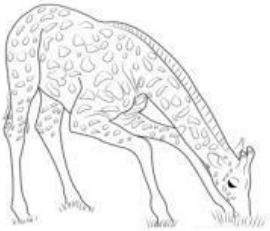
MODUL i-READY SAINS SPM

T4 BAB 6 SOKONGAN PERGERAKAN DAN PERTUMBUHAN

1. Rajah 7 menunjukkan seekor haiwan.
   Diagram 7 shows an animal.



Rajah 7
Diagram 7

Apakah kelebihan kedudukan kaki haiwan tersebut?
What are the advantages of the animal's foot position?

A Menyokong berat badan
Support body weight

B Mengurangkan berat badan
Reduce body weight

C Menambahkan lagi pusat graviti
Added the giraffe's center of gravity

D Meningkatkan luas tapak sistem sokongan
Increasing the area of the support system

2. Rajah 8 menunjukkan satu pergerakan anggota manusia.
   Diagram 8 shows a movement of human limbs.

Rajah 8
Diagram 8

Antara yang berikut, apakah M?
Which of the following is M?

A Rawan
Cartilage

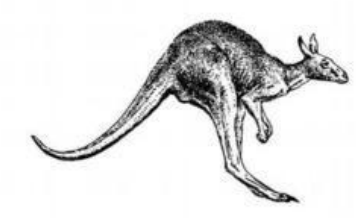
B Ligamen
Ligament

C Otot biseps
Biseps

D Otot Triseps
Triseps

LIVEWORKSHEETS

3. Rajah 6 menunjukkan seekor kanggaru.
   Diagram 6 *shows a kangaroo.*



Rajah / Diagram 6

Apakah sistem sokongan yang terdapat pada kanggaru bagi mengelakkannya daripada tumbang ketika tidak bergerak?
What support system does a kangaroo have to prevent it from falling when not moving?

A Mempunyai empat kaki
Has four legs

B Merendahkan kedudukan badannya
Lowering his body position

C Memiliki poket di bahagian depan
Has a pocket on the front

D Menggunakan ekornya sebagai tongkat
Using his tail as a stick

4. Rajah 5 menunjukkan pergerakan otot untuk membengkokkan lengan.
   Diagram 5 *shows the movement of muscles to bend the arm.*

Rajah 5
Diagram 5

Antara yang berikut, pasangan otot biseps dan triseps yang manakah dipadankan dengan betul dalam Rajah 5?
Which of the following pairs of biceps and triceps is correctly paired in Diagram 5?

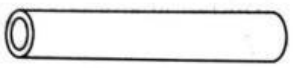
	Otot biseps ***Biceps***	**Otot triseps** ***Triceps***
A	Mengdcut *Contract*	Mengecut *Contract*
B	Mengecut *Contract*	Mengendur *Relax*
C	Mengendur *Relax*	Mengendur *Relax*
D	Mengendur *Relax*	Mengecut *Contract*

LIVEWORKSHEETS

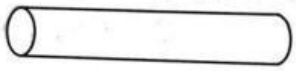
5. Antara padanan berikut, yang manakah **benar** tentang haiwan dan jenis rangkanya?
*Which of the pairs is **true** about the animal and its type of skeleton?*

	Haiwan ***Animal***	**Jenis rangka** ***Type of skeleton***
A	Cicak *Lizard*	Rangka luar *Exoskeleton*
B	Paus *Whale*	Rangka hidrostatik *Hydrostatic skeleton*
C	Rama-rama *Butterfly*	Rangka hidrostatik *Hydrostatic skeleton*
D	Ketam *Crab*	Rangka luar *Exoskeleton*

6. Rajah 6 menunjukkan tiub kaca J dan rod kaca K mewakili dua jenis tulang dalam dua jenis haiwan yang berbeza.
Diagram shows glass tube J and glass rod K representing two types of bones in two different animals.



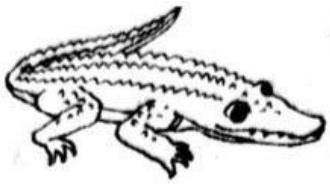
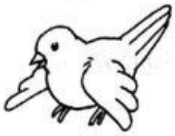
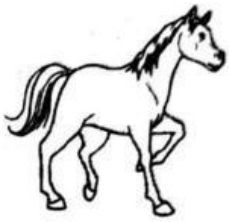
Tiub kaca J
Glass tube J



Rod kaca K
Glass rod K

Rajah 6
Diagram 6

Antara haiwan yang berikut, manakah mempunyai rangka yang diwakili oleh tiub kaca J?
Which of the following animals has a skeleton represented by glass tube J?

