AQA GCSE Biology

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

Foundation Tier — Combined Science · Time: 1 hour 15 minutes · Total: 70 marks

Foundation Tier — Combined Science

Name:	
Centre number:	**Candidate number:**

- 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: 70

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■ from the atmosphere
- ☐ B. They break down dead organisms, releasing CO■
- ☐ 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]

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

[2 marks]

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

[2 marks]

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]

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

[3 marks]

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]

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

[3 marks]

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

[2 marks]

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]

(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]

Total for Question 6

Question 7

(a) Describe how the body maintains a constant core temperature. Include in your answer what happens when the body gets too hot and what happens when it gets too cold.

[6 marks]

Total for Question 7

END OF QUESTIONS · Total marks: 47