Section A
Bahagian A

[20 *marks*]
[20 *markah*]

Answer **all** questions in this section.
Jawab **semua** *soalan dalam bahagian ini.*

1 Diagram 1 shows an experiment to study photosynthesis process of an aquatic plant. The volume of gas X released was recorded every thirty minutes for three hours.
Rajah 1 *menunjukkan eksperimen untuk mengkaji proses fotosintesis tumbuhan air. Isipadu gas* X *yang dibebaskan direkodkan setiap tiga puluh minit selama tiga jam.*

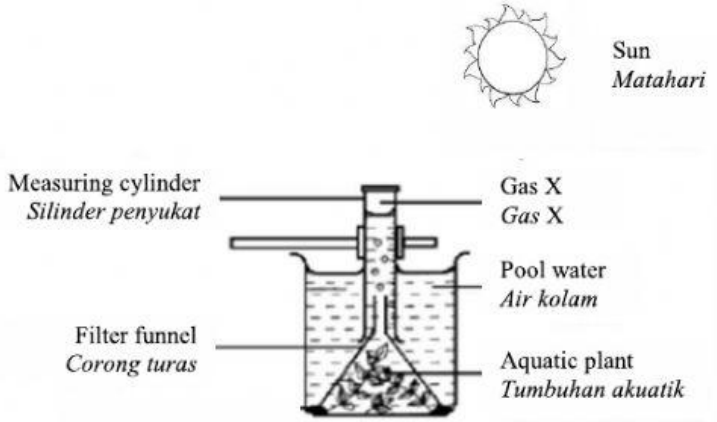


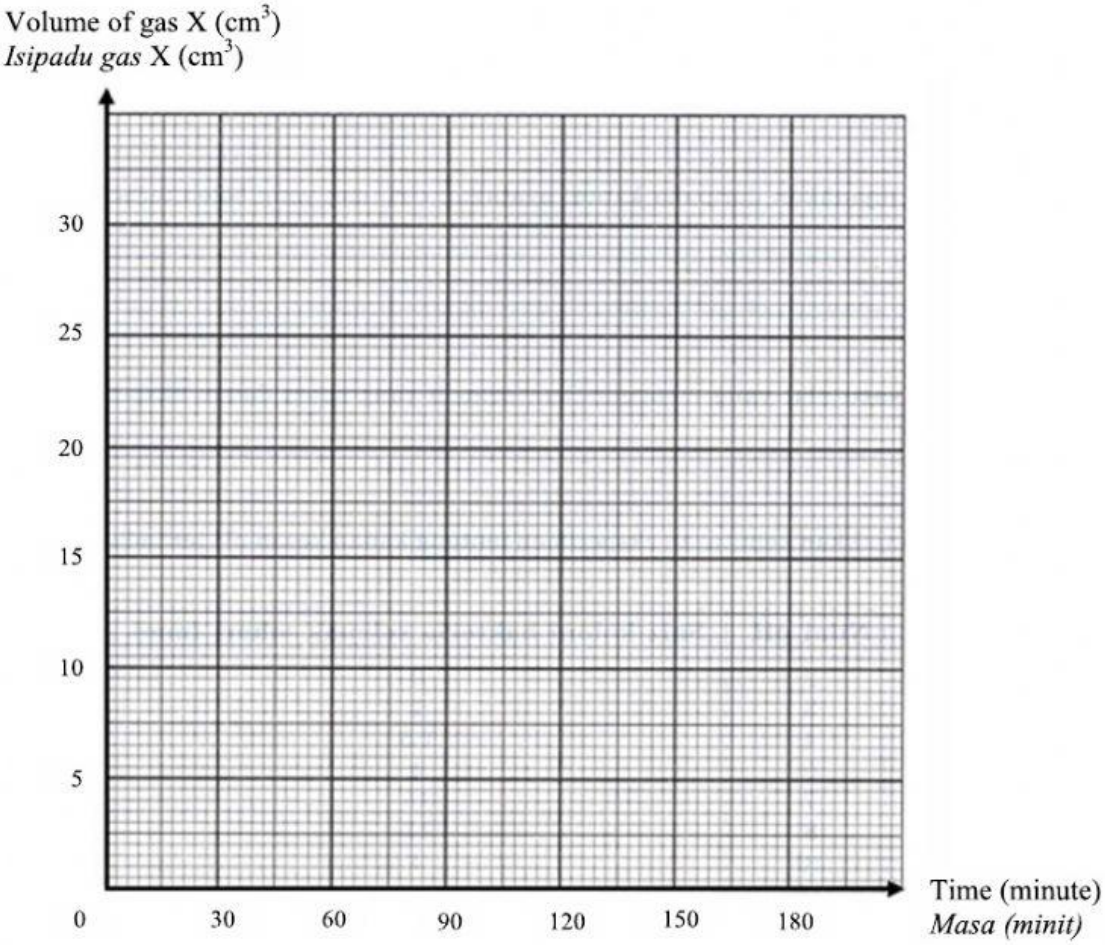
Diagram 1
Rajah 1

Result of the experiment is recorded as in Table 1.
Keputusan eksperimen direkod seperti dalam Jadual 1.

Time (minute) ***Masa (minit)***	**Volume of gas X (cm^3)** ***Isipadu gas* X (cm^3)**
0	0
30	8
60	16
90	24
120	26
150	27
180	.....

Table 1
Jadual 1

(a) Based on Table 1, draw a graph of volume of gas X against time.
Berdasarkan Jadual 1, *lukiskan graf isipadu gas* X *melawan masa.*



[2 *marks*]
[2 *markah*]

(b) Based on the graph in **1**(a), state the relationship between volume of gas X with time until 120 minutes.
Berdasarkan graf di **1**(a), *nyatakan hubungan di antara isipadu gas* X *dengan masa sehingga minit ke*-120.

.....

.....

[1 *mark*]
[1 *markah*]

