For Examiner's Use

This question paper consists of two questions: **Question 1** and **Question 2**.
Kertas peperiksaan ini mengandungi dua soalan: **Soalan 1** *dan* **Soalan 2**.

Answer **all** questions.
Jawab **semua** *soalan.*

1 Diagram 1.1 shows the apparatus set-up of an experiment to compare the hardness of a pure metal, copper and its alloy, bronze.
Rajah 1.1 *menunjukkan susunan radas bagi satu eksperimen untuk membandingkan kekerasan suatu logam tulen, kuprum dengan aloinya, gangsa.*

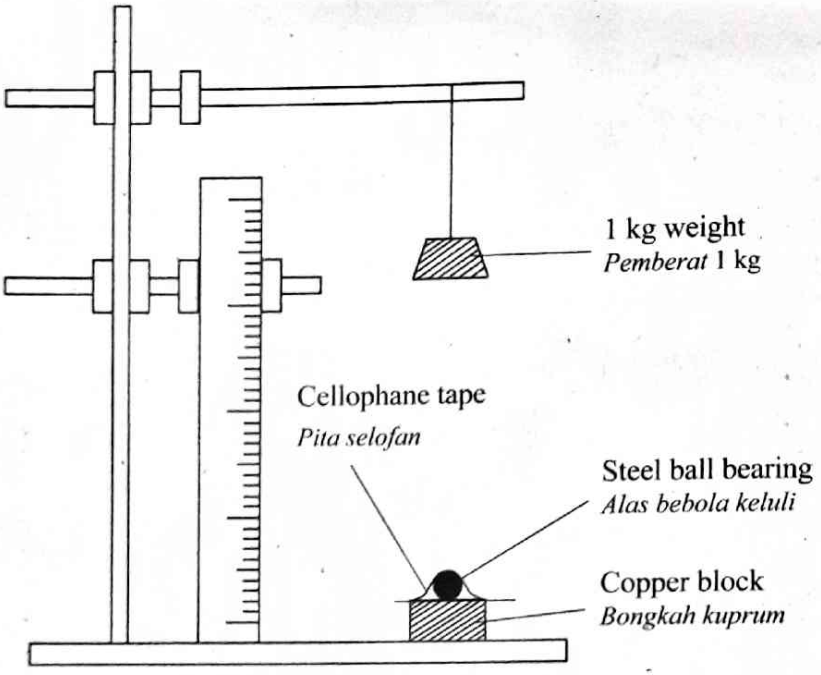

Diagram 1.1
Rajah 1.1

A weight with a mass of 1 kg is hung above the copper block at the height of 50 cm. The weight is dropped and hits the steel ball bearing. The diameter of the dent formed on the block is measured. The experiment is repeated by using bronze block to replace the copper block.
Satu pemberat berjisim 1 kg *digantungkan di atas bongkah kuprum pada ketinggian* 50 cm. *Pemberat itu dijatuhkan dan menghentak pada alas bebola keluli. Diameter lekuk yang terbentuk pada bongkah diukur. Eksperimen tersebut diulang dengan menggunakan bongkah gangsa bagi menggantikan bongkah kuprum.*

Diagram 1.2 shows the diameter of the dents of the copper and bronze blocks.
Rajah 1.2 *menunjukkan diameter lekuk bagi bongkah kuprum dan bongkah gangsa.*

