



Centre Number

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Candidate Number

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General Certificate of Secondary Education
2018

Single Award Science: Biology

Unit 1
Foundation Tier

ML

[GSA11]

WEDNESDAY 21 FEBRUARY 2018, MORNING

TIME

1 hour, plus your additional time allowance.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

Write your answers in the spaces provided in this question paper.
Answer **all ten** questions.

INFORMATION FOR CANDIDATES

The total mark for this paper is 60.

Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.

Quality of written communication will be assessed in Question **10**.

For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
Total Marks	

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1 (a) Drinking too much alcohol can harm health.

(i) Name the part of the body most likely to be harmed by drinking too much alcohol.

Choose from:

kidney

liver

skin

leg

[1]

(ii) What is meant by **binge drinking**?

_____ [1]

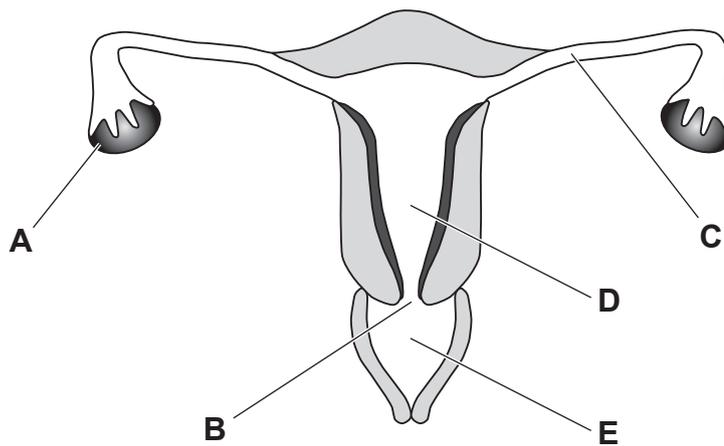
(b) Smoking can also harm health. Complete the table below about smoking and its effects.

Substance in cigarette smoke	Harmful effect
	causes lung cancer
nicotine	

[2]

Examiner Only	
Marks	Remark

2 (a) The diagram below shows the female reproductive system.



Source: CCEA

(i) Complete the table below. Use the letters **A, B, C, D** or **E** to show the position of each named part.

Name	Letter
oviduct	
uterus	
vagina	

[3]

(ii) Use the letters **A, B, C, D** or **E** to complete the sentences below.

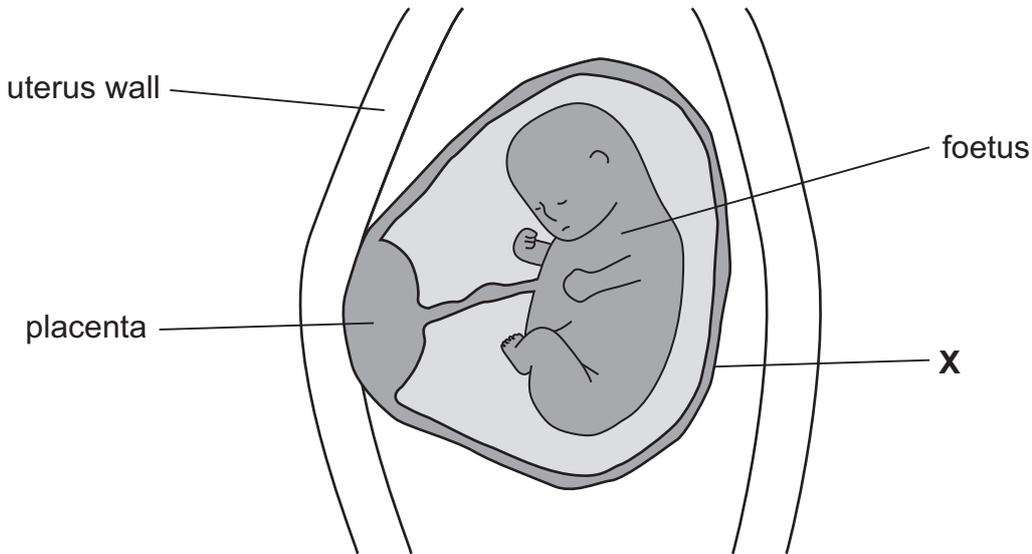
During sexual intercourse, sperm are placed in _____ and then they swim up through the female reproductive system.

