

Biology Transition Tasks

There is a lot of content to cover in A-level Biology, which means there is not time to recap GCSE work. A-level students need to make sure they arrive on Day 1 with a thorough knowledge of GCSE Biology. To aid you in this there are a series of higher level GCSE exam question below on topics that are critical to A-level success.

TASK: Complete the exam questions to the best of your ability (remembering to use scientific terms in your precise and detailed answers).

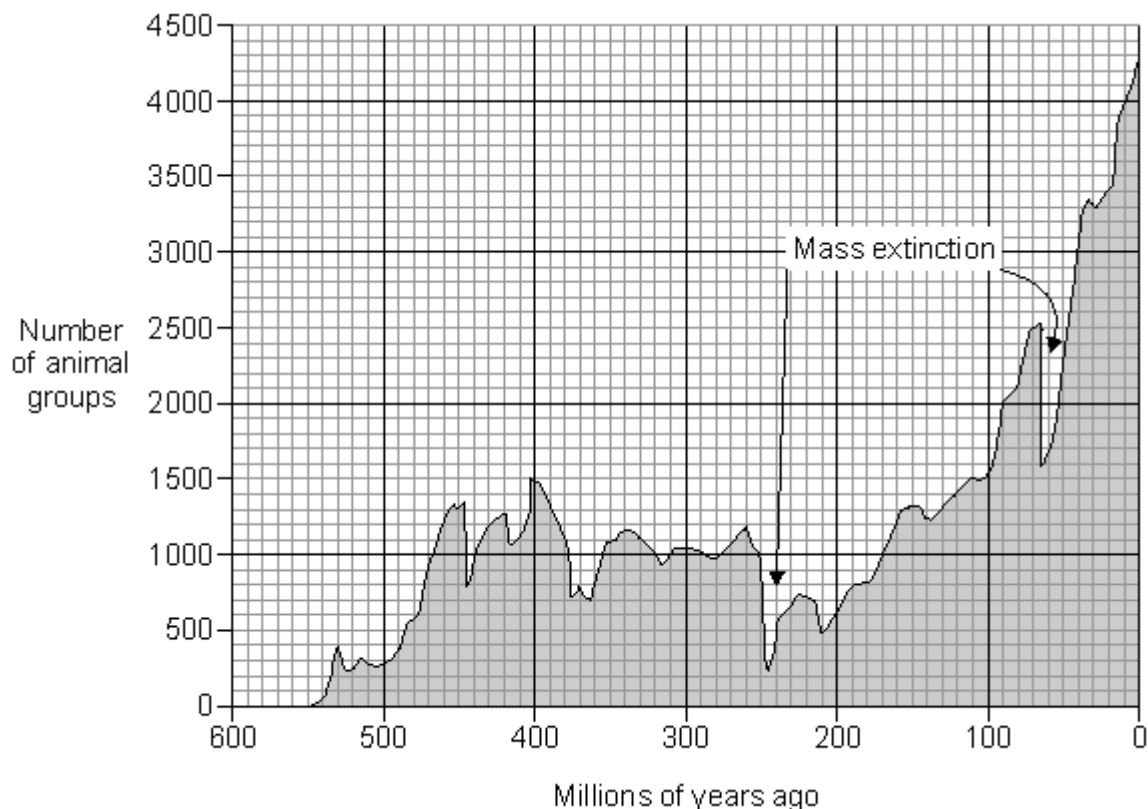
NB – This is not a test! Please use your books/internet to help you with any questions you find hard – the purpose of this is to help you update your GCSE knowledge.

MINIMUM EXPECTATIONS: **ALL** questions answered **IN FULL**.

EXAM QUESTIONS:

Q1. During evolution, many groups of animals have become extinct (died out).

(a) The graph shows how the number of animal groups has changed over time.



Harold L Levin, *The Earth Through Time*, © 2005,
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How has the number of animal groups changed between 200 million years ago and the present day?

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(b) *In this question you will be assessed on using good English, organising information clearly and using specialist terms where appropriate.*

Describe the different causes of the extinction of organisms.
Your description should include possible reasons for the mass extinctions shown on the graph.