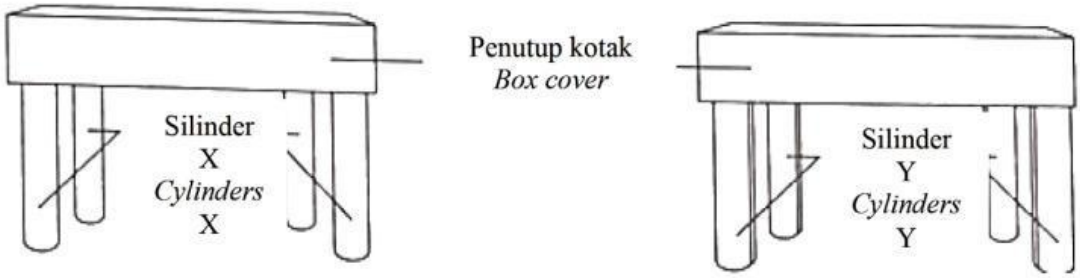
A		**C**	
B		**D**	

LIVEWORKSHEETS

MODUL i-READY SAINS SPM

BAHAGIAN A

1. Rajah 2.1 menunjukkan satu eksperimen untuk membandingkan kekuatan tulang yang padat dengan tulang yang berongga.
Diagram 2.1 shows an experiment to compare the strength of compact bone and hollow bone.



Rajah / Diagram 2.1

Jadual 2 menunjukkan keputusan eksperimen ini.
Table 2 shows the results of the experiment.

Jenis silinder *Type of cylinder*	Bilangan buku teks yang boleh disokong *Number of textbooks that can be supported*
X	15
Y	10

Jadual / Table 2

(a) Apakah yang diwakili oleh silinder X?
What are represented by cylinders X?

.....

[1 markah / *mark*]

(b) Nyatakan hipotesis bagi eksperimen ini.
State the hypothesis for this experiment.

.....

.....

[1 markah / *mark*]

(c) Nyatakan **satu** cara bagaimana anda boleh mengawal pemboleh ubah dimanipulasikan.
State **one** *way on how you can control the manipulated variable.*

.....

.....

[1 markah / *mark*]

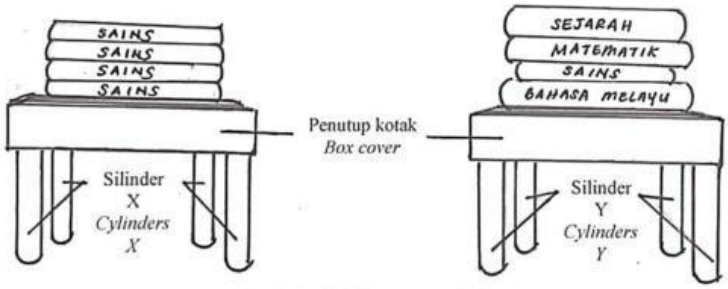
(d) Nyatakan **satu** ciri tulang berongga yang membolehkan burung terbang.
Name **one** *characteristic of hollow bones that allows birds to fly.*

.....

[1 markah / *mark*]

LIVEWORKSHEETS

(e) Rajah 2.2 menunjukkan eksperimen yang sama yang dijalankan oleh murid di kelas yang lain.
Keputusan yang diperolehi adalah berbeza daripada yang ditunjukkan dalam Jadual 2.
Diagram 2.2 shows the same experiment conducted by students in another class. The results obtained are different from those shown in Table 2.



Rajah / Diagram 2.2

Apakah kesilapan yang mungkin dilakukan oleh murid tersebut semasa menjalankan eksperimen?
What was the mistake probably made by the students while conducting the experiment?

.....

.....

[1 markah / *mark*]

2. Sekumpulan murid Tingkatan 5 Alfa menjalankan satu eksperimen bagi mengkaji pola pertumbuhan anak benih kacang hijau. Dua biji anak benih kacang hijau yang tumbuh dengan baik telah dipilih. Ketinggian anak benih diukur setiap hari selama 1 minggu.
A group of Form 5 Alfa students conducted an experiment to study the growth pattern of green bean seedlings. Two green bean seedlings that grew well were selected. Height of seedling is measured daily for 1 week.

Masa (hari) *Time (day)*	Ketinggian (mm) *Heights* (mm)		
	Anak benih 1 *Seedling* 1	Anak benih 2 *Seedling* 2	Purata *Average*
0	0	0	0
1	20	20	20
2	70	50	60
3	140	100	120
4	255	165	210
5	325	275	300
6	375	285	330
7	375	285	330

Jadual 1

LIVEWORKSHEETS

Jadual 1 menunjukkan keputusan eksperimen sehingga hari ke-7.
Table 1 shows the experimental results up to day 7.

