



| Ce | Centre Number | | | | | | |
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| 71 | | | | | | | |
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| Candidate | Number |
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General Certificate of Secondary Education 2012-2013

Science: Single Award

Unit 1 (Biology) **Foundation Tier** [GSS11]

MONDAY 27 FEBRUARY 2012 9.30 am-10.30 am



TIME

1 hour.

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 eight** 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 7(a).

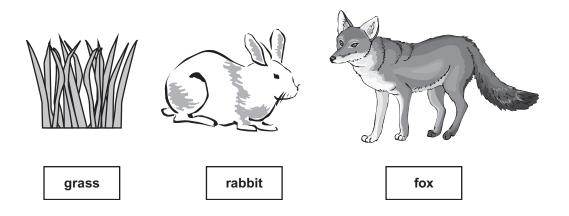


| For Examiner's use only | | | | | |
|-------------------------|-------|--|--|--|--|
| Question Number | Marks | | | | |
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |
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| Total | |
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- (a) (i) Complete the food chain by adding the arrows. [1]
 - (ii) What do the arrows in a food chain show?

_____[1]

(iii) Name the producer in this food chain.

_____[1]

(iv) What is the source of energy for all food chains?

______[1]

(b) The table below shows the number of rabbits and foxes in a forest over a period of three years.

| | Year | | | | |
|---------|------|-----|-----|--|--|
| | 1st | 2nd | 3rd | | |
| rabbits | 200 | 300 | 600 | | |
| foxes | 4 | 2 | 0 | | |

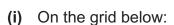
Explain how the drop in the number of foxes may have caused the rise in the number of rabbits.

[2]

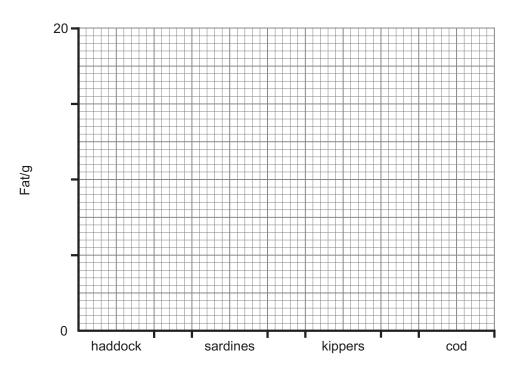
| (i) | Use | lines to link each disor | rder with one effect it has on sufferers. | |
|-------|-----|---|--|---|
| `, | | Eating disorder | Effect on sufferers | |
| | | | They become obese | |
| | | Bulimia | They binge eat then make themselves vomit | |
| | | Anorexia | They eat very little and become thin | |
| | | | [2] | |
| (11) | | ole who suffer from eat | a higher than average number of ting disorders. Suggest a reason for | - |
| | | | | |
| | | | | |
| | | | [1] | |
| (iii) | | | est another job that may have a high | |
| (iii) | | rt from modelling sugg ber of people with eati | est another job that may have a high ing disorders. | |
| (iii) | | | est another job that may have a high | |
| (iii) | | | est another job that may have a high ing disorders. | |
| (iii) | | | est another job that may have a high ing disorders. | |
| (iii) | | | est another job that may have a high ing disorders. | |
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| (iii) | | | est another job that may have a high ing disorders. | |
| (iii) | | | est another job that may have a high ing disorders. | |

(b) The table below shows the amount of fat in four types of fish.

| Type | Fat/g |
|----------|-------|
| haddock | 8 |
| sardines | 14 |
| kippers | 11 |
| cod | 1 |



- 1. complete the scaling for the Y axis.
- 2. draw a **bar chart** for the information.



Type of fish

(ii) Name the type of fish someone should eat if they are trying to lose weight. Explain your choice.

| | | [2] |
|--|--|-----|

[3]

3 (a) The table below shows information about some methods of contraception. Using a tick (✔) complete the table to give one statement for each method.

