

**SENARAI SEMAK CALON
CANDIDATES' CHECKLIST**

ARAHAN

Anda dikehendaki menyemak radas dan bahan, membaca soalan dan merancang eksperimen dalam tempoh **lima minit** pertama.

Tandakan (/) pada ruangan kotak yang disediakan sekiranya radas dan bahan yang disenaraikan dalam jadual dibekalkan.

INSTRUCTION

*You are required to check the list of apparatus and materials, read the questions and plan the experiment in the first **five minutes**.*

Tick (/) in the space if the apparatus and materials listed in the table are supplied.

Bil. No.	Radas / Bahan Apparatus / Materials	Kuantiti Quantity	Ya (/) / Tidak (X) Yes (/) / No (X)
1.	Tray Aluminium 17ml : (Panjang 18cm x Lebar 14cm x Tinggi 5cm) <i>Aluminium Tray 17ml : (Length 18cm x Width 14cm x Height 5cm)</i>	3	
2.	Beg plastik lutsinar bersaiz kecil <i>Small size transparent plastic bag</i>	2	
3.	Besen <i>Basin</i>	1	
4.	Kertas label <i>Label sticker</i>	3	
5.	Pembaris 15cm <i>Ruler 15cm</i>	1	
6.	Penyodok kebun plastik / sudu plastik <i>Plastic garden shovel / plastic spoon</i>	1	
7.	Benih jagung <i>Maize seed</i>	20	
8.	Benih padi <i>Paddy seed</i>	20	
9.	Tanah kebun <i>Garden soil</i>	900g	
10.	Air <i>Water</i>	1 botol <i>1 bottle</i>	

1. Anda dikehendaki untuk menjalankan eksperimen untuk mengkaji hubungan di antara persaingan intraspesies dan persaingan interspesies antara organisma.

You have to carry out an experiment to investigate the relationship between interspecific competition and intraspecific competition between organisms.

- a) Rancang eksperimen ini dengan menggunakan radas dan bahan yang diberikan. Prosedur anda hendaklah mengandungi:

Plan your experiment using the apparatus and material provided. Your procedure should include:

- Cara mengendalikan pemboleh ubah
Method to handle variables
- Langkah berjaga-jaga
Precautionary steps

[5 markah]
[5 marks]

- b) Berikut adalah rajah bagi 10 anak benih yang dicabut dari tiga tray aluminium yang berbeza. Rujuk lampiran yang disediakan di muka surat 7 hingga 10.

The following diagrams refer to 10 seedlings that are picked from three different aluminium trays. Refer to the attachment given in page 7 to 10.

- i) Dengan menggunakan pembaris, ukur dan rekod ketinggian setiap anak benih ke dalam Jadual 1.

By using the ruler, measure and record the height of every seedling and their average into Table 1.

Jenis biji benih / tray aluminium <i>Type of seed / aluminium tray</i>	Ketinggian anak benih (cm) <i>Height of seedlings (cm)</i>										
	1	2	3	4	5	6	7	8	9	10	Purata <i>Average</i>
Jagung / Tray A <i>Maize / Tray A</i>											
Padi / Tray B <i>Paddy / Tray B</i>											
Jagung / Tray C <i>Maize / Tray C</i>											
Padi / Tray C <i>Paddy / Tray C</i>											

