar tentang Kimia?

Which of the following statement is true about Chemistry?

A Kajian tentang mineral semula jadi dan sifatnya.

A study about natural minerals and their properties

B Kajian tentang komposisi, sifat dan perubahan jirim.

A study about composition, properties and changes in matter.

C Kajian tentang hubungan antara organisma hidup dan bahan kimia.

A study about the relationship between living organism and chemicals.

D Kajian tentang pembuatan bahan-bahan kimia baharu.

A study about making of new chemicals.

Konstruk : Mengingat

2 Pernyataan berikut dijumpai di dalam laporan yang ditulis oleh seorang murid.

The following statement is found in a report written by a student.

> **Peningkatan suhu air akan meningkatkan kadar keterlarutan garam dalam air.**
>
> ***The increase in temperature of water, will increase the solubility of salt in water.***

Antara berikut yang manakah diterangkan oleh pernyataan itu?

Which of the following is described in the statement?

A Tujuan

Aim

B Pemerhatian

Observation

C Hipotesis

Hyphothesis

Konstruk : Memahami

LIVEWORKSHEETS

3 Seorang pelajar menjalankan eksperimen untuk menentukan kadar keterlarutan garam untuk saiz yang berbeza. Antara radas berikut, yang manakah penting untuk eksperimen tersebut?

A student carries out an experiment to determine the rate of dissolving salt at different size. Which of the following apparatus is essential for the experiment?

A Kelalang kon
Conical flask

B Jam randik
Stop watch

C Mangkuk penyejat
Evaporating dish

D Penunu Bunsen
Bunsen burner

Konstruk : Mengaplikasi

4 Antara yang berikut, yang manakah merupakan contoh bagi jirim?

Which of the following is an example of matter?

A Haba
Heat

B Cahaya
Light

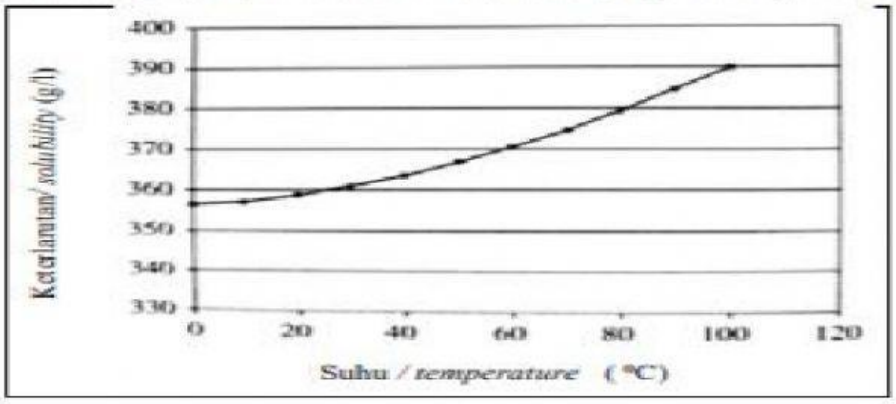
C Air
Udara

D Api
Fire

Konstruk : Memahami

5 Rajah 1 menunjukkan graf keterlarutan natrium klorida melawan suhu air.

Diagram 1 shows a graph of sodium chloride solubility against temperature of water.



Rajah / *Diagram* 1

Antara pernyataan berikut, yang manakah betul?

Which of the following statements is correct?

A Suhu merupakan pemboleh ubah bergerak balas.
Temperature is the responding variable

B Keterlarutan tidak dipengaruhi oleh suhu
Solubility is not affected by the temperature

C Jumlah natrium klorida merupakan pembolehubah yang dimanipulasi dalam eksperimen.
Amount of sodium chloride is the manipulated variable in the experiment

D Menaikkan suhu akan meningkatkan jumlah natrium klorida yang larut.
Increasing the temperature will increase the amount of sodium chloride dissolved

Konstruk : Menganalisis

LIVEWORKSHEETS

6 Rajah 2 menunjukkan susunan zarah-zarah bagi suatu bahan yang mengalami perubahan keadaan fizikal melalui proses Y.

Diagram 2 shows the arrangement of particles of a substance that undergo change in the physical state through process Y.

Rajah / *Diagram* 2

Antara bahan berikut, yang manakah mengalami proses Y?

Which of the following substances undergo process Y?

I Bromin
Bromine

II Iodin
Iodine

III Klorin
Chlorine

IV Naftalena
Naphthalene

A I dan IV
1 *and* IV

B I dan III
1 *and* III

C II dan III
II *and* III

D II dan IV
II *and* IV

Konstruk : Memahami

7 Rajah 3 menunjukkan perwakilan piawai bagi natrium-23.

Diagram 3 *shows the standard represented for sodium*-23.

$$^{23}_{11}Na$$

Rajah / *Diagram* 3

Antara berikut, yang manakah betul bagi ion Na^+ ?

