

**ANALYSIS OF PMR QUESTIONS**

SUBCHAPTER	2005	2006	2007	2008	2009	2010
2.1	1	-	-	-	-	-
2.2	1	1	1	1	1	-
2.3	1	1	-	-	1	1
2.4	-	-	-	-	-	-
2.5	-	-	-	-	-	-
2.6	-	-	-	-	-	-

**Objective Questions**

**Instructions:** Each question is followed by four options, A, B, C and D. Choose the correct answer.

**Arahan:** Setiap soalan diikuti oleh empat jawapan pilihan, A, B, C dan D. Pilih jawapan yang betul.

**CLASSES OF FOOD**

1 Diagram 1 shows a classification of food.  
Rajah 1 menunjukkan pengelasan makanan.

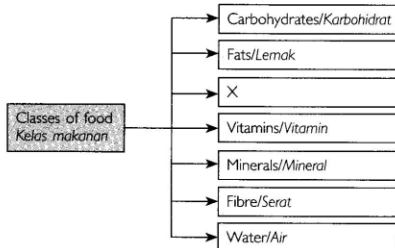


DIAGRAM 1/RAJAH 1

What is the main function of X?

Apakah fungsi utama X?

- A Supply energy  
Membekalkan tenaga
- B Building new cells  
Membina sel-sel baru
- C Maintaining good health  
Mengekalkan kesihatan yang baik
- D Prevent constipation  
Mencegah sembelit

2 Diagram 2 shows a person suffering from goitre.  
Rajah 2 menunjukkan seorang yang menderita penyakit beguk.



DIAGRAM 2/RAJAH 2

The person suffers from goitre because his diet lacks...  
Orang itu menghidap penyakit beguk kerana gizinya kekurangan...

- A iron.  
besi.
- C calcium.  
kalsium.
- B iodine.  
iodin.
- D vitamin D.  
vitamin D.

**SCIENCE FACTS**

A large stomach is the characteristic of kwashiorkor. Lack of proteins causes fluids in the blood to escape into the stomach, causing it to inflate.  
Perut yang besar adalah ciri-ciri bagi penyakit kwashiorkor. Kekurangan protein menyebabkan cecair dalam darah masuk ke dalam perut, menyebabkan perut mengembung.

3 Table 1 shows the functions of vitamins J, K, L and M.

Jadual 1 menunjukkan fungsi vitamin J, K, L dan M.

Vitamins Vitamin	Functions Fungsi
J	For night vision Untuk penglihatan pada waktu malam
K	For clotting of blood Untuk pembekuan darah
L	For strong bones and teeth Untuk tulang dan gigi yang kuat
M	For healthy skin Untuk kulit yang sihat

TABLE 1/JADUAL 1

Which of the following are J, K, L and M?  
Antara yang berikut, apakah J, K, L dan M?

	J	K	L	M
A	Vitamin C	Vitamin A	Vitamin E	Vitamin K
B	Vitamin K	Vitamin A	Vitamin B	Vitamin C
C	Vitamin D	Vitamin K	Vitamin A	Vitamin B
D	Vitamin A	Vitamin K	Vitamin D	Vitamin C

TSTS Question 1: Analysing  
Question 2: Attributing

Question 3: Grouping and classifying, Attributing

**SURF THE NET**

Visit [http://www.coolmeals.co.uk/food\\_facts/nutrients/vitamins/index.html](http://www.coolmeals.co.uk/food_facts/nutrients/vitamins/index.html) to learn about the classes of food.  
 Layari [http://www.coolmeals.co.uk/food\\_facts/nutrients/vitamins/index.html](http://www.coolmeals.co.uk/food_facts/nutrients/vitamins/index.html) untuk mempelajari tentang kelas-kelas makanan.

4 Diagram 3 shows a food test carried out on food sample X. At the end of the test, a red precipitate is formed.  
 Rajah 3 menunjukkan satu ujian makanan yang dijalankan ke atas satu sampel makanan X. Pada akhir ujian, mendakan merah terbentuk.

