Practice Question Set For GCSE
Subject : Biology
Paper-1 Topic: B4 Bioenergetics

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Name of the Student:_____
Max. Marks : 21 Marks **Time : 21 Minutes**

Q1.

This question is about photosynthesis.

(a) Complete the equation for photosynthesis.

Choose answers from the box.

nitrogen	**oxygen**	**ethanol**	**water**

carbon dioxide + _____ $\xrightarrow{\text{light}}$ glucose + _____

(2)

(b) What is the chemical formula for glucose?

Tick (✓) **one** box.

CO_2 ☐ $C_6H_{12}O_6$ ☐ H_2O ☐ O_2 ☐

(1)

(c) Give **two** ways plants use the glucose produced by photosynthesis.

1 _____

_____

2 _____

_____

(2)

(d) A person has two greenhouses.

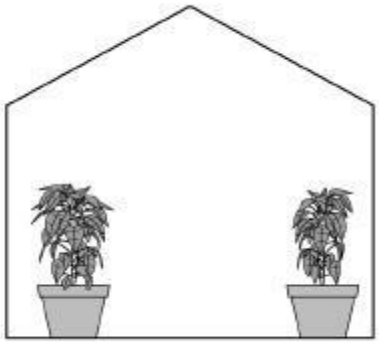
In each greenhouse, the plants:

- are all the same type
- receive the same intensity of light and the same volume of water
- grow in the same type of soil.

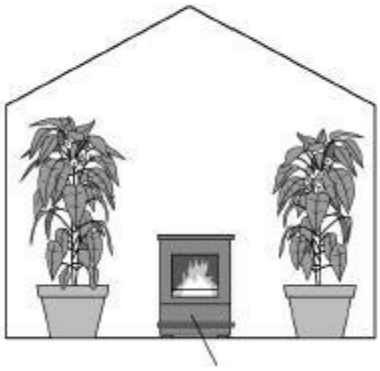
The figure below shows the greenhouses.

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Greenhouse A



Greenhouse B



The person burns logs in the wood burner in greenhouse **B**.

Explain why the plants in greenhouse **B** grow faster than the plants in greenhouse **A**.

_____

_____

_____

_____

_____

_____

_____

_____

_____

(4)

(Total 9 marks)

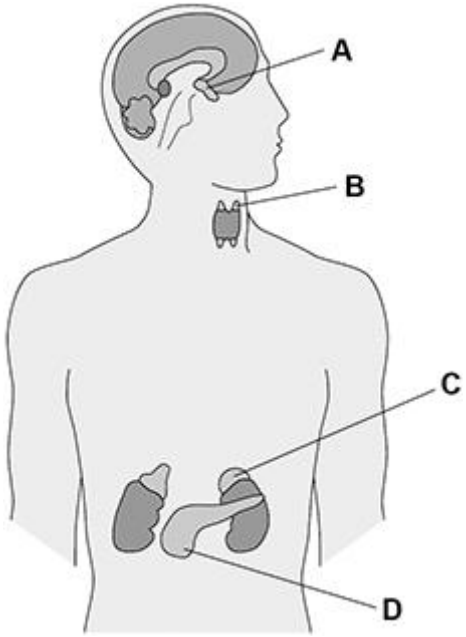
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Q2.

The endocrine system is made up of glands which secrete hormones.

Figure 1 shows the position of endocrine glands in the human body.

Figure 1



(a) Which letter shows the pancreas?

Tick (✓) **one** box.

A ☐ **B** ☐ **C** ☐ **D** ☐

(1)

(b) Which letter shows the thyroid gland?

Tick (✓) **one** box.

A ☐ **B** ☐ **C** ☐ **D** ☐

(1)

(c) Hormones travel from the gland where they are made to the target organ where they have an effect.

How do hormones travel from the gland to the target organ?

_____

_____

(1)

When blood glucose concentration becomes too high, hormone **X** from the pancreas causes a decrease in the glucose concentration.

(d) Name hormone **X**.

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(1)

(e) In what **two** ways does hormone **X** cause a decrease in blood glucose concentration?

Tick (✓) **two** boxes.

