

Paper 1

Answer **all** questions. Each question is followed by four options, **A, B, C and D**. For each question, choose **one** answer only.

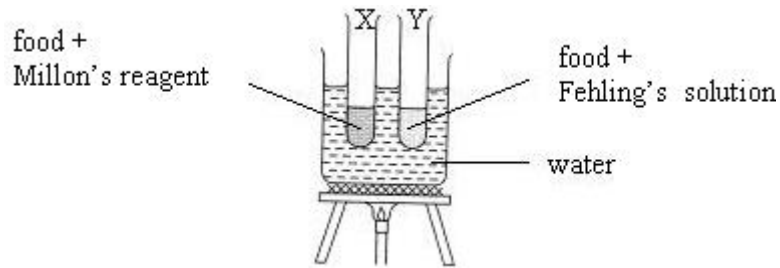
1. There is a class of food that consists of carbon, hydrogen, oxygen and nitrogen. Among the following, which is the function of the class of food mentioned to human beings?
- A To supply energy
 - B To dissolve certain vitamins in the body
 - C To replace damaged cells
 - D To protect the body against diseases
2. Vitamin P has the following characteristics.

- Prevents night blindness
- To promote healthy skin

Based on the given information, what is vitamin P?

- A Vitamin A
 - B Vitamin B
 - C Vitamin C
 - D Vitamin D
3. Among the following, which is **true** about vitamin?
- A Needed in a large quantity
 - B Needed to prevent diseases
 - C Has a high energy value
 - D Needed to prevent the loss of water
4. Among the following, which is paired **correctly**?
- | | <i>Mineral</i> | <i>Deficiency disease</i> |
|---|----------------|---------------------------|
| A | Sodium | Scurvy |
| B | Calcium | Sterility |
| C | Iron | Rickets |
| D | Iodine | Goitre |

5.



The diagram above shows tests for two classes of food. It is observed that red precipitate formed in test tubes X and Y. Therefore test tubes X and Y contain

- A glucose and protein
- B protein and glucose
- C starch and glucose
- D protein and starch

6. A type of food contains 76 % of carbohydrate. What is probably the food?

- A Egg
- B Fish
- C Rice
- D Milk

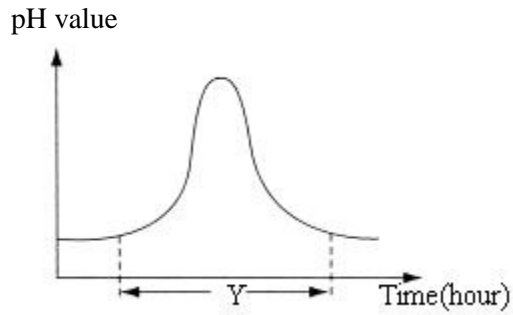
7.



The diagram above shows a part of human digestive system. Which of the following parts does the digestion of protein take place?

- A P
- B Q
- C R
- D S

8.

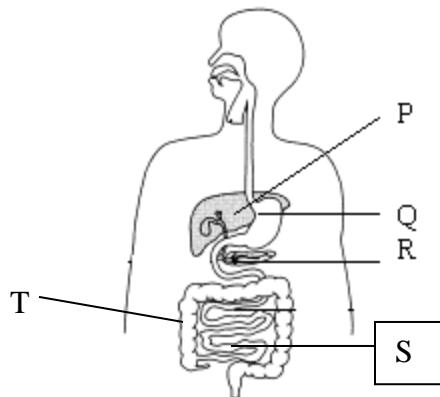


The pH value in the stomach is measured based on the time and the result is plotted as shown in the diagram above. Among the following, what happens in stage *Y*?

- A Peristalsis takes place
- B Stomach stops secreting gastric juice
- C Digestion of food takes place
- D Water is absorbed from food

Questions 9 and 10 are based on the figure below.

9.



The diagram above shows the human alimentary canal. Which of the parts does the absorption of food occurs?

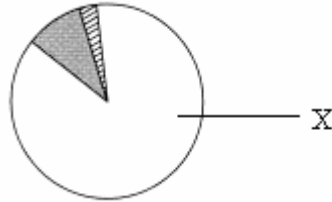
- A *P*
- B *Q*
- C *R*
- D *S*

10. Which of the following processes occurs in *T*?

- A Reabsorption of water
- B Digestion of protein
- C Digestion of starch
- D Production of vitamin A

11. A student had two pieces of bread with margarine and a glass of milk for his breakfast. Ali's breakfast lacks
- A carbohydrate
 - B protein
 - C fat
 - D fibre

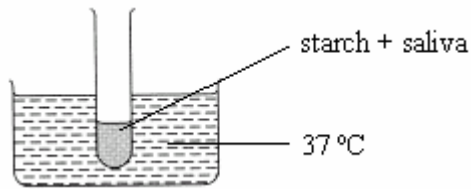
12.



The diagram above shows a balanced diet. Among the following, which represents the class of food labelled X?

- A Protein
 - B Fat
 - C Fibre
 - D Carbohydrate
13. A student wants to test whether he is having diabetes. He heats up some sample of his urine in solution X. What is probably solution X?
- A Benedict's solution
 - B Millon's reagent
 - C Liquid alcohol
 - D Iodine solution
14. Which of the food listed below are needed to build new cells?
- I Milk
 - II Potato
 - III Fish
- A I and II only
 - B I and III only
 - C II and III only
 - D I, I, and III

15.