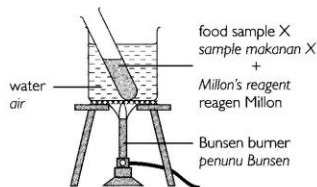


DIAGRAM 3/RAJAH 3

Which of the following foods contains the same class of food found in the tested food sample?  
 Antara makanan berikut, manakah yang mengandungi kelas makanan yang sama seperti yang terdapat dalam sampel makanan yang diuji?

A Jam  
 Jem

B Cabbage  
 Kobis

C Anchovies  
 Ikan bilis

D Margarine  
 Marjerin

5 Which class of food and example are not correctly matched?  
 Manakah kelas makanan dan contohnya tidak dipadankan dengan betul?

	Class of food Kelas makanan	Examples Contoh
A	Fats Lemak	Peanuts Kacang
B	Proteins Protein	Bean curd Tauhu
C	Fibre Serat	Potatoes Kentang
D	Carbohydrates Karbohidrat	Rice Nasi

6 Table 2 shows the results of food tests on three food samples.  
 Jadual 2 menunjukkan keputusan ujian makanan ke atas tiga sampel makanan.

Foods Makanan	Observations/Pemerhatian		
	Millon's test Ujian Millon	Benedict's test Ujian Benedict	Iodine test Ujian iodin
X	No change Tiada perubahan	No change Tiada perubahan	Blue-black Biru kehitaman
Y	A red precipitate Mendakan merah	A brick-red precipitate Mendakan merah bata	No change Tiada perubahan
Z	No change Tiada perubahan	A brick-red precipitate Mendakan merah bata	Blue-black Biru kehitaman

TABLE 2/JADUAL 2

Which of the following foods contain only starch and sugar?  
 Antara yang berikut, makanan manakah yang hanya mengandungi kanji dan gula?

A X  
 B Z  
 C X and Y  
 X dan Y  
 D Y and Z  
 Y dan Z

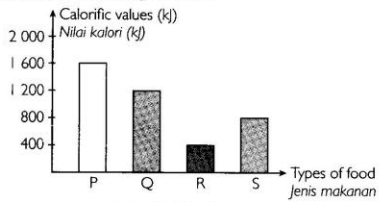
**THE IMPORTANCE OF A BALANCE DIET**

7 The calorific value of fish is 20 kJ/g. Calculate the calorific value of 100 g of fish.  
 Nilai kalori bagi ikan ialah 20 kJ/g. Hitung nilai kalori untuk 100 g ikan.

A 20 kJ  
 B 40 kJ  
 C 2 000 kJ  
 D 4 000 kJ

8 Diagram 4 shows the calorific values of four foods, P, Q, R and S.

Rajah 4 menunjukkan nilai kalori untuk empat makanan iaitu P, Q, R dan S.



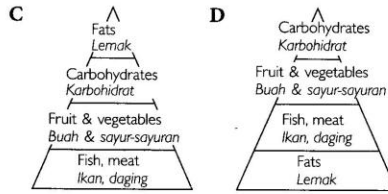
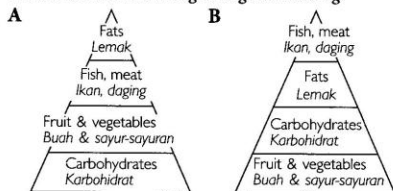
Which of the following are likely to be P, Q, R and S?

Antara yang berikut, manakah yang mungkin bagi P, Q, R dan S?

	P	Q	R	S
A	Bread Roti	Honey dew Tembikai susu	Nasi lemak Nasi lemak	Milk Susu
B	Honey dew Tembikai susu	Bread Roti	Milk Susu	Nasi lemak Nasi lemak
C	Milk Susu	Nasi lemak Nasi lemak	Bread Roti	Honey dew Tembikai susu
D	Nasi lemak Nasi lemak	Milk Susu	Honey dew Tembikai susu	Bread Roti

9 Which food pyramid is the best guide to plan a balanced diet?

Piramid makanan yang manakah adalah panduan terbaik untuk merancang satu gizi seimbang?



10 Table 3 shows the calorific values of some foods. Jadual 3 menunjukkan nilai kalori beberapa makanan.

Foods / Makanan	Quantity / Kuantiti	Calorific values/kJ / Nilai kalori/kJ
Chicken rice / Nasi ayam	1 plate / 1 pinggan	2 000
Cendol	1 bowl / 1 mangkuk	83
Watermelon / Tembikai	1 piece / 1 potong	105
Orange juice / Jus oren	1 glass / 1 gelas	202

TABLE 3/JADUAL 3

Azman's lunch consisted of the foods shown below.