(a) Berdasarkan Jadual 1,
Based on Table 1,

(i) nyatakan tujuan eksperimen.
state the aim of experiment.

.....

.....

[1 markah / *mark*]

(ii) nyatakan **satu** cara bagaimana anda mengawal pembolehubah dimalarkan.
state **one** *way on how you control the fixed variable.*

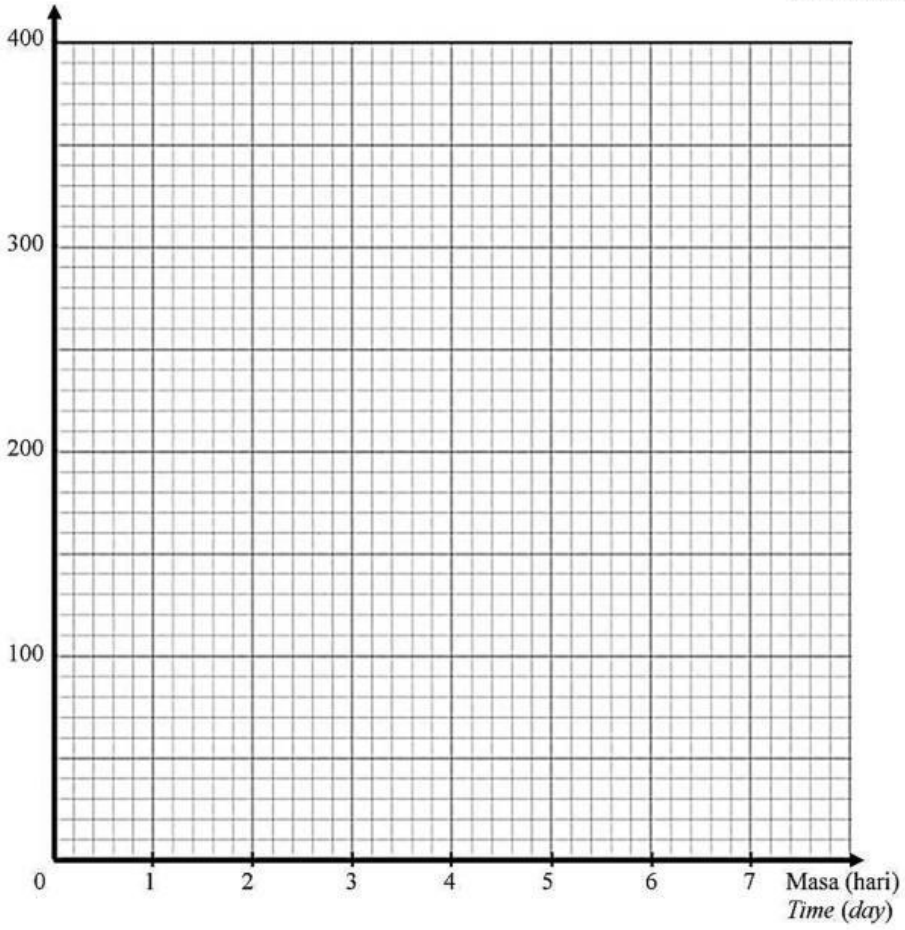
.....

.....

[1 markah / *mark*]