Which of the following statements is correct for Na^+ ion?

	Bilangan proton *Number of protons*	**Bilangan neutron** *Number of neutrons*	**Bilangan elektron** *Number of electrons*
A	11	12	11
B	11	12	10
C	10	13	11
D	12	11	10

Konstruk : Menganalisis

LIVEWORKSHEETS

8 Jadual 1 menunjukkan takat lebur dan takat didih bahan P,Q,R dan S.

Table 1 below shows the melting and boiling points of substances P, Q, R *and* S.

Bahan ***Substance***	**Takat lebur (°C)** ***Melting point*** **(°C)**	**Takat didih (°C)** ***Boiling point*** **(°C)**
P	-75	-15
Q	-20	97
R	35	147
S	5	120

Table / *Jadual* 1

Bahan yang manakah cecair pada suhu bilik?

Which substances is a liquid at room temperature?

A Q sahaja
Q *only*

B R sahaja
R *only*

C Q dan S
Q *and* S

D R dan S
R *and* S

Konstruk : Mengaplikasi

9 Unsur X terdiri daripada dua isotop, $^{107}_{47}Cu$ dan $^{109}_{47}Cu$ dengan peratus kelimpahan 56% dan 44% masing-masing? Apakah jisim atom relatif unsur X?

Element X *consists of two isotopes.* $^{107}_{47}Cu$ *and* $^{109}_{47}Cu$ *that have abundance of* 56% *and* 44% *respectively. What is the relative atomic mass of element* X?

A 107.0

B 107.5

C 107.9

D 109.0

Konstruk : Mengaplikasi

LIVEWORKSHEETS

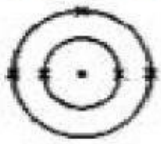
10 Maklumat berikut menggambarkan atom Q.

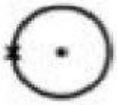
The following information describes atom Q.

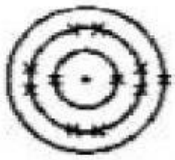
- mempunyai 3 proton
  has 3 protons
- reacts with cold water
  bertindak balas dengan air sejuk

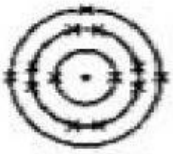
Antara atom yang berikut, yang manakah bertindak balas dengan cara yang serupa dengan atom Q?

Which of the following atoms has similar reaction with atom Q?

A 

C 

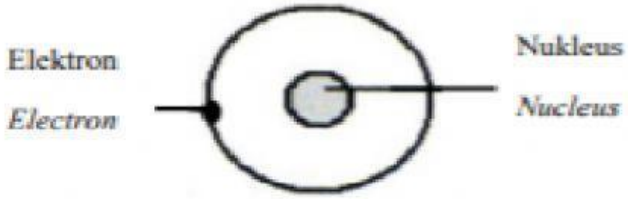
B 

D 

Konstruk : Menganalisis

11 Rajah 4 menunjukkan struktur atom

Diagram 4 shows the structure of an atom



Rajah / *Diagram* 4

Apakah zarah-zarah sub atom di dalam nucleus?

What are the subatomic particles in the nucleus?

A Neutron sahaja
Neutron only

B Proton dan neutron
Proton and neutron

C Elektron dan proton
Electron and proton

D Elektron dan neutron
Electron and neutron

Konstruk : Mengingat

LIVEWORKSHEETS

12 Antara berikut, yang manakah pasangan yang betul?

Which of the following pairs are matched correctly?

	Atom ***Atom***	**Ion** **Ion**	**Molekul** **Molecule**
A	Ammonia Ammonia	Natrium klorida *Sodium chloride*	Karbon *Carbon*
B	Magnesium *Magnesium*	Raksa *Merkuri*	Karbon dioksida *Carbon dioxide*
C	Natrium *Sodium*	Litium oksida *Lithium oxide*	Bromin *Bromine*
D	Kuprum(II) sulfat *Copper(II) sulphate*	Sulfur dioksida *Sulphur dioxide*	Hidrogen *Hydrogen*

Konstruk : Mengingat

13 Karbon-14 adalah isotop bagi karbon. Apakah kegunaan karbon-14?

Carbon-14 is an isotope of carbon. What is the use of carbon-14?

A Menganggar umur fosil dan artifak

Estimate the age of fossils and artifacts

B Radioterapi untuk merawat kanser

Radiotherapy for the treatment of cancer

C Memulihkan degupan jantung pesakit jantung

Regulate the heartbeats of patients with heart problems.

D Memusnahkan bakteria dalam makanan tanpa mengubah kualiti makanan.

Destroy bacteria in food without changing the quality of food.