Makanan tengah hari Azman terdiri daripada makanan yang ditunjukkan di bawah.

- Chicken rice / Nasi ayam 1 plate / 1 pinggan
- Cendol 1 bowl / 1 mangkuk
- Watermelon / Tembikai 2 pieces / 2 potong
- Orange juice / Jus oren 1 glass / 1 gelas

Based on Table 3, calculate the calorific value of Azman's lunch.

Berdasarkan Jadual 3, kira nilai kalori bagi makanan tengah hari Azman.

- A 2 390 kJ
- B 2 450 kJ
- C 2 495 kJ
- D 3 165 kJ

11 Which of the following foods are the best choice for good health?

Antara makanan yang berikut, manakah pilihan terbaik untuk kesihatan yang baik?

	Breakfast Sarapan pagi	Dinner Makan malam
A	2 slices of bread with butter 2 keping roti bermentega A cup of coffee Secawan kopi	Rice/Nasi Fried chicken Ayam goreng A glass of orange juice Segelas jus oren
B	Nasi lemak Nasi lemak A cup of milo Secawan milo	Burger/Burger A glass of carbonated drink Segelas air berkarbonat
C	Fried noodle Mi goreng A cup of coffee Secawan kopi	Rice/Nasi Meat/Daging A glass of orange juice Segelas jus oren
D	2 slices of bread with butter 2 keping roti bermentega A glass of milk Segelas susu	Rice/Nasi Steamed fish Ikan kukus Fruit salad Salad buah-buahan A glass of mineral water Segelas air mineral

23 THE HUMAN DIGESTIVE SYSTEM

12 Diagram 5 shows the human digestive system. Rajah 5 menunjukkan sistem pencernaan manusia.

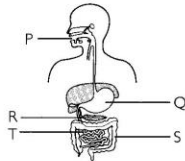


DIAGRAM 5/RAJAH 5

The digestion of bread occurs in the parts which are labelled...

Pencernaan roti berlaku dalam bahagian-bahagian yang dilabelkan...

- A P, Q and T  
P, Q dan T  
C Q, S and T  
Q, S dan T  
B P, R and T  
P, R dan T  
D Q, R and S  
Q, R dan S

13 Diagram 6 shows the organs in the human digestive system.

Rajah 6 menunjukkan organ-organ dalam sistem pencernaan manusia.

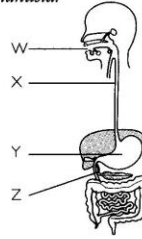


DIAGRAM 6/RAJAH 6

Which of the following are the function of W, X, Y and Z?

Antara yang berikut, manakah fungsi bagi W, X, Y dan Z?

	W	X	Y	Z
A	To digest fat Untuk mencernakan lemak	To digest starch Untuk mencernakan kanji	To perform peristalsis Untuk menjalankan peristalsis	To digest protein Untuk mencernakan protein
B	To digest protein Untuk mencernakan protein	To digest fat Untuk mencernakan lemak	To perform peristalsis Untuk menjalankan peristalsis	To digest starch Untuk mencernakan kanji
C	To digest starch Untuk mencernakan kanji	To perform peristalsis Untuk menjalankan peristalsis	To digest protein Untuk mencernakan protein	To digest fat Untuk mencernakan lemak
D	To digest starch Untuk mencernakan kanji	To perform peristalsis Untuk menjalankan peristalsis	To digest fat Untuk mencernakan lemak	To digest protein Untuk mencernakan protein

14 Table 4 shows the three types of enzymes found in the alimentary canal. They are involved in the digestion of food molecules.

Jadual 4 menunjukkan tiga jenis enzim yang terdapat di dalam saluran pencernaan. Ia terlibat dengan pencernaan molekul makanan.

Enzyme Enzim	Amylase Amilase	Lipase Lipase	Protease Protease
Food molecule Molekul makanan	Starch Kanji	Fats Lemak	Proteins Protein
Product Hasil	X	Y	Z

TABLE 4/JADUAL 4

What are X, Y and Z? / Apakah X, Y dan Z?