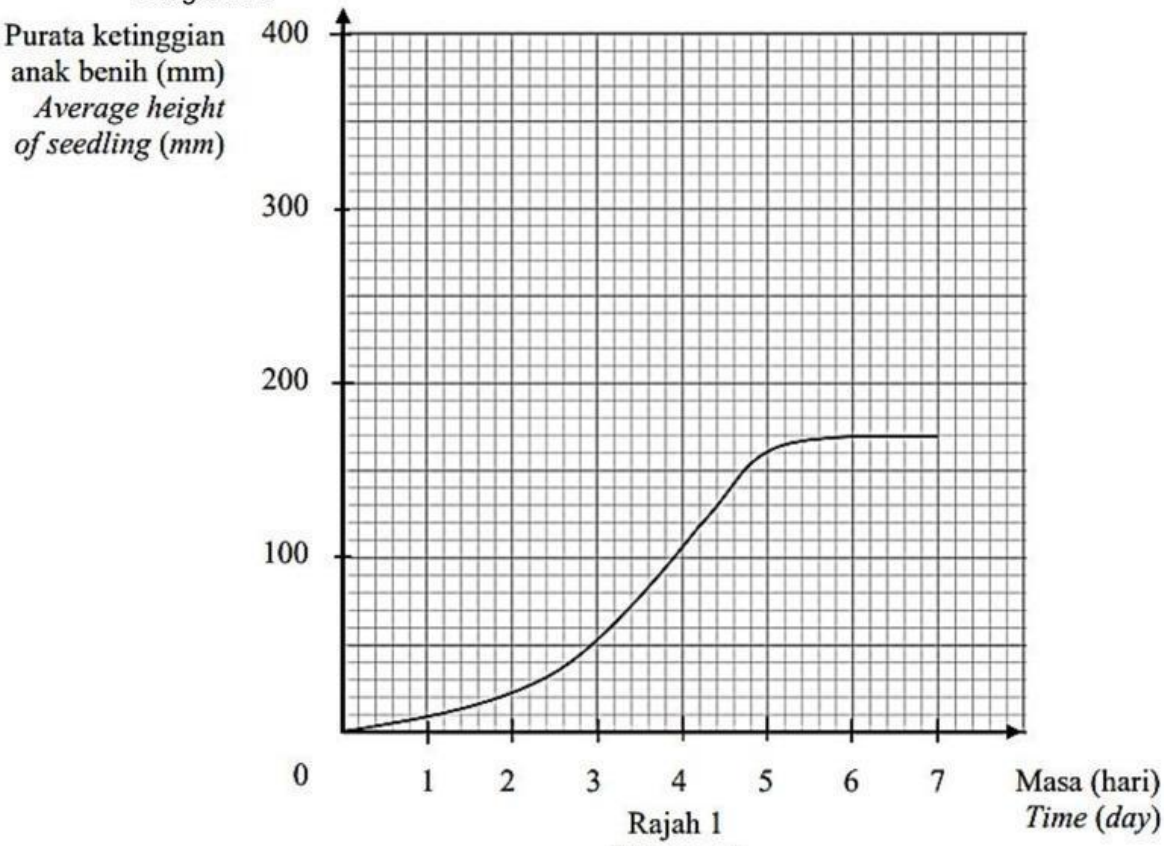
(b) Berdasarkan Jadual 1, lukis graf bagi purata ketinggian anak benih kacang hijau melawan masa, dalam kertas graf yang disediakan.
Based on Table 1*, draw a graph for the average height of green bean seedlings against time, in the graph paper provided.*

[2 *markah*/ 2 *marks*]



LIVEWORKSHEETS

(a) Sekumpulan murid lain menjalankan eksperimen yang sama, tetapi memperolehi data seperti dalam Rajah 1.
Another group of students did the same experiment, but obtain data as in Diagram 1.



Rajah 1
Diagram 1

Nyatakan **satu** kesilapan yang mungkin dilakukan oleh murid tersebut semasa menjalankan eksperimen ini.
State **one** *mistake that may be made by the students when doing this experiment.*

.....

.....

[1 markah / *mark*]

LIVEWORKSHEETS

MODUL i-READY SAINS SPM

BAHAGIAN B

Rajah 7.1 menunjukkan tiga haiwan yang berbeza.
Diagram 7.1 shows three different animals.

X **Y** **Z**

Rajah / Diagram 7.1

(a) Berdasarkan Rajah 7.1, nyatakan **satu** faktor yang mempengaruhi kestabilan objek.
Based on Diagram 7.1, state **one** *factor that affects the stability of an object.*

.....

[1 markah / *mark*]

(b) (i) Berdasarkan Rajah 7.1, nyatakan bagaimana haiwan **Y** meningkatkan kestabilannya?
Based on Diagram 7.1, explain how animal **Y** *increases its stability?*

.....

.....

[1 markah / *mark*]

(ii) Jelaskan bagaimana haiwan X mengekalkan kestabilan badannya ketika minum air.
Explain how animal X maintains its body's stability when drinking water.

.....

.....

[1 markah / *mark*]

(c) Berdasarkan Rajah 7.1, banding beza antara haiwan **X** dan **Z**.
Based on Diagram 7.1, compare and contrast between animal **X** *and* **Z**,

.....

.....

.....

[2 markah / *marks*]

LIVEWORKSHEETS

(d) Seorang atlet angkat berat membengkokkan kakinya semasa mengangkat beban yang kuat.
A weightlifter athlete bent his feet when lifting a heavy load.

Rajah 7.2 / *Diagram* 7.2

Wajarkan tindakan yang diambil oleh atlet angkat berat tersebut untuk membantunya lebih stabil.
Justify the actions taken by that weightlifter athlete to help him become more stable.

.....

.....

[1 markah / *mark*]

LIVEWORKSHEETS