Jadual 1

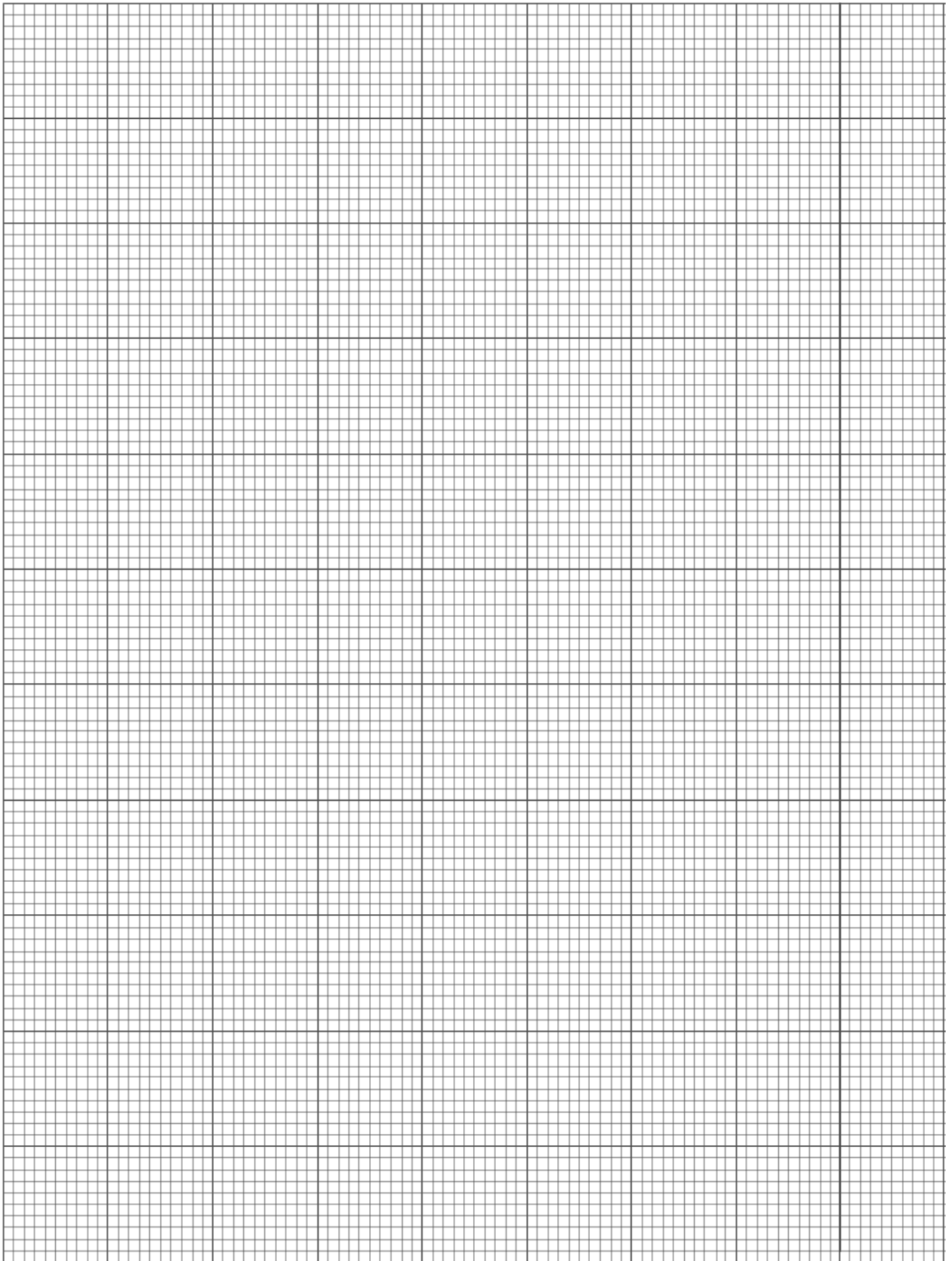
Table 1

[3 markah]

[3 marks]

- ii) Berdasarkan Jadual 1, lukis carta bar purata ketinggian anak benih melawan jenis biji benih.

Based on Table 1, draw a bar chart of the average height of the seedlings against type of seed.



[3 markah]

[3 marks]

- c) Namakan jenis persaingan yang berlaku di dalam Tray A dan Tray C.
Name the type of competition that has taken place in Tray A and Tray C.

Tray A / Tray A :

Tray C / Tray C :

[2 markah]

[2 marks]

- d) Kadar pertumbuhan anak benih jagung adalah lebih tinggi berbanding anak benih padi.
Terangkan.

The growth rate of maize seedlings is higher than paddy seedlings.

Explain.

