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

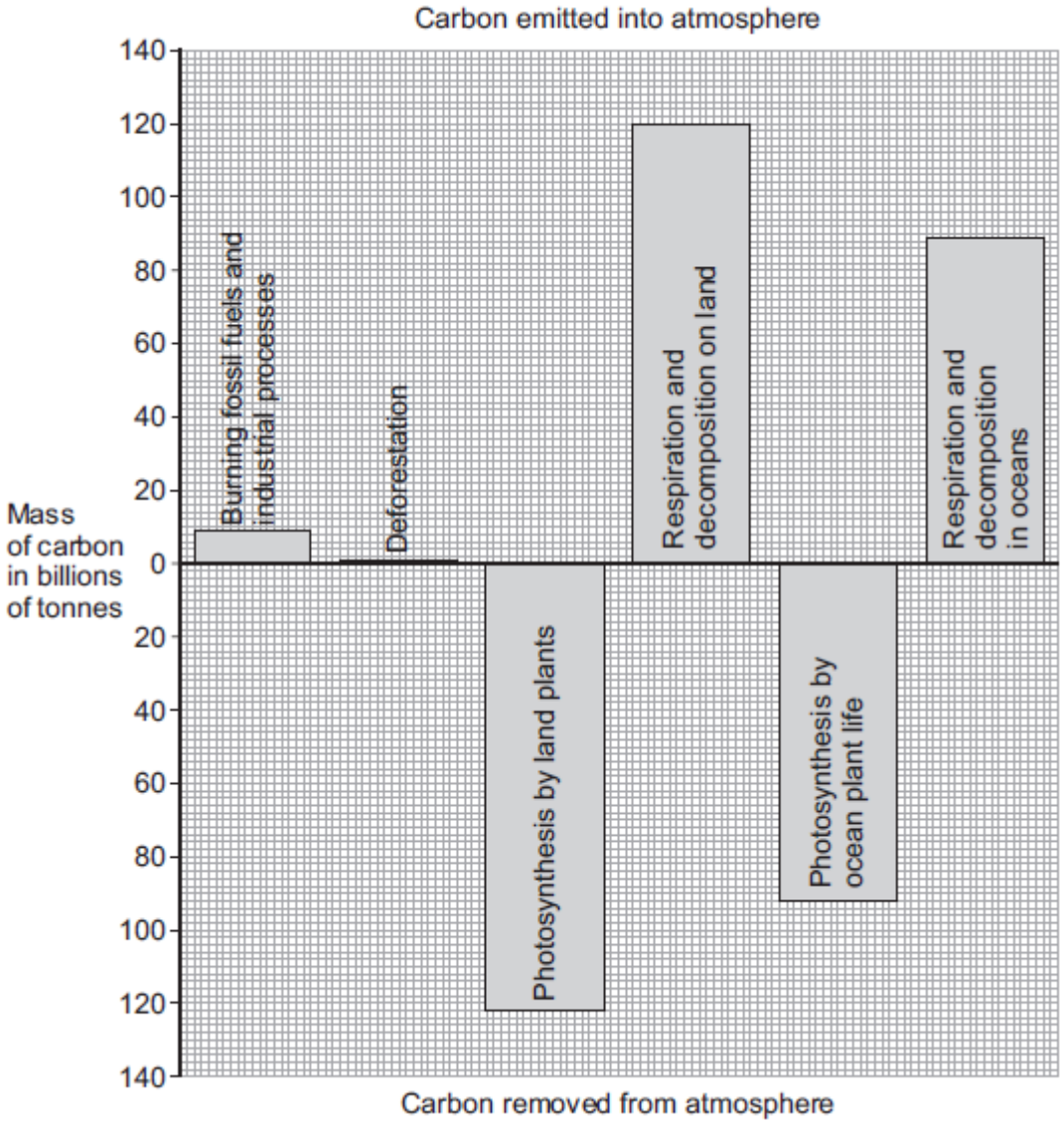
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Name of the Student:_____
Max. Marks : 15 Marks **Time : 15 Minutes**

Q1.