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(c) Predict the volume of gas X produced in the 180th minute.
Ramalkan isipadu gas X *yang dihasilkan pada minit ke*-180.

.....

[1 *mark*]
[1 *markah*]

(d) Name gas X. Mark (√) your answer in the box provided.
Namakan gas X. *Tandakan* (√) *jawapan anda dalam kotak yang disediakan.*

Oxygen *Oksigen*	Hydrogen *Hidrogen*	Carbon dioxide *Karbon dioksida*

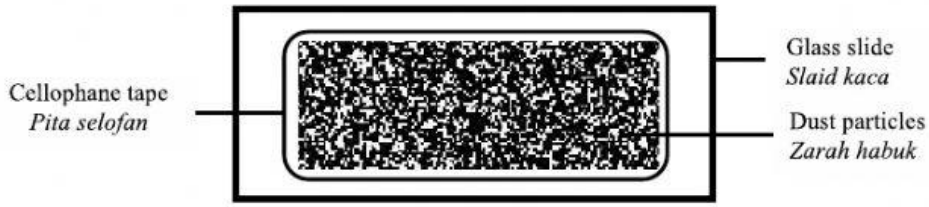
[1 *mark*]
[1 *markah*]

Total A1

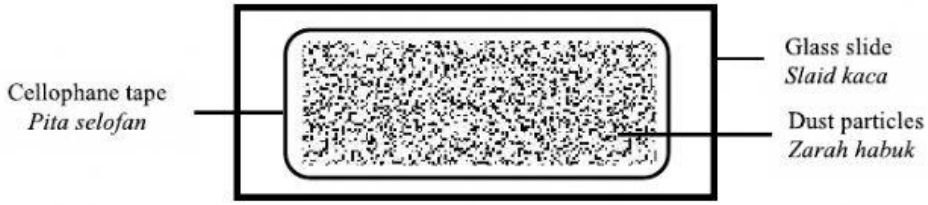
5

2 An experiment is carried out by students in class 5 Berlian to investigate the level of air pollution in three areas. Three glass slides are placed in area R, S and T respectively from 10.00 a.m. to 2.00 p.m.
Diagram 2 shows the result of this experiment.
Satu eksperimen dijalankan oleh murid-murid dari kelas 5 Berlian untuk mengkaji tahap pencemaran udara di tiga kawasan. Tiga slaid kaca diletakkan di kawasan R, S *dan* T *dari jam* 10.00 *pagi hingga jam* 2.00 *petang.*
Rajah 2 *menunjukkan keputusan eksperimen ini.*

Area R
Kawasan R



Area S
Kawasan S



Area T
Kawasan T

Diagram 2
Rajah 2

(a) Based on Diagram 2, state the hypothesis of this experiment.
Berdasarkan Rajah 2, *nyatakan hipotesis bagi eksperimen ini.*

.....

