

Nama:  
Kelas:  
Angka Giliran:


**CONFIDENTIAL**

4551/3

Biologi

Kertas 3

September

2014

**MAKTAB RENDAH SAINS MARA**

1½ jam

**PEPERIKSAAN SIJIL PENDIDIKAN MRSM 2014****BIOLOGI**

Kertas 3

Satu jam tiga puluh minit

**JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU**

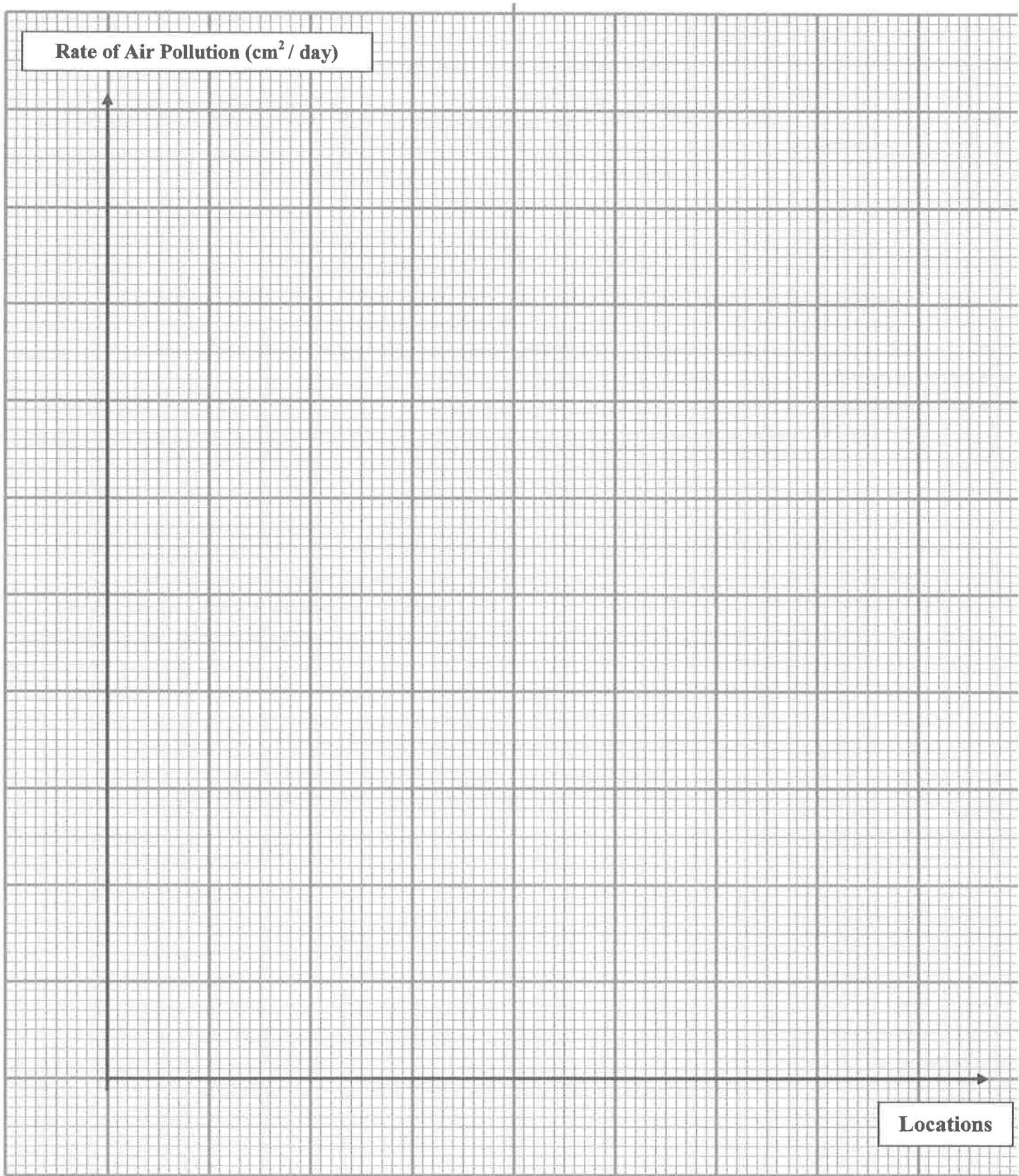
1. Tulis nama dan angka giliran anda pada ruangan yang disediakan.
2. Kertas soalan ini adalah dalam dwibahasa.
3. Soalan dalam bahasa Inggeris mendahului soalan yang sepadan dalam bahasa Melayu.
4. Calon dibenarkan menjawab keseluruhan atau sebahagian soalan sama ada dalam bahasa Inggeris atau bahasa Melayu.
5. Calon dikehendaki membaca maklumat di halaman belakang kertas soalan ini.