The amount of carbon in the atmosphere is increasing.

The graph shows the mass of carbon in billions of tonnes involved in some processes in the carbon cycle each year.



(a) (i) Use information from the graph to calculate the total mass of carbon removed from the atmosphere each year.

_____

_____

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_____ billions of tonnes

(2)

(ii) The mass of carbon in the atmosphere is increasing by 5 billion tonnes each year.

One tonne of carbon is equivalent to 3.67 tonnes of carbon dioxide.

Calculate the increase in the mass of carbon dioxide in the atmosphere each year.

_____

_____

_____ billion tonnes

(1)

(b) (i) Many scientists think the burning of fuels is the main cause of the increasing amount of carbon dioxide in the atmosphere. Other scientists disagree.

Use information from the graph to suggest why some scientists do **not** think that burning fuels is the main cause of the increase in carbon dioxide in the atmosphere.

_____

_____

_____

(1)

(ii) Some scientists think we should eat less meat and eat more food from plants.

Suggest how eating less meat and eating more food from plants could reduce the amount of carbon dioxide in the atmosphere.

_____

_____

_____

_____

(2)

(Total 6 marks)

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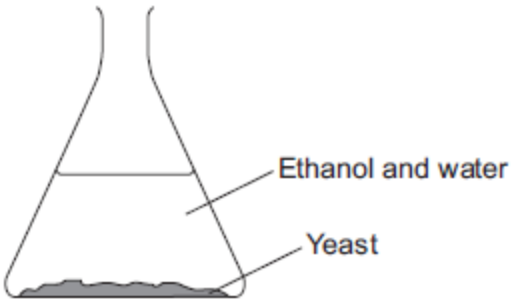
Q2.

This question is about ethanol. The boiling point of ethanol is 78 °C.

Ethanol can be produced by fermentation of sugar with yeast.

A student:
- put yeast and water in a conical flask
- added sugar to the yeast and water
- left the mixture for a few days to ferment.

The diagram shows the conical flask after the mixture had fermented to produce ethanol and carbon dioxide.



.

(a) Write the word equation for the reaction taking place to produce ethanol.

_____

(1)

(b) (i) Suggest how the student could separate yeast from the mixture of ethanol and water.

_____

_____

(1)

(ii) Suggest how the student could separate ethanol from the mixture of ethanol and water.

_____

_____

(1)

(Total 3 marks)

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Q3.

A food chain is shown below.

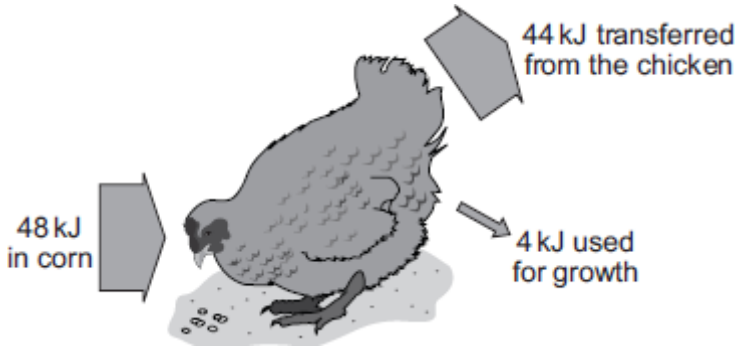
corn → chicken → human

(a) What energy transfer takes place when corn plants photosynthesise?

_____ energy $\xrightarrow{\text{Photosynthesis}}$ _____ energy

(1)

(b) The diagram shows what happens to the energy in the corn eaten by the chicken.



(i) What percentage of the energy in the corn eaten by the chicken is used for growth?

_____

_____

Percentage of energy eaten that is used for growth = _____

(2)

(ii) Give **three** ways the rest of the energy is transferred from the chicken.

1. _____

_____

2. _____

_____

3. _____

_____

(3)

(Total 6 marks)

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