[1 *mark*]
[1 *markah*]

(b) State the constant variable in the experiment.
Nyatakan pemboleh ubah dimalarkan dalam eksperimen ini.

.....

[1 *mark*]
[1 *markah*]

(c) (i) Which area is unhealthy for students for an outdoor classroom activities?
Kawasan manakah yang tidak sihat untuk menjalankan aktiviti-aktiviti luar bilik darjah bagi murid-murid?

.....

[1 *mark*]
[1 *markah*]

(ii) State **one** reason for your answer in **2**(c)(i).
Nyatakan **satu** *alasan yang dinyatakan di* **2**(c)(i).

.....

[1 *mark*]
[1 *markah*]

(d) In your opinion, what will happen when the glass slide in area R is left until 6.00 p.m.?
Pada pendapat anda, apakah yang akan berlaku apabila slaid kaca di kawasan R *dibiarkan sehingga jam* 6.00 *petang?*

.....

[1 *mark*]
[1 *markah*]

Total A2

5

3 Diagram 3 shows an experiment to study the relationship between upthrust and the weight of water displaced.
Rajah 3 menunjukkan eksperimen untuk mengkaji hubungan antara tujah ke atas dengan berat air disesarkan.

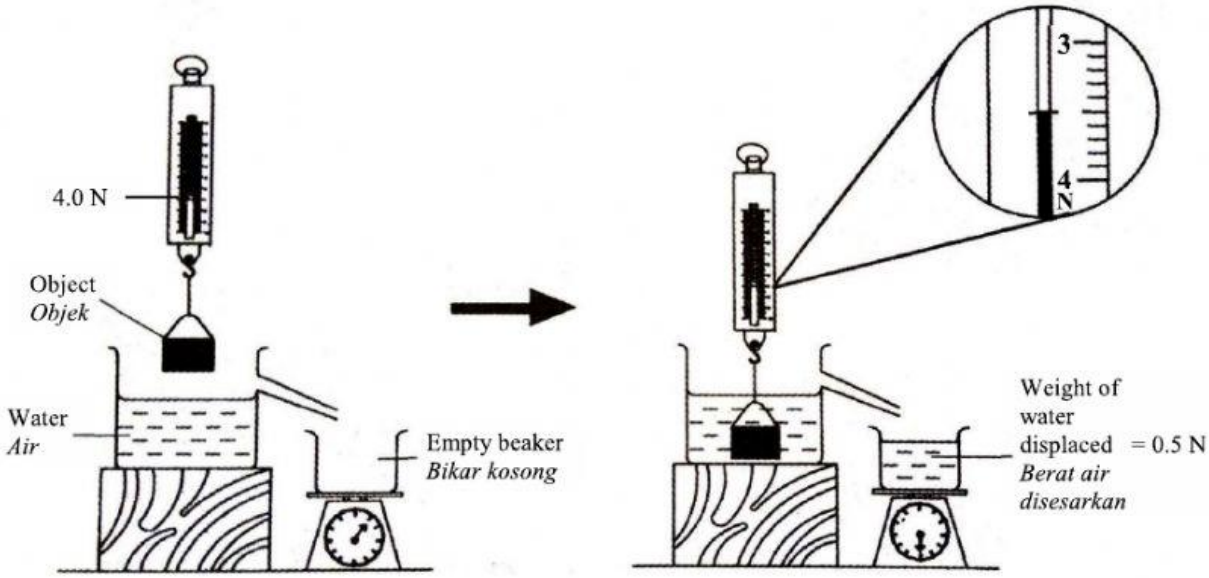


Diagram 3
Rajah 3

(a) ~~Based~~ on observation in Diagram 3, complete Table 2.
Berdasarkan pemerhatian dalam Rajah 3, lengkapkan Jadual 2.

Position of object ***Kedudukan objek***	**Weight of object (N)** ***Berat objek* (N)**
Di udara	4.0
Di dalam air	.....

Table 2
Jadual 2

[1 *mark*]
[1 *markah*]

(b) Based on your answer in **3**(a), compare the weight of object in the air and in the water.
Berdasarkan jawapan anda di **3**(a), *bandingkan berat objek di udara dan di dalam air.*

.....

.....

[1 *mark*]
[1 *markah*]

(c) State **one** inference for this experiment.
Nyatakan **satu** *inferens bagi eksperimen ini.*

.....