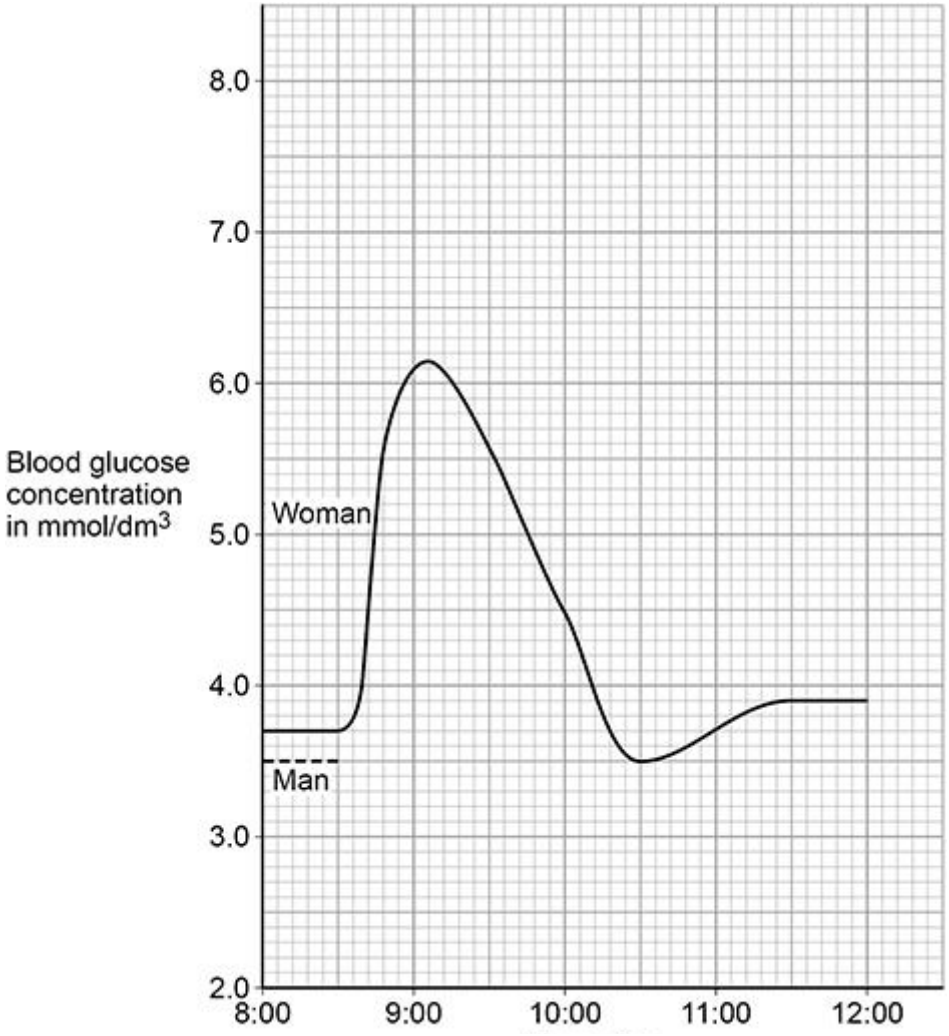
Glucose is broken down.	☐
Glucose is converted to glycogen.	☐
Glucose is excreted by the kidneys.	☐
Glucose moves from the blood into the cells.	☐
Glucose moves into the small intestine.	☐

(2)

Figure 2 shows the blood glucose concentration in a woman.

Figure 2

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(f) Suggest what time of day the woman ate her breakfast of sugar-coated cereal.

Time of day = _____

(1)

The man in **Figure 2** has Type 2 diabetes but he has **not** been treated.

(g) The man ate:

- the same type and amount of breakfast cereal as the woman
- at the same time as the woman.

Suggest what his blood glucose concentration would be at 9:00

Blood glucose concentration = _____ mmol/dm^3

(1)

(h) The man:

- is an obese office worker
- does not exercise
- eats sugary snacks at his desk.

Give **two** lifestyle changes a doctor might recommend to the man to help him control his diabetes.

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1 _____

_____

2 _____

_____

(2)

(i) Describe how a **low** blood glucose concentration would lead to a person feeling weak.

_____

_____

_____

_____

(2)

(Total 12 marks)

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