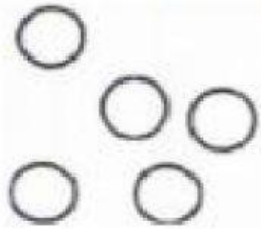
Konstruk : Mengingat

LIVEWORKSHEETS

14 Rajah manakah menunjukkan daya tarikan antara zarah yang paling kuat?

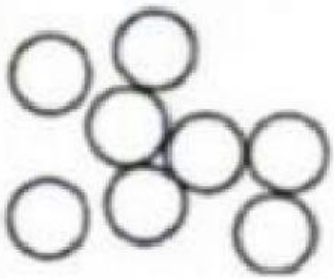
Which diagram shows the strongest attraction force between the particles?

A

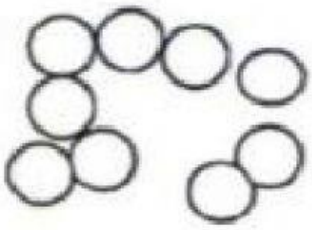


C

B



D



Konstruk : Memahami

15 Ion P^{3+} mempunyai 14 neutron dan 10 elektron.

Yang manakah antara berikut menunjukkan nombor proton dan nombor nucleon bagi atom P?

P^{3+} *ion has* 14 *neutrons and* 10 *electrons.*

Which of the following is the proton number and nucleon number for atom P?

	Nombor proton ***Proton number***	**Nombor nukleon** ***Nucleon number***
A	10	27
B	13	27
C	13	14
D	27	13

Konstruk : Memahami

LIVEWORKSHEETS

16 Jadual 2 menunjukkan takat lebur dan takat didih bagi bahan W, X, Y dan Z.

Table 2 shows the melting point and boiling point of substances W, X, Y and Z.

Bahan ***Substance***	**Takat lebur (°C)** ***Melting point (°C)***	**Takat didih (°C)** ***Boiling point (°C)***
W	-180.0	-120.0
X	-78.0	70.0
Y	1.00	85.0
Z	117.0	230.0

Bahan manakah dalam keadaan pepejal pada 0°C?

Which substance is a solid at 0°C?

A W dan X
W *and* X

B X dan Y
X and Y

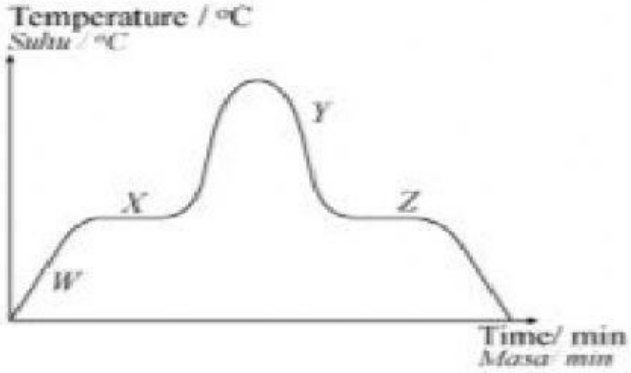
C X dan Z
X *and* Z

D Y dan Z
Y *and* Z

Konstruk : Menganalisis

17 Rajah 5 ialah satu graf yang menunjukkan suhu melawan masa bagi satu sampel plumbum.

Diagram 5 is a graph that shows the temperature against time for a sample of lead



Rajah / Diagram 5

Titik berlabel yang manakah mewakili proses peleburan?

Which of the labelled points represent the melting process?

A W
B X
C Y
D Z

Konstruk : Memahami

LIVEWORKSHEETS

18 Suatu sampel cecair dipanaskan. Antara yang berikut, manakah benar tentang kelajuan, jarak dan saiz zarah-zarah?

A sample of liquid is heated up. Which of the following is true about the velocity, distance and size of its particles?

	Kelajuan ***Velocity***	**Jarak** ***Distance***	**Saiz** ***Size***
A	Meningkat *Increase*	Menurun *Decreases*	Tiada perubahan *No changes*
B	Menurun *Decreases*	Menurun *Decreases*	Meningkat *Increase*
C	Meningkat *Increase*	Meningkat *Increase*	Tiada perubahan *No changes*
D	Meningkat *Increase*	Meningkat *Increase*	Menurun *Decreases*

Konstruk : Memahami

19 Takat lebur dan takat didih bagi bahan W masing-masing ialah –20°C dan 18°C. Antara pernyataan yang berikut, manakah benar tentang W pada suhu

The melting point and boiling point of substance W are –20°C and 18°C respectively. Which of the following statements is true about W at room temperature?

A Ia mempunyai isi padu yang tetap.
It has fixed volume.

B Zarah-zarah bergetar dan berputar pada kedudukan tetapnya.
The particles are vibrating and rotating about in their fixed positions.

C Kandungan tenaga bagi zarah-zarah adalah rendah
The energy content of the particles is low.

D Daya tarikan antara zarah-zarah adalah sangat lemah
The forces of attraction between the particles are very weak.

Konstruk : Menganalisis

LIVEWORKSHEETS