.....

[1 *mark*]
[1 *markah*]

(d) State **one** responding variable in this experiment.
Nyatakan **satu** *pemboleh ubah bergerak balas dalam eksperimen ini.*

.....

[1 *mark*]
[1 *markah*]

(e) The upthrust acts on an object when it is immersed in water.
State the operational definition for upthrust.
Tujah ke atas bertindak ke atas suatu objek apabila ia ditenggelamkan di dalam air.
Nyatakan definisi secara operasi bagi tujah ke atas.

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.....

[1 *mark*]
[1 *markah*]

Total A3

5

4 Diagram 4.1 and Diagram 4.2 show an experiment to study the changes state of matter of ice cubes.
Rajah 4.1 *dan Rajah* 4.2 *menunjukkan eksperimen untuk mengkaji perubahan keadaan jirim kiub ais.*

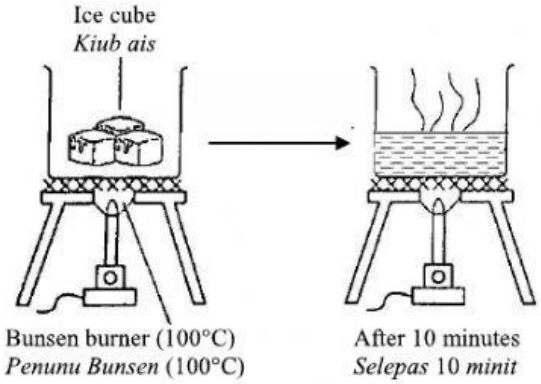

Diagram 4.1
Rajah 4.1

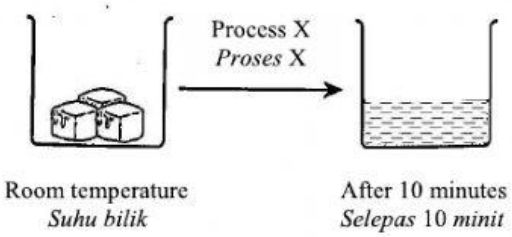

Diagram 4.2
Rajah 4.2

(a) State the manipulated variable in this experiment.
Nyatakan pemboleh ubah yang dimanipulasikan bagi eksperimen ini.

.....

[1 *mark*]
[1 *markah*]

(b) Based on Diagram 4.1 and Diagram 4.2, what is the difference between the states of matter of ice cubes after 10 minutes?
Berdasarkan Rajah 4.1 *dan Rajah* 4.2, *apakah perbezaan keadaan jirim bagi kiub ais selepas* 10 *minit?*

.....

.....

[2 *marks*]
[2 *markah*]

(c) (i) State the process X in Diagram 4.2.
Nyatakan proses X *dalam Rajah* 4.2.

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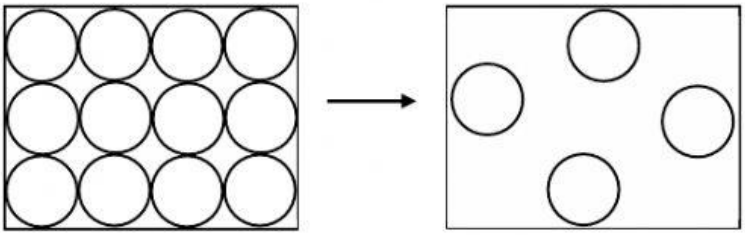
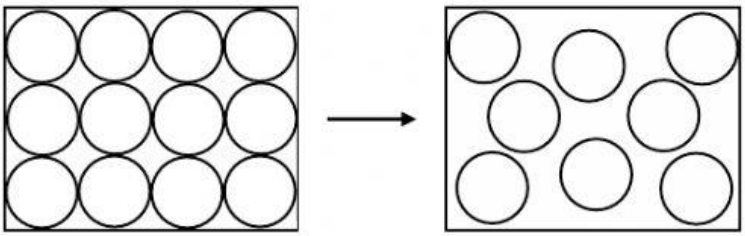
(ii) Mark (√) in the boxes provided which shows the change of arrangement of particles during process X.
Tandakan (√) *dalam kotak yang disediakan bagi menunjukkan perubahan susunan zarah-zarah semasa proses* X.

[2 *marks*]
[2 *markah*]

Total A4

5