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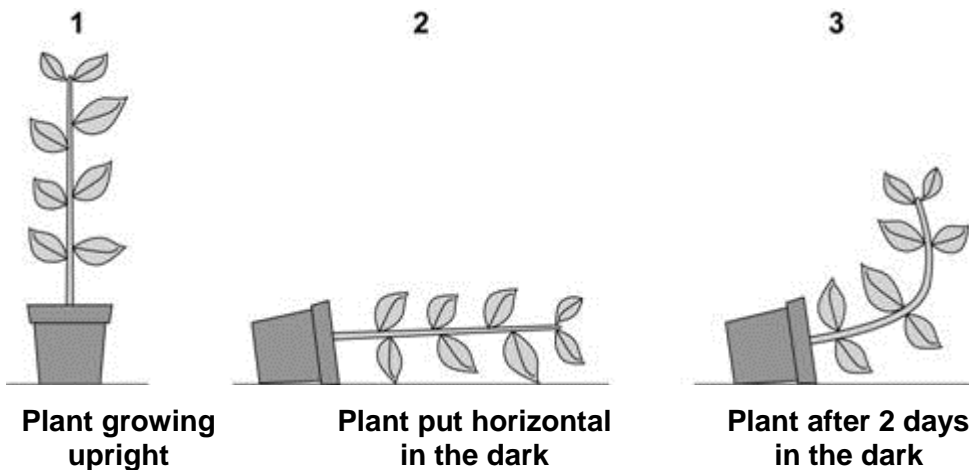
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(6)
(Total 7 marks)

Q2. A student grew a plant in an upright pot.
She then put the pot in a horizontal position and left the plant in the dark for two days.
Diagram **3** shows the potted plant after two days in the dark.



Explain fully why the plant responded in this way.

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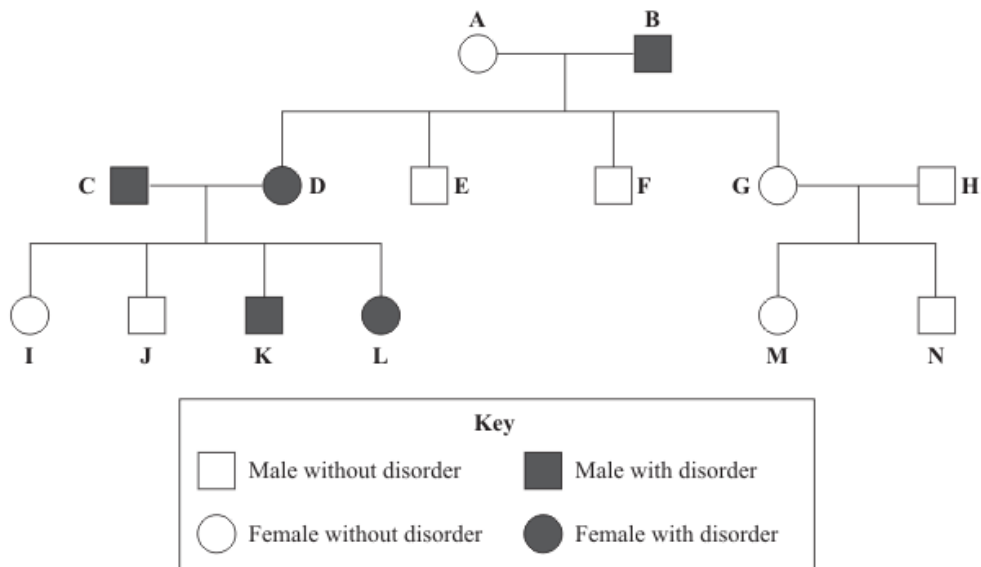
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(Total 4 marks)

Q3. The diagram shows a family tree in which some individuals have an inherited disorder, which may cause serious long-term health problems.



(a) What proportion of the children of **A** and **B** have the disorder?

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(1)

(b) Explain the evidence from the diagram which shows that the allele for the disorder is dominant.

Use the appropriate letters to identify individuals in your answer.

You may use genetic diagrams in your explanation.

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..... (3)

(c) (i) What is meant by 'embryo screening'?

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(1)

(ii) A doctor suggests that couple **C** and **D** should have their embryos screened but that couple **G** and **H** do **not** need this procedure.