If there is an egg in _____ fertilisation can take place. [2]

Examiner Only

Marks Remark

(b) The diagram below shows a foetus in the uterus.



Source: CCEA

(i) What is the structure labelled **X** in the diagram?

Choose from:

umbilical cord : **amnion** : **zygote**

_____ [1]

(ii) What is the function of the structure labelled **X**?

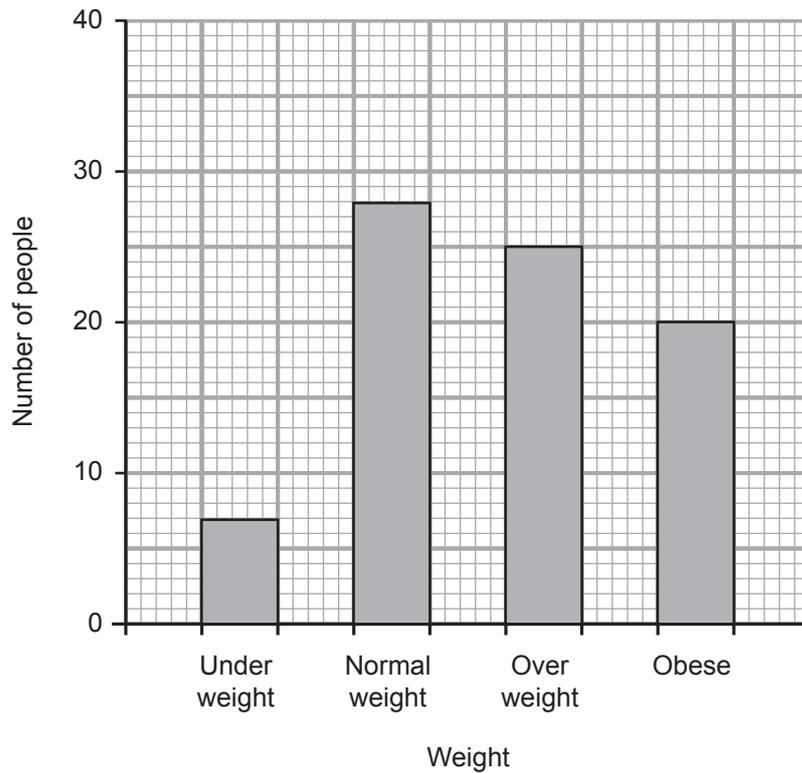
 _____ [1]

(iii) The diagram shows an early stage of pregnancy.
 Write down **two** changes that will take place within the uterus as pregnancy continues.

1. _____
 2. _____ [2]

Examiner Only	
Marks	Remark

- 3 (a) A doctor measured the weight of 80 people and classified them into four groups. The graph below shows the results.



- (i) Calculate the number of people whose weight was above normal.

Answer _____ [1]

- (ii) Calculate the percentage of people who were obese.

Show your working out.

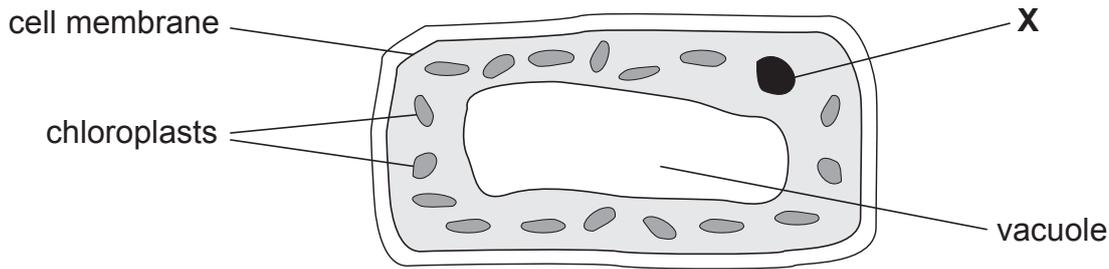
Answer _____ % [2]

- (b) The data in the graph shows discontinuous variation. What is the evidence for this?