Examiner Only

Marks Remark

The first is done for you.

| Method of contraception | Permanent | Prevents sexually transmitted diseases | Changes hormone levels |
|-------------------------|-----------|---|------------------------------|
| female sterilisation | ~ | | |
| condoms | | | |
| contraceptive pill | | | |

[2]

[2]

(b) (i) Complete the sentences below.

Choose from:

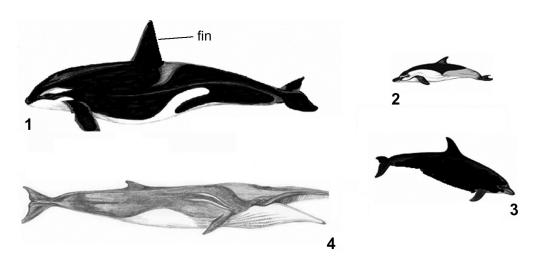
(ii)

| | cervix | oviduct | sperm | |
|-------------|-------------------|------------------|----------|--------|
| | testes | fertilisation | prostate | |
| Female st | erilisation is pe | ermanent because | e the | |
| is cut. The | erefore an ovui | m (egg) and a | | do not |
| meet and | | cannot happ | en. | [3] |
| contracep | tion. | ome people do no | | |
| | | | | |
| 2 | | | | |
| | | | | |

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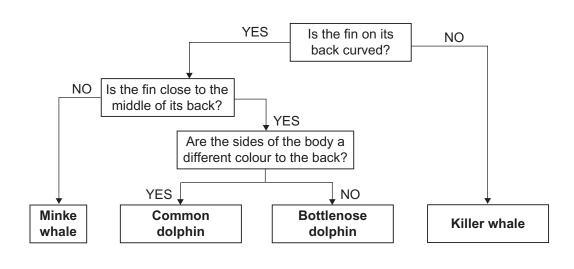
(Questions continue overleaf)

4 Shown below are pictures of whales and dolphins.



© Hebridean Whale and Dolphin Trust

(a) Identify the animals 1, 2, 3 and 4 using the classification key below.



2

3

4 _____

[3]

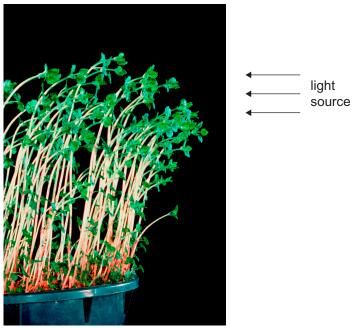
Examiner Only

| (b) | (i) | Complete the se | ntence below | | | | | Examine | |
|-----|------|------------------------|----------------|------------|---------------|-----------|-------|---------|--------|
| | | Choose from: | | | | | | Marks | Remark |
| | | boxes | features | diet | groups | areas | | | |
| | | Classification me | eans putting s | pecies ir | nto different | | | | |
| | | | according to | their | | | [2] | | |
| | (ii) | State one reaso | n why scientis | sts classi | fy organisms | 5. | | | |
| | | | | | | | _ [1] | | |
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| 5 | (a) | Name two parts of the body that act as barriers to microbes (microorganisms). | | Examin Marks | er Only Remark |
|---|-----|--|-----|-----------------|-------------------|
| | | | [2] | | |
| | (b) | The statements below give the steps the immune system takes to defend us against microbes, but they are not in the correct order. | | | |
| | | A – antibodies attach to the microbes' antigens | | | |
| | | B – microbes enter blood | | | |
| | | C – microbes clump together | | | |
| | | D – microbes are 'eaten' | | | |
| | | E – white blood cells produce antibodies | | | |
| | | Using the letters A, B, C, D and E put the steps in the correct order. | | | |
| | | The first one has been done. | | | |
| | | B | [2] | | |
| | (c) | Jilly has rubella (German measles). Suggest a reason why her doct has not given her antibiotics. | or | | |
| | | | [1] | | |
| | | | | | |
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6 The picture below shows cress plant seedlings.

| Examiner Only | | |
|---------------|--------|--|
| Marks | Remark | |
| | | |



© Jerome Wexler/Science Photo Library

| (a) | Name and fully explain the process that causes the seedlings to bend to one side. |
|-----|---|
| | |

[3]

(b) Photosynthesis is the process which enables plants to make food. In the box below write the word equation for photosynthesis.