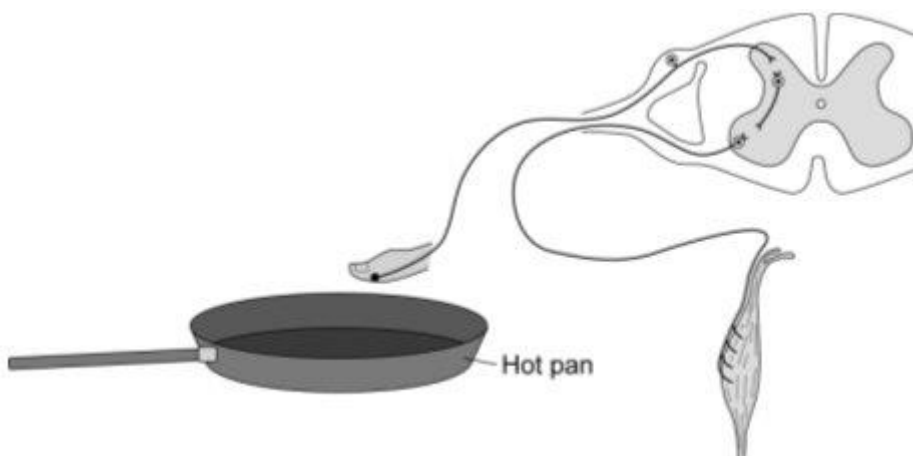
Explain the reasons for the doctor's suggestions.

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(3)

(Total 8 marks)

Q4. A person accidentally touches a hot pan.
 Her hand automatically moves away from the pan.
 The diagram shows the structures involved in this action.



(a) Describe fully how the structures shown in the diagram bring about this reflex action.

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(6)

(b) (i) The nerve pathway in this reflex action is about 1.5 metres in length. A nerve impulse travels at 75 m s^{-1} .

Use this information to calculate the time taken for this reflex action to occur.

Show clearly how you work out your answer.

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Time intervals s

(2)

(ii) The actual time interval is longer than the interval you have calculated in part (i).

Suggest an explanation for the difference.

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(1)
(Total 9 marks)

Q5. During exercise an athlete's core body temperature may rise.

(a) What causes this rise in core body temperature?

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(1)

(b) During a long race one athlete did not drink any liquid. Towards the end of the race the amount of sweat he produced began to fall.

(i) This athlete's core body temperature increased more than that of other similar athletes who had drunk enough liquid during the race.

Explain why.

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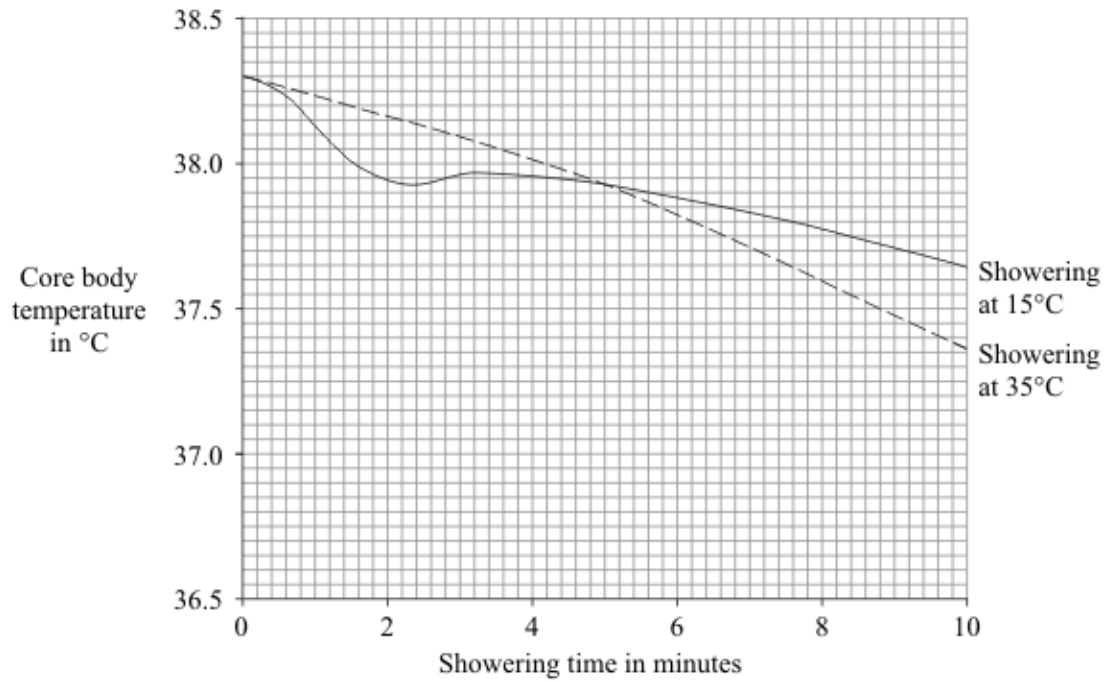
(2)

(ii) Describe **one** other way in which this athlete's body would respond in order to reduce core body temperature.