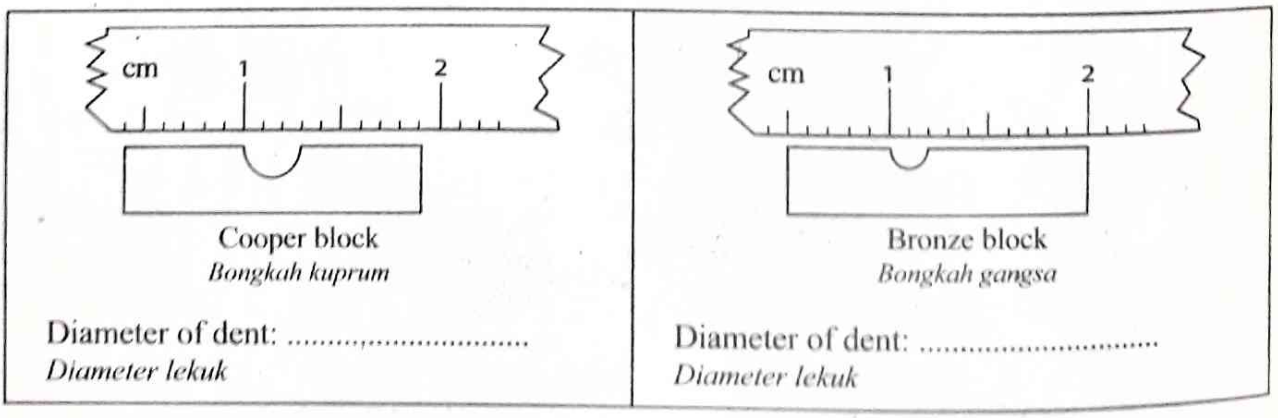

Diagram 1.2
Rajah 1.2

(a) Record the diameter of the dents in the spaces provided in Diagram 1.2.
Rekod diameter lekuk pada ruang yang disediakan dalam Rajah 1.2.

[3 *marks*]
[3 *markah*]

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1(a) 3

(b) Construct a table to record the diameter of the dents of the copper and bronze blocks.
Bina satu jadual untuk merekod diameter lekuk bongkah kuprum dan bongkah gangsa.

[3 *marks*]
[3 *markah*]

1(b) 3

(c) (i) Based on Diagram 1.2, state **one** observation on the blocks.
Berdasarkan pada Rajah 1.2, nyatakan **satu** *pemerhatian ke atas bongkah itu.*

.....

[3 *marks*]
[3 *markah*]

1(c)(i) 3

(ii) State the inference based on the observation in **1** (c)(i).
Nyatakan inferens berdasarkan pemerhatian di **1** (c)(i).

.....

[3 *marks*]
[3 *markah*]

1(c)(ii) 3

(d) By referring to the arrangement of particles, explain why the diameter of the dents on the both blocks in Diagram 1.2 are different.
Dengan merujuk kepada susunan zarah, terangkan mengapa diameter lekuk pada kedua-dua bongkah dalam Rajah 1.2 adalah berbeza.

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.....

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[3 *marks*]
[3 *markah*]

1(d) 3

(e) State the operational definition of alloy in this experiment.
Nyatakan definisi secara operasi bagi aloi dalam eksperimen ini.

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.....

[3 *marks*]
[3 *markah*]

1(e) 3

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(*f*) For this experiment, state
Bagi eksperimen ini, nyatakan

(i) the manipulated variable
pemboleh ubah dimanipulasikan

.....

(ii) the responding variable
pemboleh ubah bergerak balas

.....

(iii) the fixed variable.
pemboleh ubah dimalarkan.

.....

[3 *marks*]
[3 *markah*]

1(*f*) 3

(*g*) State **one** hypothesis for this experiment.
Nyatakan **satu** *hipotesis bagi eksperimen ini.*

.....

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[3 *marks*]
[3 *markah*]

1(*g*) 3

(*h*) Another experiment is carried out to investigate the relationship between the height of weight used and the diameter of the dent formed on the block.
Diagram 1.3 shows the graph of diameter of the dent against the height of weight of the experiment.
Suatu eksperimen yang lain dijalankan untuk menyiasat hubungan antara ketinggian pemberat yang digunakan dengan diameter lekuk yang terbentuk pada bongkah itu.
Rajah 1.3 *menunjukkan graf diameter lekuk melawan ketinggian pemberat bagi eksperimen itu.*