	X	Y	Z
A	Fatty acids and glycerol Asid lemak dan gliserol	Amino acids Asid amino	Glucose Glukosa
B	Glucose Glukosa	Fatty acids and glycerol Asid lemak dan gliserol	Amino acids Asid amino
C	Amino acids Asid amino	Glucose Glukosa	Fatty acids and glycerol Asid lemak dan gliserol
D	Fatty acids and glycerol Asid lemak dan gliserol	Glucose Glukosa	Amino acids Asid amino

14 ABSORPTION OF DIGESTED FOOD

15 Diagram 7 shows the human digestive system. Rajah 7 menunjukkan sistem pencernaan manusia.

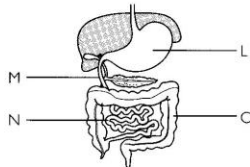


DIAGRAM 7/RAJAH 7

Which of the following parts absorbs food into the bloodstream?

Antara yang berikut, manakah bahagian yang menyerap makanan ke dalam aliran darah?

- A L
- B M
- C N
- D O

16 Diagram 8 shows an experiment which is carried out to study the absorption of digested food.

Rajah 8 menunjukkan satu eksperimen yang dijalankan untuk mengkaji penyerapan makanan tercerna.

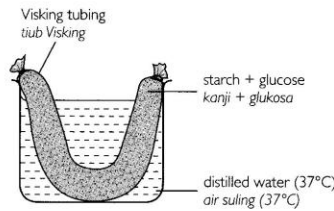


DIAGRAM 8/RAJAH 8

Which of the following is the correct result of this experiment?

Antara yang berikut, yang manakah keputusan yang betul bagi eksperimen ini?

	Test for starch Ujian kanji		Test for glucose Ujian glukosa	
	Experiment Eksperimen		Experiment Eksperimen	
	Beginning Awal	End Akhir	Beginning Awal	End Akhir
A	Absent Tiada	Present Ada	Absent Tiada	Present Ada
B	Absent Tiada	Present Ada	Absent Tiada	Absent Tiada
C	Absent Tiada	Absent Tiada	Absent Tiada	Present Ada
D	Absent Tiada	Absent Tiada	Present Ada	Present Ada

**REABSORPTION OF WATER AND DEFECATION**

17 Diagram 9 shows part of the human digestive system.  
*Rajah 9 menunjukkan sebahagian sistem pencernaan manusia.*

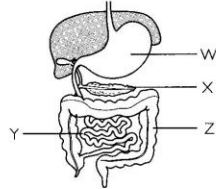


DIAGRAM 9/RAJAH 9

Which of the following organs reabsorbs water?  
*Antara yang berikut, manakah organ yang menyerap semula air?*

A W    B X  
 C Y    D Z

**HEALTHY EATING HABITS**

18 Diagram 10 shows a food pyramid guide.  
*Rajah 10 menunjukkan satu panduan piramid makanan.*

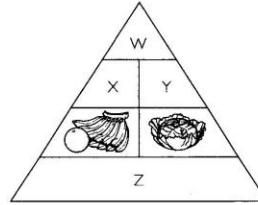


DIAGRAM 10/RAJAH 10

Which group of food may cause heart attack if taken excessively?  
*Manakah kumpulan makanan yang boleh menyebabkan penyakit jantung jika diambil secara berlebihan?*

A W    B X  
 C Y    D Z

**FORMATIVE PRACTICE Paper 2**

SUBCHAPTER	2008		2009		2010	
	A	B	A	B	A	B
2.1	-	-	-	-	-	-
2.2	-	-	-	-	-	-
2.3	-	-	-	-	-	-
2.4	-	-	-	-	-	-
2.5	-	-	-	-	-	-
2.6	-	-	-	-	-	-

SCORE  
27

**Structured Questions**

Section A  
 Instructions: Answer all the questions.  
 Arahan: Jawab semua soalan.

