Inheritance, variation and evolution

Biology Paper 2 | 5 questions, 6 marks each

GCSE science 6-mark questions

This topic online

Name: _____ **Date:** _____ **Score:** _____ **/ 30**

Plan before you write: jot down the 6 or more ideas you need, then put them in a sensible order. For compare questions give both sides of each point; for evaluate questions use the information and finish with a conclusion.

1 Strawberry plants can reproduce sexually using flowers and seeds. They can also reproduce asexually by growing runners, which are side shoots that put down roots and form new plants.

Compare sexual and asexual reproduction in strawberry plants. (6 marks)

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2 Cystic fibrosis is caused by a recessive allele, f. The dominant allele is F.

Sophie and Ravi do not have cystic fibrosis. Their first child, Ellie, has cystic fibrosis.

Use this information to work out the genotypes of Sophie and Ravi. Draw a Punnett square to find the probability that their next child will have cystic fibrosis, and the probability that the next child will be a carrier.

(6 marks)

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3 **Higher tier**

Before genetic engineering, insulin for people with diabetes was extracted from the pancreases of pigs and cattle. Today, most insulin is made by genetically modified bacteria.

Describe the main steps used to produce bacteria that make human insulin. (6 marks)

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4 On a group of islands, two species of lizard live on separate islands. Scientists think both species evolved from one population of lizards that lived on a single island. Rising sea levels later split this island into two.

Explain how the two separate species could have evolved.

Separate science only

(6 marks)

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5 A dairy farmer in Devon wants to increase the amount of milk her herd produces. She reads the following.

Breed	Mean milk yield in litres per year	Information
Selectively bred high-yield breed	9500	Bred for many generations for milk. More likely to have foot and fertility problems.
Traditional breed	5500	Hardy, lives longer, copes well outdoors.

Evaluate the use of selectively bred cattle for her farm. Give a justified conclusion. (6 marks)

End of questions | Total 30 marks

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