 _____ [1]

Examiner Only	
Marks	Remark

- 5 (a) The diagram below shows a typical plant cell with some of the parts named.



- (i) What is the structure labelled **X** on the diagram?

_____ [1]

- (ii) The diagram shows a cell from the leaf of a plant. Give **one** way a cell from the root of a plant would be different.

_____ [1]

- (iii) One function of the vacuole is to store water.
Name, in order, the three parts of a cell that water must pass through to reach the vacuole.

_____ → _____ → _____ [2]

- (iv) Name **two** structures in a plant cell that are also found in an animal cell.

1. _____

2. _____ [2]

- (b) Stem cells are found in both plants and animals. Describe the function of stem cells.

_____ [1]

Examiner Only

Marks Remark

6 Human activity can have positive effects on biodiversity.

(a) What is meant by **biodiversity**?

_____ [1]

(b) The table below shows information about the fish caught by one boat between 2005 and 2015.

Year	Number of fish caught (× 1000)	Average mass of each fish /kg
2005	15.7	0.60
2010	13.2	0.71
2015	10.8	0.90

(i) Calculate how many fewer fish were caught in 2015 than in 2005.

Show your working out.

Answer _____ [2]

(ii) Using the information in the table, describe the trend in the **average mass** of each fish caught.

_____ [1]

(iii) Give **one** change in fishing methods that could explain this trend.

_____ [1]

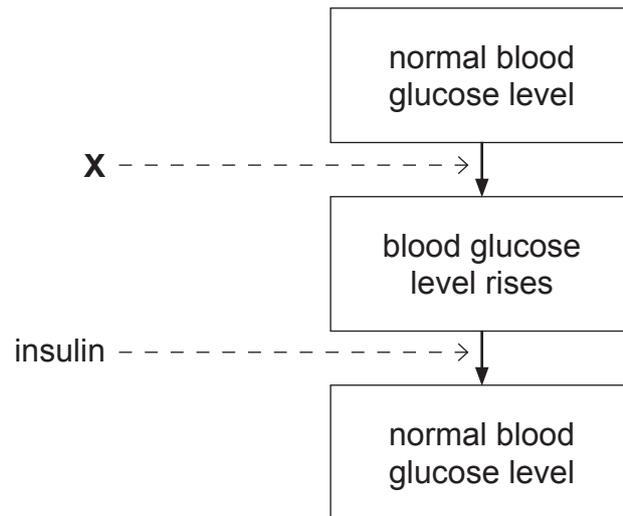
(iv) Look at the information provided. Why did the fishermen make the same amount of money (profit) each year?

_____ [1]

Examiner Only

Marks Remark

7 (a) The flow diagram below summarises the action of insulin in a person.



(i) Explain fully what this person must have done at **X**.

[2]

(ii) Complete the following sentences about insulin.

Insulin changes glucose into _____.

This is then stored by the body in the _____. [2]

Examiner Only	
Marks	Remark

- (b) People with Type 1 diabetes have to inject themselves with insulin every day for life. They should take regular exercise and eat a balanced diet.

They have to monitor their blood glucose regularly using special instruments, so they know how much insulin to inject.

People who have had diabetes for many years or those who have not controlled their blood glucose well are at risk of complications.

Around 10% of the NHS budget is spent on diabetes.

- (i) Using the information provided and your knowledge, give **two** reasons why the treatment of diabetes is so expensive.

1. _____

2. _____ [2]

- (ii) Give **one** long-term effect (complication) of diabetes.