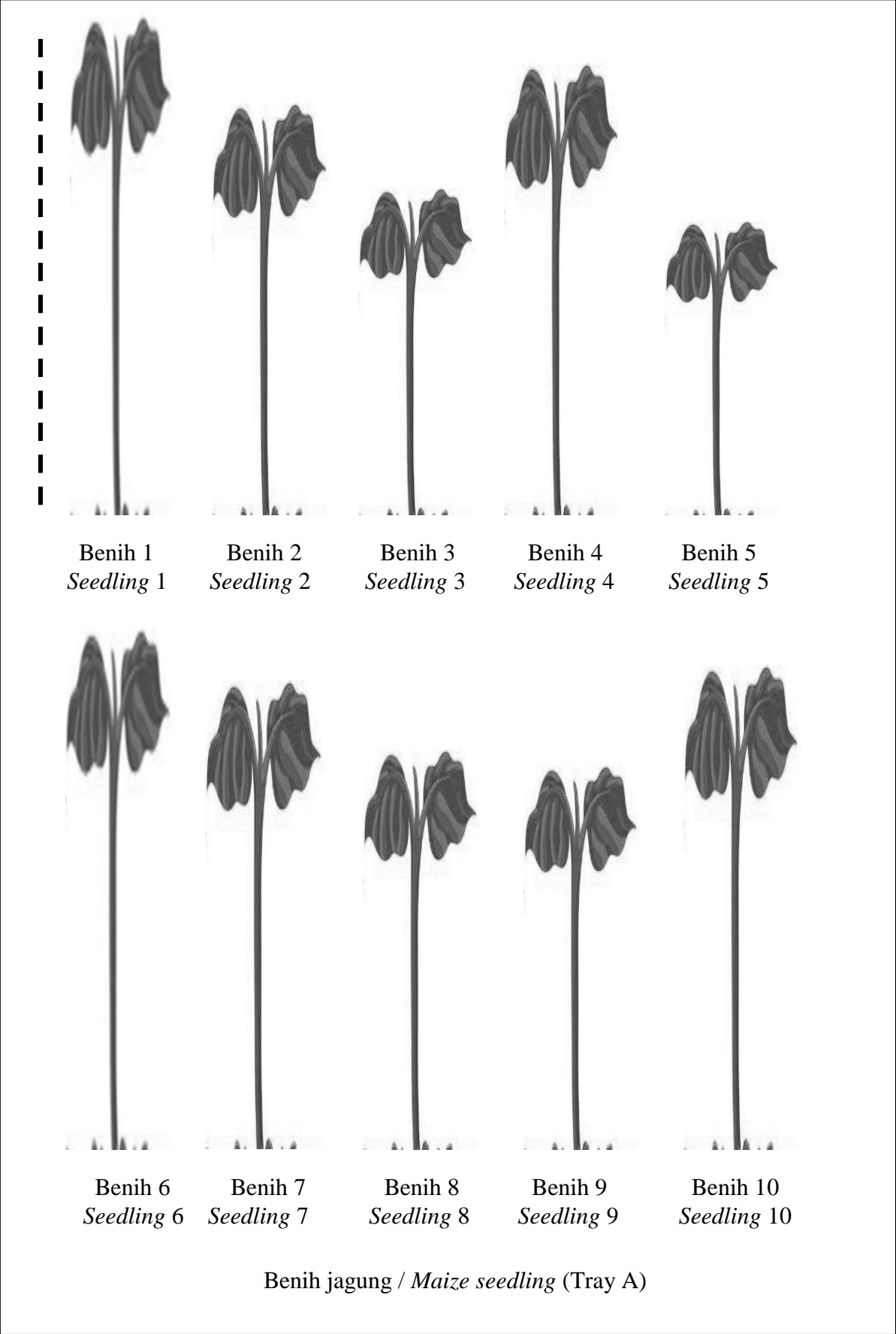
.....

.....

.....

[2 markah]

[2 marks]