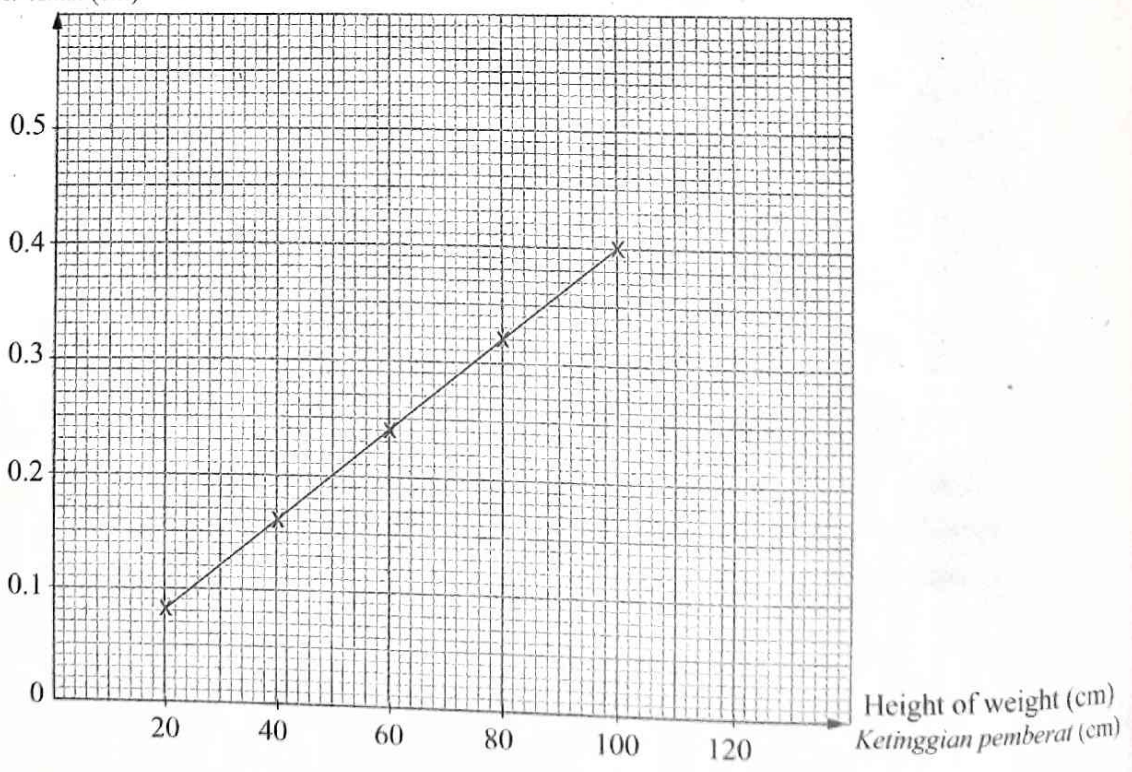

Diagram 1.3
Rajah 1.3

Using the graph in Diagram 1.3, determine the diameter of the dent on the block if the height of weight above the block is 120 cm. Show on the graph how you could obtain the diameter of the dent.

Menggunakan graf pada Rajah 1.3, tentukan diameter lekuk pada bongkah jika ketinggian pemberat di atas bongkah ialah 120 cm. Tunjukkan pada graf bagaimana anda memperoleh diameter lekuk itu .

.....

[3 *marks*]
[3 *markah*]

For Examiner's Use

1(*h*)

3

(*i*) Diagram 1.4 shows the condition of the steel ball bearing when exposed to the air after a long period of time.

Rajah 1.4 menunjukkan keadaan alas bebola keluli apabila terdedah kepada udara selepas suatu tempoh masa yang panjang.

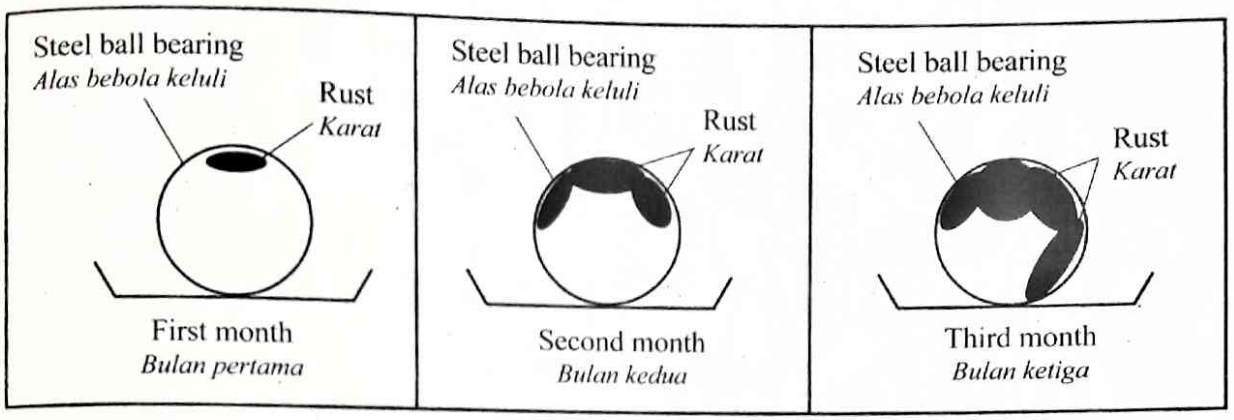

Diagram 1.4
Rajah 1.4

State the relationship between the quantity of rust formed with time.
Nyatakan hubungan antara kuantiti karat yang terbentuk dengan masa.

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.....

.....