Untuk Kegunaan Pemeriksa		
Kod Pemeriksa :		
Soalan	Markah Penuh	Markah Diperoleh
1	33	
2	17	
<b>Jumlah</b>	<b>50</b>	

Kertas soalan ini mengandungi 17 halaman bercetak dan 3 halaman tidak bercetak

[Lihat sebelah  
**SULIT**

Bar chart of rate of pollution against locations  
Carta bar kadar pencemaran udara melawan lokasi



[Lihat Halaman Sebelah]

- (h) The experiment was repeated at a quarry. Predict the rate of air pollution. Explain your answer.

*Eksperimen diulang menggunakan kawasan kuari. Ramalkan kadar pencemaran udara. Terangkan jawapan anda.*

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1(h)

[3 marks]  
[3 markah]

3

- (i) Table 3 contains various types of pollutants.

Jadual 3 mengandungi pelbagai jenis bahan pencemar.

Soot, Carbon Monoxide, Detergents, Hot Water,  
Sulphur Dioxide, Fertilizers, Nitrates

*Jelaga, Karbon Monoksida, Detergen, Air Panas,  
Sulfur Dioksida, Baja, Nitrat*

Table 3  
Jadual 3

Complete Table 4 by matching each type of pollutants with the appropriate type of pollution.

*Lengkapkan Jadual 4 dengan memadankan setiap bahan pencemar dengan jenis pencemaran yang bersesuaian.*

Air Pollution <i>Pencemaran Udara</i>	Water Pollution <i>Pencemaran Air</i>	Thermal Pollution <i>Pencemaran Terma</i>

Table 4  
Jadual 4

[3 marks]  
[3 markah]

1(i)

3

[Lihat Halaman Sebelah]

2. Vitamin C is an antioxidant which is important in cosmetic and health supplement industry especially in their ability to enhance skin. This statement is proven by mass advertisement made by the cosmetic companies on their products showing high percentage of Vitamin C as shown in Diagram 2.1 and Diagram 2.2.

*Vitamin C adalah sejenis antioksidan yang penting dalam industri kosmetik dan produk kesihatan tambahan terutamanya bagi tujuan penjagaan kulit. Kenyataan ini dibuktikan melalui kecenderungan pengiklanan syarikat kosmetik memaparkan peratusan Vitamin C yang tinggi dalam produk-produk mereka seperti Rajah 2.1 dan Rajah 2.2.*