The diagram above shows a solution of saliva and starch that is kept at a fixed temperature of 37 °C. After a few minutes, what can be observed in the solution?

- I The solution changes blue litmus paper to red
- II Orange-red precipitate is formed when it is heated with Benedict's solution
- III A dark blue colour is formed when it is tested with iodine solution

- A II only
- B I and II only
- C II and III only
- D I, II and III

16. Gastric juice in the stomach contains hydrochloric acid to

- I neutralise the alkali in saliva
- II kill bacteria in food
- III break down the protein into small molecules

- A I and II only
- B I and III only
- C II and III only
- D I, II and III

17.

- | |
|---|
| <ul style="list-style-type: none">• Controlling the body temperature• Transporting food during digestion |
|---|

Which of the following classes of food plays the above roles in human body?

- A Protein
- B Carbohydrate
- C Water
- D Mineral salt

18. When a sample of food containing starch is added with iodine solution,

- A a blue-black colour appears
- B an orange-red precipitate is formed
- C a dark red precipitate is formed
- D a purple colour appears

19.

- Egg yolk
- Butter
- Palm oil

Which of the following classes of food can be found in large quantities in the food listed above?

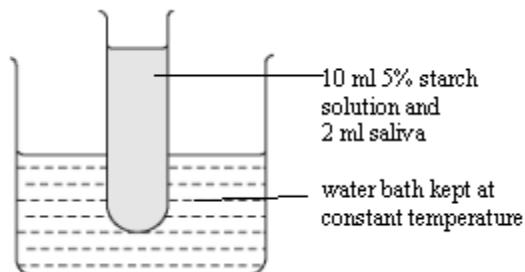
- A Carbohydrate
- B Fat
- C Protein
- D Roughage

20. Which of the following processes pushes the food along the alimentary canal?

- A Digestion
- B Respiration
- C Transpiration
- D Peristalsis

Paper 2

Answer the question.



Four sets of similar apparatus, as shown in the figure above were prepared in an experiment. The following steps were used to carry out the experiment.

- S1 The water bath for each set of apparatus was kept at these temperatures respectively:
24° C, 30° C, 37° C and 42° C.
- S2 After 5 minutes, the contents of each tube was analysed to find out how much sugar was present.
- S3 The results of the experiment was recorded in the table below.

Temperature of water bath (°C)	24	30	37	42
Amount of sugar (ml)	0.5	4	7	1.5

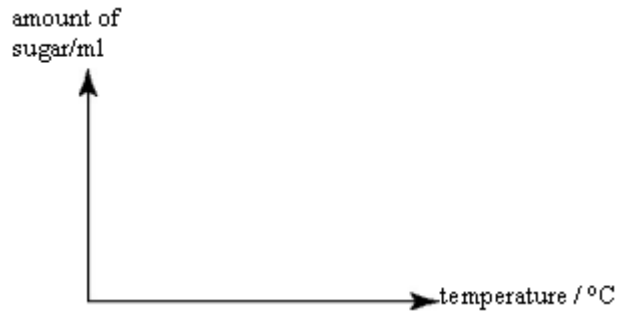
(a) State the variables in the experiment.

Type of Variable	Factor
Variable that is kept constant	
Manipulated variable	
Responding variable	

(b) Which temperature is most suitable for the formation of sugar?

(c) Suggest the reason for your answer in (b).

(d) Draw a graph to show the amount of sugar produced versus temperature.



(e) An enzyme is needed to change starch to sugar. What have you learnt about this enzyme, based on the results of this experiment?

(f) Name the enzyme present in saliva.

(g) Predict what would happen if:

(i) a little acid was added to the test tube kept at 36°C.

(ii) a little alkali was added to the test tube kept at 36°C.

Answers:
Paper 1

1	C	11	D
2	A	12	D
3	B	13	A
4	D	14	B
5	B	15	A
6	C	16	A
7	B	17	C
8	C	18	A
9	D	19	B
10	A	20	D

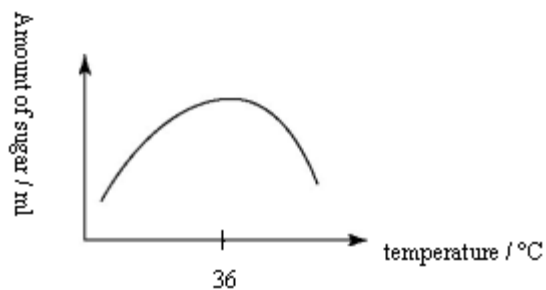
Paper 2

- (a) Variable that is kept constant: The amount of starch/ The volume of saliva
Manipulated variable: Temperature of the water bath
Responding variable: Amount of sugar

(b) 37 °C

- (c) The enzyme in saliva that converts starch to sugar, works best at this temperature. 37 °C is also similar to the body temperature.

(d)



- (e) The enzyme works best at around 37 °C, which is almost the same as the body temperature. It does not work well at lower (24°C) or higher (42°C) temperatures.

(f) Salivary amylase

- (g) (i) Less sugar would be formed
(ii) More sugar would be formed