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(2)

(c) The graph shows the effects of showering for ten minutes at 15 °C and at 35 °C on core body temperature after a long race.



Suggest an explanation for the differences in core body temperature:

- (i) between 0 and 2 minutes

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(1)

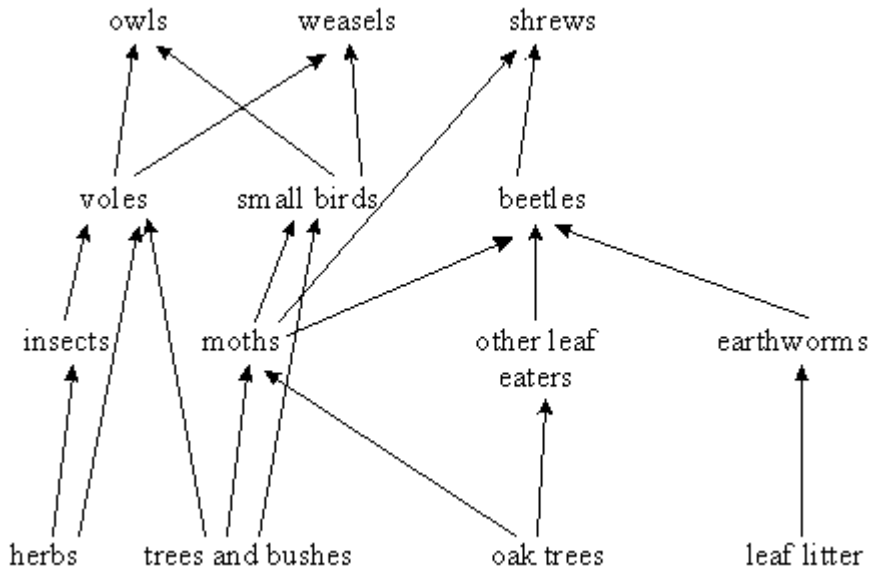
- (ii) between 4 and 10 minutes.

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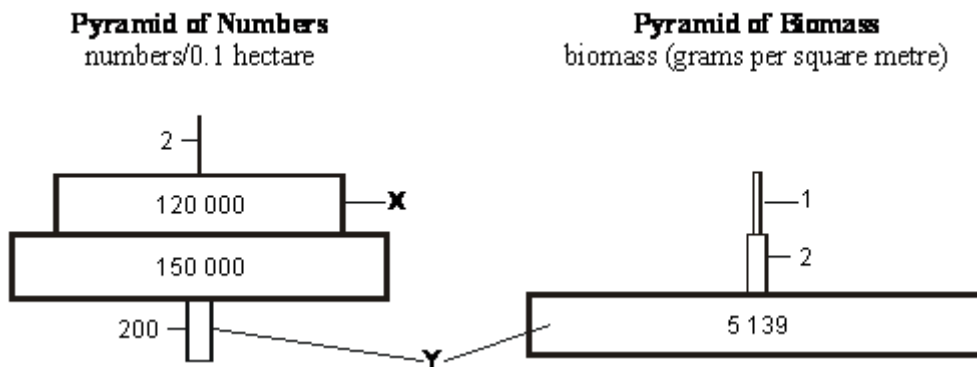
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(Total 8 marks)

Q6. The diagram below shows a food web for a wood.



(a) The diagrams below show a pyramid of the numbers and a pyramid of the biomass for 0.1 hectare of this wood.



(i) Name **one** organism from the level labelled X.

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(1)

(ii) Explain, as fully as you can, why the level labelled Y is such a different width in the two pyramids.

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(3)

(b) Explain, as fully as you can, what eventually happens to energy from the sun which is captured by the plants in the wood.

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(10)
(Total 14 marks)