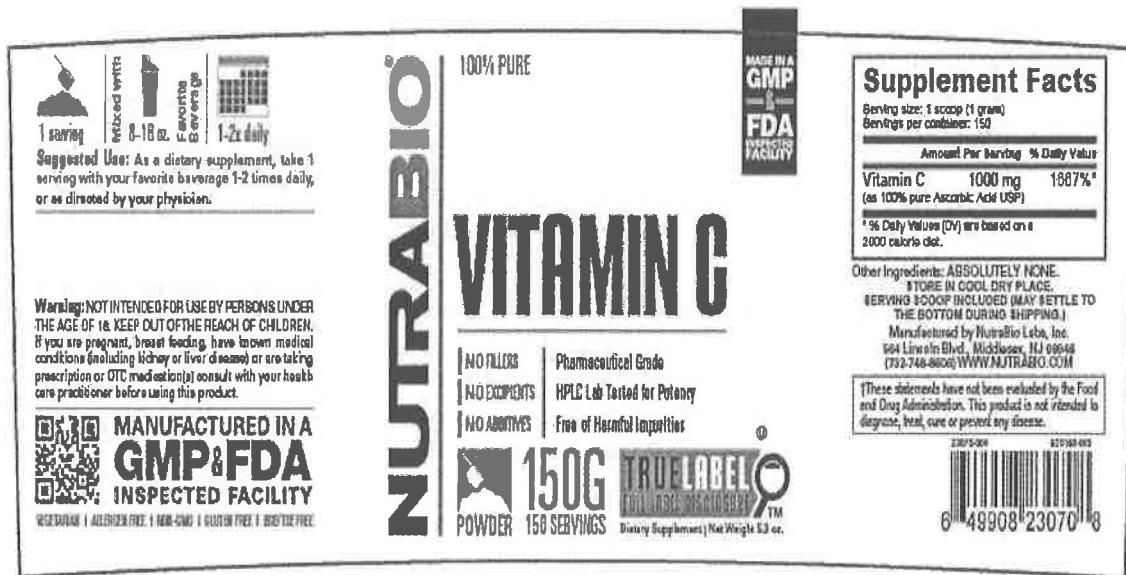


Diagram 2.1  
Rajah 2.1

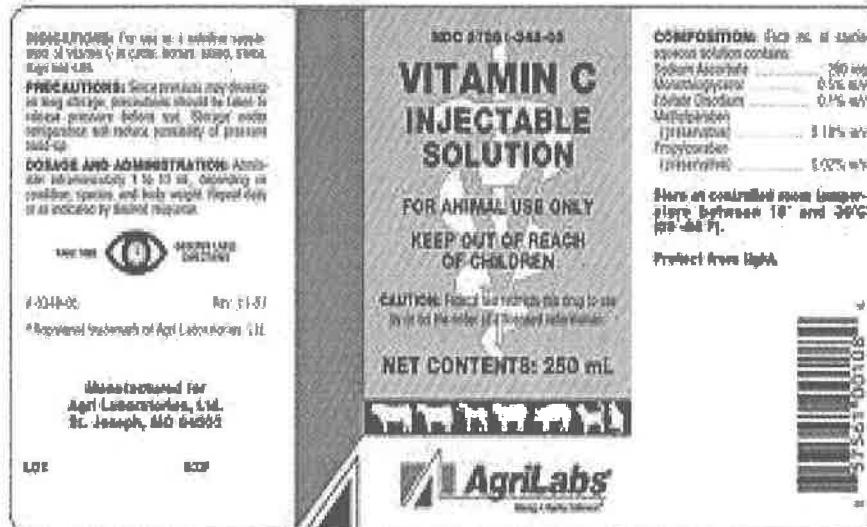


Diagram 2.2  
Rajah 2.2

A Research Officer in a Research and Development Department (R&D) in a company is required to build a new health supplement product which has a high amount of Vitamin C from selected local fruits in Diagram 2.3

*Seorang Pegawai Penyelidik di Jabatan Penyelidikan dan Pembangunan (R&D) dalam sebuah syarikat ditugaskan untuk menghasilkan satu produk kesihatan tambahan yang baru dimana produk tersebut mengandungi jumlah kandungan Vitamin C yang tinggi menggunakan buah-buahan tempatan seperti Rajah 2.3*

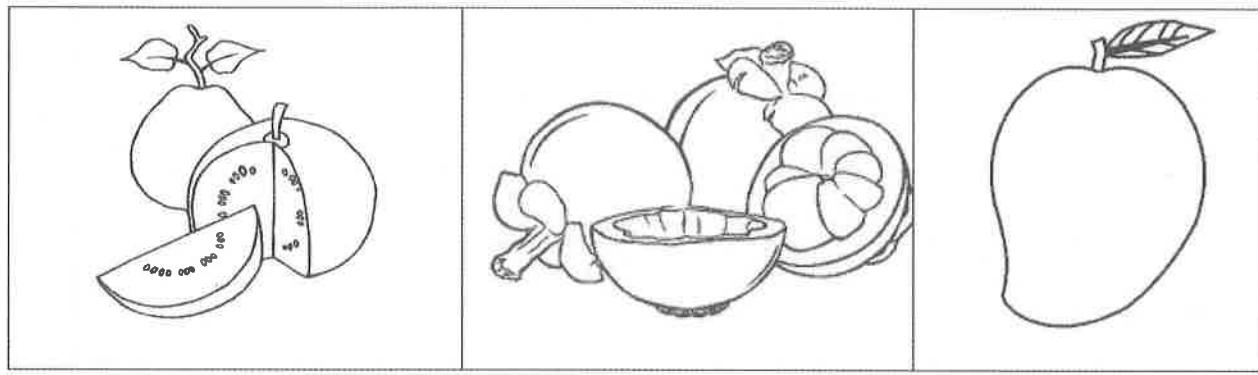


Diagram 2.3 / Rajah 2.3

Design a laboratory experiment to determine which type of fruits shown above has the highest percentage of vitamin C.

*Reka bentuk satu eksperimen makmal untuk menentukan jenis buah yang manakah mempunyai peratusan vitamin C yang paling tinggi.*

The planning of your experiment must include the following aspects:

*Perancangan eksperimen anda hendaklah meliputi aspek-aspek berikut :*

- Problem statement  
*Pernyataan masalah*
- Hypothesis  
*Hipotesis*
- Variables  
*Pembolehubah*
- List of apparatus and materials  
*Senarai alat radas dan bahan*
- Experimental procedure  
*Prosedur eksperimen*
- Presentation of data  
*Persembahan data*

[17 marks]  
[17 markah]

**END OF QUESTION PAPER**  
**KERTAS SOALAN TAMAT**

**[Lihat Halaman Sebelah]**

**SPACE FOR ANSWERS**

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**[Lihat Halaman Sebelah]**