[3]

(c) Name a process carried out by **both** plants and animals and state its function.

______[2]

7 (a) Below is a picture of bread and popcorn.





Describe an experiment to find which of these foods contains the most energy. All common laboratory equipment including thermometers and boiling tubes is available. Your answer should include how you make your results valid (fair test) and also reliable.

In this question you will be assessed on your written

| communication skills including the use of scientific terms. | | | |
|---|-----|--|--|
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| | [6] | | |

(b) A doctor has to decide which of three different brands of iron supplements (A, B or C) to prescribe to his patients. He collected facts about each brand and the table below shows his findings.

| Examiner Only | | |
|---------------|--------|--|
| Marks | Remark | |

[3]

Key

High = 3

Low = 1

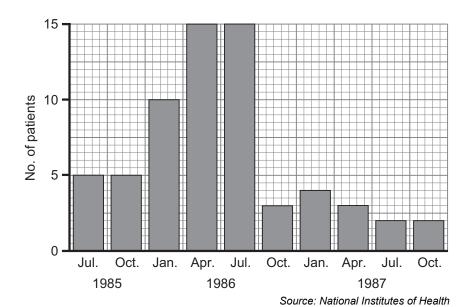
| Brand | Number of side effects | Swallowing problems | Cost per unit |
|-------|------------------------|---------------------|------------------|
| Α | 3 | 3 | 2 |
| В | 3 | 2 | 3 |
| С | 2 | 1 | 3 |

| (i) | Analyse the facts for each brand and state which one he should |
|-----|--|
| | prescribe. Referring to each brand fully explain your choice. |
| | |

| (ii) | Suggest one other fact about each brand that he should consider |
|------|--|
| | before making his decision. |

| | | Γ | 11 |
|--|--|---|----|
| | | | |

8 (a) The bar chart shows the number of patients who caught MRSA in a hospital between July 1985 and October 1987. Part of their treatment involved antibiotics.



(i) Suggest when the hospital started to take measures to control the spread of MRSA. Explain your answer.

[2]

(ii) What is the evidence in the graph that suggests that MRSA bacteria are resistant to antibiotics?

_____[1]

(b) (i) One of the measures to control the spread of MRSA is to put infected patients into isolation wards. Suggest a reason why this method is not widely used in hospitals.

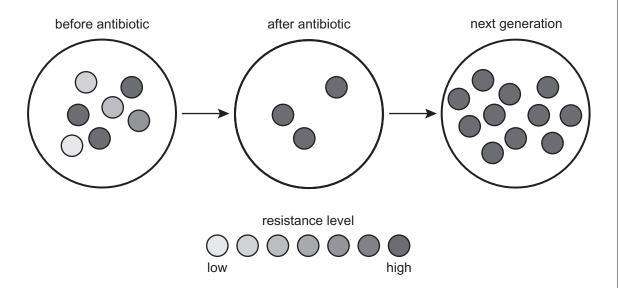
______[1]

| (ii) | Apart from isolation describe one measure that controls the spread of MRSA and suggest why it is effective. | | | | |
|------|--|--|--|--|--|
| | | | | | |
| | | | | | |
| | | | | | |

Examiner Only

Marks Remark

(c) MRSA is caused by a type of skin bacteria becoming resistant to antibiotics. The diagram below shows how this would have happened.



| skin bacteria became resistant. | explain how the population of |
|---------------------------------|-------------------------------|
| | |
| | |
| | |
| | [3] |

THIS IS THE END OF THE QUESTION PAPER

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