

# AQA GCSE Biology

## Paper 2: Homeostasis & Response, Inheritance, Variation & Evolution, Ecology

Foundation Tier — Separate Science · Time: 1 hour 45 minutes · Total: 100 marks

Foundation Tier — Separate Science

<b>Name:</b>	
<b>Centre number:</b>	<b>Candidate number:</b>

- Answer **ALL** questions.
- Use black ink or black ball-point pen.
- Write your answers in the spaces provided.
- The marks for questions are shown in brackets.
- Total marks: 100

### Question 1

**(a)** Which hormone lowers blood glucose concentration after a meal?

[1 mark]

Tick **ONE** box.

- A. Glucagon
- B. Adrenaline
- C. Insulin
- D. Oestrogen

**(b)** Which of the following correctly describes osmosis?

[1 mark]

Tick **ONE** box.

- A. Movement of all particles from high to low concentration
- B. Movement of water from low to high concentration through a membrane
- C. Movement of water from high to low water potential through a partially permeable membrane
- D. Movement of glucose molecules through a cell membrane

**(c)** What is the role of decomposers in the carbon cycle?

[1 mark]

Tick **ONE** box.

- A. They absorb CO<sub>2</sub> from the atmosphere
- B. They break down dead organisms, releasing CO<sub>2</sub>
- C. They fix nitrogen from the atmosphere
- D. They produce oxygen by photosynthesis

**(d)** Which of the following is a recessive genetic disorder?

[1 mark]

Tick **ONE** box.

- A. Polydactyly
- B. Cystic fibrosis
- C. Huntington's disease
- D. None of the above

Total for Question 1

### Question 2

*The nervous system allows the body to respond to changes in the environment.*

**(a)** Name the THREE types of neurone in a reflex arc and state the function of each.

[3 marks]

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**(b)** A reflex action is faster than a voluntary action. Explain why.

[2 marks]

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**(c)** State the role of a synapse in the nervous system.

[2 marks]

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Total for Question 2

### Question 3

*The pancreas controls blood glucose concentration through the release of hormones.*

**(a)** Describe what happens in the body after blood glucose concentration rises following a meal. Name the hormone involved.

[4 marks]

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(b) Compare Type 1 and Type 2 diabetes. Give TWO differences.

[3 marks]

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Total for Question 3

#### Question 4

*Cystic fibrosis is an inherited disorder caused by a recessive allele (f).*

(a) What does the term "recessive allele" mean?

[1 mark]

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(b) Two carrier parents ( $Ff \times Ff$ ) have a child. Draw a Punnett square and calculate the probability that the child will have cystic fibrosis.

[3 marks]

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(c) A carrier of cystic fibrosis does not show any symptoms. Explain why.

[2 marks]

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Total for Question 4

#### Question 5

*Evolution is the change in inherited characteristics of a population over many generations.*

(a) Describe how natural selection leads to a population becoming better adapted to its environment over many generations.

[5 marks]

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(b) Give TWO types of evidence that scientists use to support the theory of evolution.

[2 marks]

Total for Question 5

### Question 6

*A woodland ecosystem contains plants, rabbits and foxes.*

(a) Write a food chain for the woodland ecosystem. Use the organisms listed above.

[1 mark]

(b) The fox population in the woodland increases. Predict and explain what will happen to the rabbit population.

[3 marks]

(c) Explain the role of decomposers in a woodland ecosystem.

[3 marks]

(d) State THREE consequences of deforestation for the environment.

[3 marks]