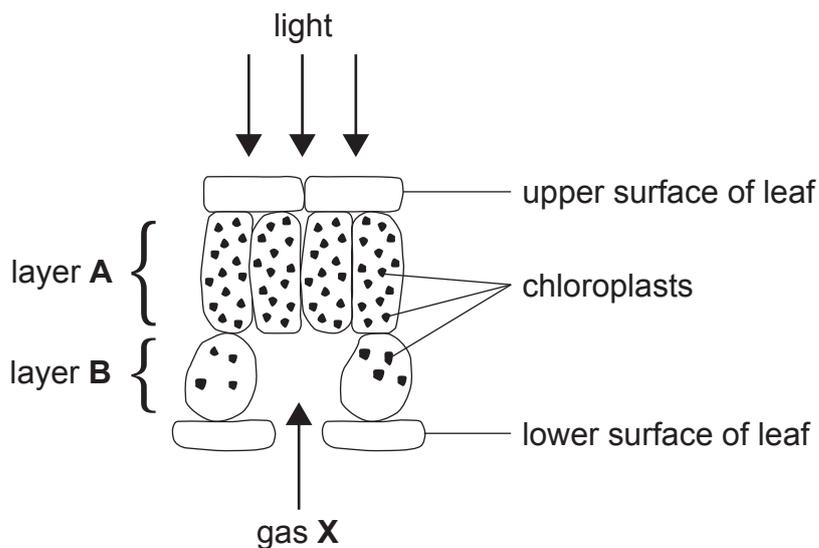
_____ [1]

- (iii) Give **one** difference between Type 1 and Type 2 diabetes.

_____ [1]

Examiner Only	
Marks	Remark

- 8 (a) The diagram below represents a section through a plant leaf during the day. Photosynthesis takes place in chloroplasts.



- (i) Look at the information given. Give **two** reasons why more photosynthesis takes place in layer **A** than layer **B**.

1. _____

2. _____ [2]

- (ii) Name gas **X**, that is used in photosynthesis.

_____ [1]

- (b) Name the **two** products of photosynthesis.

1. _____

2. _____ [2]

Examiner Only	
Marks	Remark

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(Questions continue overleaf)

- 9 (a) Colds and flu are caused by viruses.
Describe how colds and flu can be spread from person to person.

_____ [1]

- (b) There are many different strains of cold and flu viruses. Flu can make people feel very unwell, but a cold usually has much less of an effect. Elderly people and people with conditions such as diabetes are offered a flu vaccination each year to boost their immunity.

- (i) Why is it important that elderly people are offered a flu vaccination each year?

_____ [1]

- (ii) Look at the information provided. Give one reason why a vaccination to protect against colds has **not** been developed.

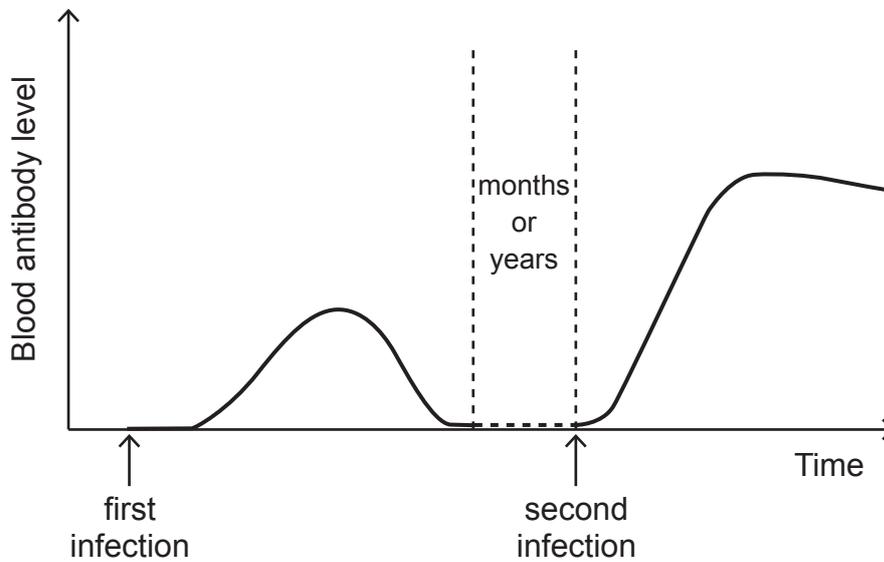
_____ [1]

Examiner Only

Marks

Remark

- (c) Look at the graph below. It shows how antibody levels change when someone is infected by the same disease-causing microorganism for the first time and then again sometime later.



- (i) Use the graph to give **two** ways the body's response is different when infected a second time with the same type of microorganism.

1. _____

2. _____
 _____ [2]

- (ii) Name the type of cells which are responsible for producing the body's response to the second infection.

_____ [1]

Examiner Only	
Marks	Remark

THIS IS THE END OF THE QUESTION PAPER

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