Benih 1
Seedling 1



Benih 2
Seedling 2



Benih 3
Seedling 3



Benih 4
Seedling 4



Benih 5
Seedling 5



Benih 6
Seedling 6



Benih 7
Seedling 7



Benih 8
Seedling 8

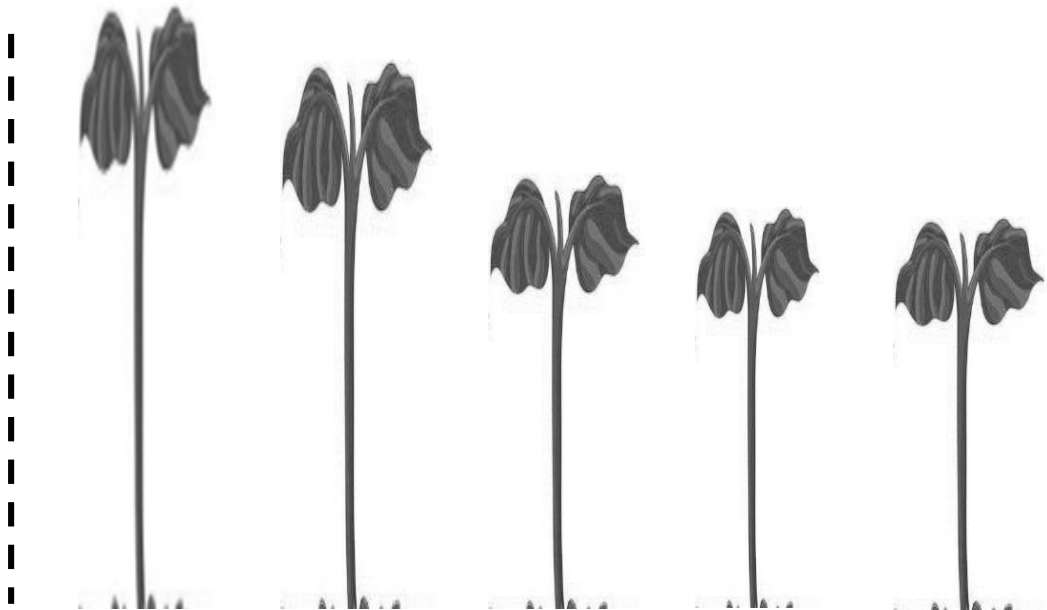


Benih 9
Seedling 9



Benih 10
Seedling 10

Benih padi / *Paddy seedling* (Tray B)



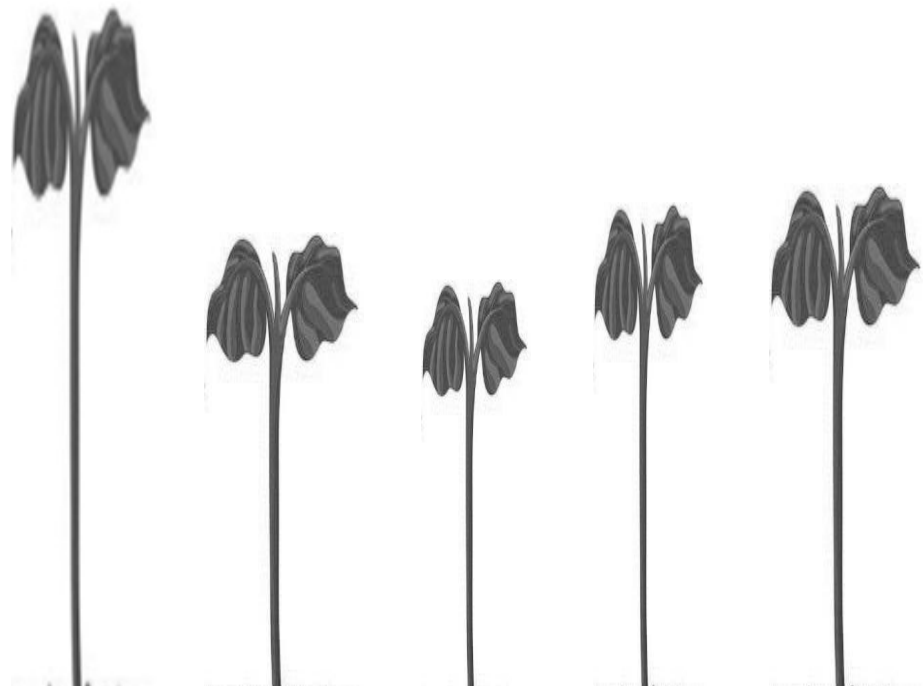
Benih 1
Seedling 1

Benih 2
Seedling 2

Benih 3
Seedling 3

Benih 4
Seedling 4

Benih 5
Seedling 5



Benih 6
Seedling 6

Benih 7
Seedling 7

Benih 8
Seedling 8

Benih 9
Seedling 9

Benih 10
Seedling 10

Benih jagung / *Maize seedling (Tray C)*



Benih 1
Seedling 1



Benih 2
Seedling 2



Benih 3
Seedling 3



Benih 4
Seedling 4



Benih 5
Seedling 5



Benih 6
Seedling 6



Benih 7
Seedling 7



Benih 8
Seedling 8



Benih 9
Seedling 9



Benih 10
Seedling 10

Benih padi / *Paddy seedling* (Tray C)

KERTAS SOALAN TAMAT
END OF QUESTIONS