**THE HUMAN DIGESTIVE SYSTEM**

1 Diagram 1.1 shows an experiment which is conducted to study the action of saliva on starch. The result of the experiment after 30 minutes is shown in Table 1.  
*Rajah 1.1 menunjukkan satu eksperimen dijalankan untuk mengkaji tindakan air liur terhadap kanji. Keputusan eksperimen selepas 30 minit ditunjukkan dalam Jadual 1.*

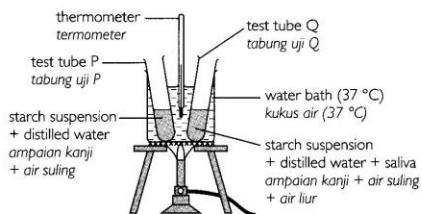


DIAGRAM 1.1/RAJAH 1.1

TSTS Question 17: Attributing    Question 18: Analysing, Relating

Test tube Tabung uji	Presence of starch Kehadiran kanji
P	Yes/Ya
Q	No/Tidak

TABLE 1.1/JADUAL 1.1

- (a) i. Why must test tubes P and Q are placed in the water bath at 37 °C?  
**TSTS** Mengapakah tabung uji P dan Q direndam dalam kukus air bersuhu 37 °C?

[1 mark/1 markah]

- ii. Give **one** reason why there is no starch in test tube Q.  
**TSTS** Beri satu sebab mengapa tidak terdapat kanji dalam tabung uji Q.

[1 mark/1 markah]

- iii. In which part of the alimentary canal does such an action occur as in test tube X?  
**TSTS** Pada saluran pencernaan, di bahagian manakah berlaku tindakan yang sama seperti dalam tabung uji X?

[1 mark/1 markah]

- (b) Diagram 1.2 shows several foods.  
**TSTS** Rajah 1.2 menunjukkan beberapa makanan.

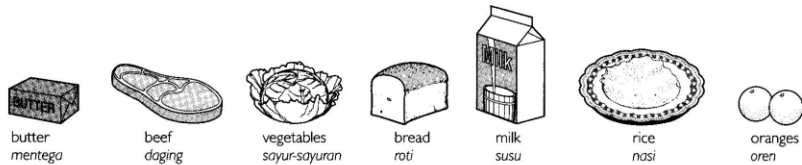


DIAGRAM 1.2/RAJAH 1.2

Based on Diagram 1.2, complete Table 1.2 by writing the food samples and their different classes.  
 Berdasarkan Rajah 1.2, lengkapkan Jadual 1.2 dengan menulis sampel makanan dan kelas-kelas makanannya.

Food samples Sampel makanan	Class of food Kelas makanan
i. _____	_____
ii. _____	_____
iii. _____	_____
iv. _____	_____
v. _____	_____

TABLE 1.2/JADUAL 1.2

[5 marks/5 markah]

**TSTS** Questions 1(a) i, ii.: Making inference  
 Question 1(a) iii.: Relating

Question 1(b): Grouping and classifying

2 Diagram 2 shows the human digestive system./Rajah 2 menunjukkan sistem pencernaan manusia.



DIAGRAM 2/RAJAH 2

- (a) i. Label **one** of the following parts in Diagram 2.  
 Labelkan **satu** daripada bahagian-bahagian yang berikut pada Rajah 2.

Pancreas/Pankreas    Gall bladder/Pundi hempedu    Mouth/Mulut    Oesophagus/Esofagus

[1 mark/1 markah]

- ii. State **one** function of the part labelled in (a)i.  
 Nyatakan **satu** fungsi bahagian yang dilabelkan di (a)i.

[1 mark/1 markah]

- (b) Some food tests are carried out on food sample Y. The results are shown in Table 2.  
 Beberapa ujian makanan dijalankan ke atas sampel makanan Y. Keputusan ditunjukkan dalam Jadual 2.

Food tests Ujian makanan	Observations Pemerhatian	Food class Kelas makanan
Sample Y is added with iodine solution Sampel Y ditambah dengan larutan iodin	The mixture turns blue-black Campuran menjadi biru kehitaman	1.
Sample Y is boiled with Millon's reagent in a test tube Sampel Y dididihkan bersama reagen Millon dalam tabung uji	A red precipitate is formed Mendakan merah terbentuk	2.