[3 *marks*]
[3 *markah*]

1(*i*)

3

(*j*) A list of the substances is identified as follows:
Satu senarai bahan dikenal pasti seperti berikut:

Pewter *Piuter*	Stanum *Timah*	Brass *Loyang*
Duralumin *Duralumin*	Zinc *Zink*	Aluminium *Aluminium*

Classify these substances into pure metal and alloy.
Kelaskan bahan ini kepada logam tulen dan aloi.

[3 *marks*]
[3 *markah*]

1(*j*)

3

Total A1

33

2 Diagram 2 shows a group of scout is setting up a tent by the beach.
Rajah 2 menunjukkan sekumpulan pengakap sedang mendirikan khemah di tepi pantai.

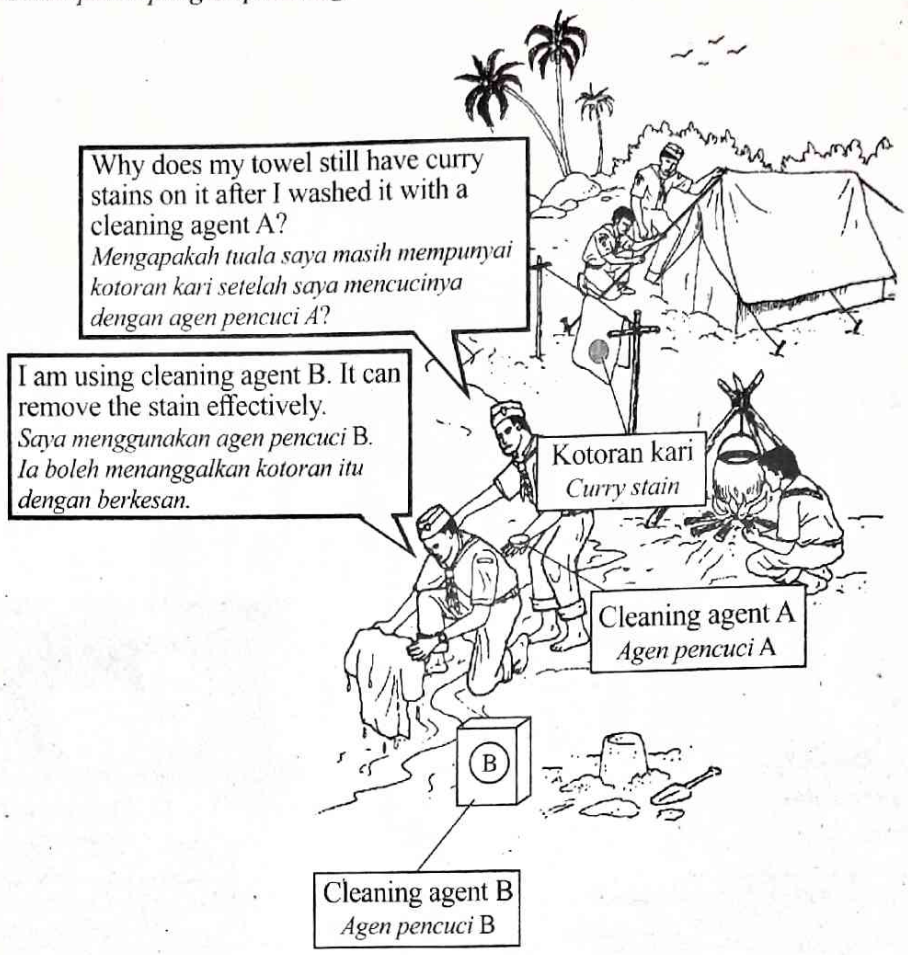

Diagram 2
Rajah 2

Based on conversation in Diagram 2, identify cleaning agent A and B.
Plan a laboratory experiment to study the effectiveness of the agents in hard water.
Berdasarkan perbualan pada Rajah 2, kenal pasti agen pencuci A *dan agen pencuci* B. *Rancang satu eksperimen makmal untuk mengkaji keberkesanan agen tersebut dalam air liat.*

Your planning should include the following aspects:
Perancangan anda hendaklah mengandungi aspek-aspek berikut:

(a) Problem statement
Penyataan masalah
(b) All the variables
Semua pemboleh ubah
(c) Statement of the hypothesis
Penyataan hipotesis
(d) List of materials and apparatus
Senarai bahan dan radas
(e) Procedure for the experiment
Prosedur eksperimen
(f) Tabulation of data
Penjadualan data

[17 *marks*]
[17 *markah*]

END OF QUESTION PAPER
KERTAS PEPERIKSAAN TAMAT