OCR GCSE 21ST CENTURY BIOLOGY B · J257

BIOLOGY



EXAM QUESTION PACK

B3.4 HOW ARE POPULATIONS AFFECTED BY CONDITIONS IN AN ECOSYSTEM? (HIGHER)

SCORE	PERCENTAGE
/37	%

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1. Vegetation in stable ecosystems such as rainforests has several important jobs.

Put ticks (✓) in the boxes next to the **three** jobs done by the vegetation.

prevents soil erosion	☐
causes water to run off the land	☐
prevents light from reaching the ground	☐
stops nutrients from soaking into the soil	☐
stops fires from spreading	☐
prevents extremes of temperature	☐
causes cloud formation	☐

[3]

2(a). Humans depend on rainforests for ecosystem services.

Apart from wood for timber, write down **three** other examples of ecosystem services.

1 _____

2 _____

3 _____

[3]

(b). All ecosystems such as rainforests produce waste.

Write down **two** examples of waste produced by a natural ecosystem.

1 _____

2 _____

[2]

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3. The rainforests are a valuable resource for everyone.

Timber is harvested from rainforests by local people.

Describe the impact of removing timber from the rainforests and explain why many people feel that this should be done in a sustainable way.
You should consider the needs of different groups of people in your answer.



The quality of written communication will be assessed in your answer.

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[6]

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4(a). Farmers use fertilisers. Some fertilisers contain nitrates.

Fertilisers can cause eutrophication in ponds and rivers.

The table shows dissolved oxygen and nitrate levels in two different ponds **A** and **B**.

	Pond A	Pond B
dissolved oxygen mg/l	2	13
dissolved nitrates mg/l	61	8

Explain what *eutrophication* is and how it is caused.

You must refer to data in the table to help you answer the question.

The quality of written communication will be assessed in your answer.

[6]

(b). Farmers also use pesticides.

Read the newspaper article.

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Scientists develop new pesticide

Scientists have developed a new and safer pesticide.

Farmers must make sure that the level of the pesticide in their crops does not exceed a certain amount.

Protestors say that pesticides should never be used on food crops because it is a risk.

(i) Suggest a risk that the protestors are worried about.

[1]

(ii) What **two** factors need to be considered when assessing just how big the risk is?

1

2

[2]

(iii) Suggest **two** reasons why people are willing to accept this risk.

1

2

[2]

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5. Suggest **two** conclusions that Joe could make from the data in the table.

1

2

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[2]

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6. A group of students are doing fieldwork.

Anton wants to find out if the amount of light affects the distribution of plants.

He does this by comparing the plants growing in the middle of a field with those growing under a hedge surrounding the field.

Explain how he will use a quadrat, light meter and identification key to do his investigation.



The quality of written communication will be assessed in your answer.

[6]

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7. A student is carrying out a field investigation to determine the population of woodlice in the school's wildlife garden.

Describe a method the student could use to determine the population size of woodlice.

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[4]

END OF QUESTION PAPER

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