TABLE 2/JADUAL 2

- i. Complete Table 2 by naming the food classes that are present in food sample Y.  
 Lengkapkan Jadual 2 dengan menamakan kelas makanan yang hadir dalam sampel makanan Y.  
 [2 marks/2 markah]
- ii. Explain what happens to food sample Y while it is inside the part labelled X.  
 Terangkan apakah yang berlaku kepada sampel makanan Y apabila ia berada di dalam bahagian yang berlabel X.

1. \_\_\_\_\_
2. \_\_\_\_\_

[2 marks/2 markah]

- iii. State what happens to the final products in (b)ii.  
 Nyatakan apakah yang berlaku kepada hasil akhir di (b)ii.

[1 mark/1 markah]



**Section B**

**Instructions:** Answer all the questions.

**Arahan:** Jawab semua soalan.

**ABSORPTION OF DIGESTED FOOD**

3 A group of students carried out an experiment as shown in Diagram 3.  
 Sekumpulan murid menjalankan satu penyiasatan seperti yang ditunjukkan pada Rajah 3.

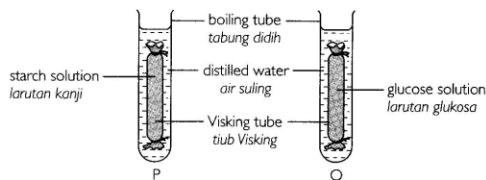


DIAGRAM 3/RAJAH 3

(a) What is the aim of the experiment?

**SPS** Apakah tujuan eksperimen itu?

[1 mark/1 markah]

(b) State the variables involved in the experiment.

**SPS** Nyatakan pemboleh ubah-pemboleh ubah dalam eksperimen itu.

i. Manipulated variable Pemboleh ubah dimanipulasikan	
ii. Responding variable Pemboleh ubah bergerak balas	
iii. Constant variable Pemboleh ubah dimalarkan	

[3 marks/3 markah]

(c) Complete Table 3 to show the results of the experiment.

**SPS** Lengkapkan Jadual 3 untuk menunjukkan keputusan eksperimen.

Boiling tubes Tabung didih	Food tests Ujian makanan	Beginning of experiment Awal eksperimen	End of experiment Akhir eksperimen
P	Test for starch Ujian kanji	Absent Tiada	i. _____
	Test for glucose Ujian glukosa	Absent Tiada	ii. _____
Q	Test for starch Ujian kanji	Absent Tiada	iii. _____
	Test for glucose Ujian glukosa	Absent Tiada	iv. _____

TABLE 3/JADUAL 3

[2 marks/2 markah]

**SPS** Question 3(a): Experimenting

Question 3(b): Controlling variables

Question 3(c): Observing

(d) State the hypothesis of the experiment.

**SP5** Nyatakan hipotesis bagi eksperimen itu.

[1 mark/1 markah]

(e) Which food diffuses through the Visking tube? Why?

**SP5** Makanan manakah yang meresap melalui tiub Visking? Mengapa?

[2 marks/2 markah]

(f) i. Compare the materials in the above experiment with the parts of the human digestive system and state the parts that are represented by the following materials.

**SP5** Bandingkan bahan-bahan dalam eksperimen di atas dengan bahagian sistem pencernaan manusia dan nyatakan bahagian yang diwakili oleh bahan-bahan tersebut.

Materials Bahan-bahan	Parts of the human digestive system Bahagian dalam sistem pencernaan manusia
Visking tube Tiub Visking	
Distilled water Air suling	

[2 marks/2 markah]

ii. Based on the experiment, explain what happens to the glucose in the small intestine.

Berdasarkan eksperimen itu, terangkan apakah yang berlaku kepada glukosa dalam usus kecil.

[1 mark/1 markah]

**GROUP WORKS** **Towards PSMR**

**2.1 THE HUMAN DIGESTIVE SYSTEM** **1515**

The diagram below shows the human digestive system. Label the following parts.  
Rajah di bawah menunjukkan sistem pencernaan manusia. Label bahagian-bahagian yang berikut.

1 \_\_\_\_\_

2 \_\_\_\_\_

3 \_\_\_\_\_

4 \_\_\_\_\_

5 \_\_\_\_\_

6 \_\_\_\_\_

7 \_\_\_\_\_

**SP5** Question 3(d): Making hypothesis

Questions 3(e), 3(f): Communicating

