

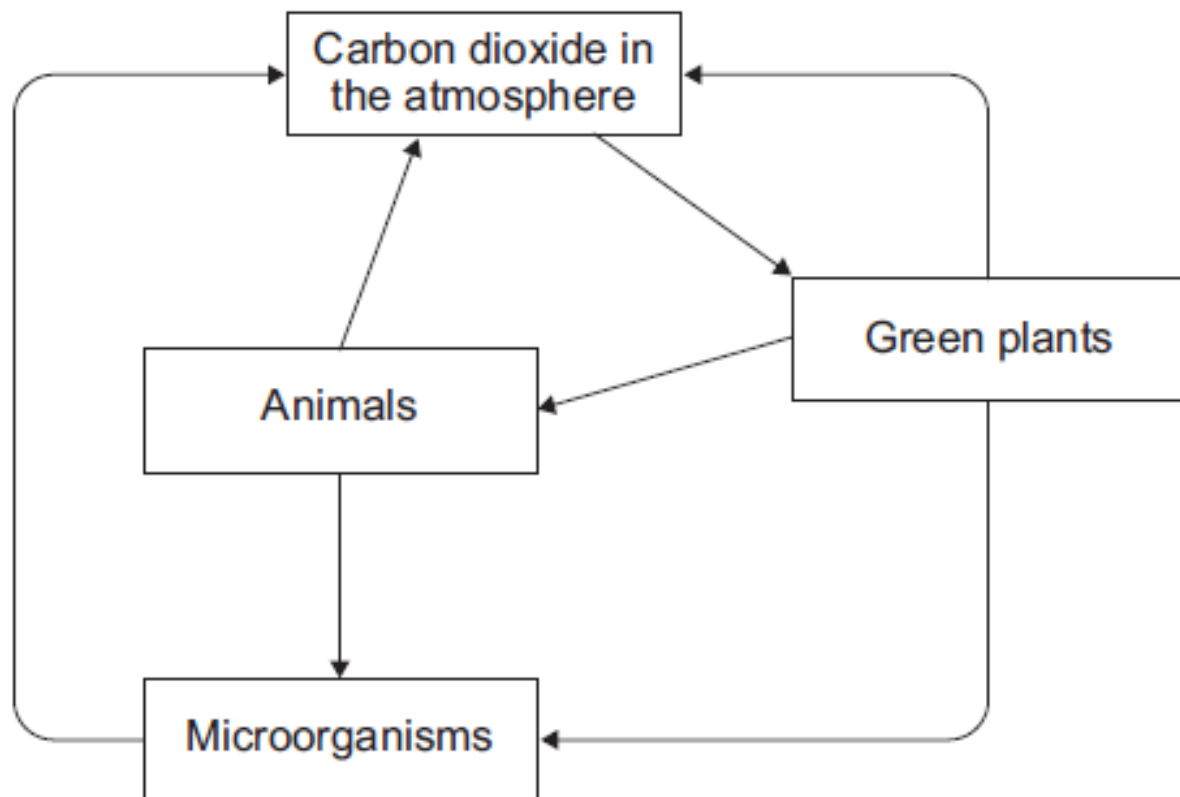
How do we answer a 6 mark question?

1. Underline the command word
2. Make bullet points of all things it ask you to look at, or points out
3. Write this in a paragraph, comparing is necessary

3

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

The diagram shows part of the carbon cycle.



Describe how living things are involved in the constant cycling of carbon.

.....

0 marks	Level 1 (1-2 marks)	Level 2 (3-4 marks)	Level 3 (5-6 marks)
No relevant content.	For at least one process either the organism that carries it out or the carbon compound used or the carbon compound produced is described or for at least one organism either the carbon compound it uses or the carbon compound it produces is described or at least one process is named	For some processes (at least one of which is named) either the organisms involved or the carbon compounds used or the carbon compounds produced are described	For at least one named process an organism and either the carbon compound used for the process or the carbon compound produced by the process are described and for other processes (at least one of which is named) either the organism or the carbon compounds used or the carbon compounds produced are described (as in Level 2)

examples of biology points made in the response:

- (green) plants photosynthesise
- photosynthesis takes in carbon dioxide
- (green) plants use carbon to make carbohydrate / protein / fat / organic compounds / named (e.g. enzymes / cellulose)
- animals eat (green) plants (and other animals)
- (green) plants respire
- animals respire
- respiration releases carbon dioxide
- (green) plants and animals die
- microorganisms decay / decompose / rot / break down / feed on dead organisms
- microorganisms respire

3

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

Plants and animals have become adapted in many different ways to reduce the risk of being eaten by predators.

Describe these adaptations.

Give examples of animals and plants adapted in the ways you describe.

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0 marks	Level 1 (1-2 marks)	Level 2 (3-4 marks)	Level 3 (5-6 marks)
No relevant content.	There is at least one example of an adaptation of either an animal or a plant. However it may not be clear how the adaptation helps the organism to avoid being eaten.	There is a description of an adaptation of at least one animal and at least one plant. It is clear how at least one of these adaptations helps the organism to avoid being eaten.	There are clear and detailed descriptions of a range of adaptations of named animals and named plants. It is clear how most of these adaptations help the organisms to avoid being eaten.

examples of clear and detailed biology points made in response:

- **camouflage** – the method of camouflage should be described plus a statement that the predator is less likely to see the prey
- **mimicry / warning colouration** – the method should be described plus a statement that the predator is likely to confuse the prey with e.g. a poisonous organism
- **thorns / prickles / spines / horns** – a statement that these are sharp and are likely to hurt a predator
- **long limbs / streamlining** – a statement that these increase speed and make it more likely that prey will outrun predator
- **bad taste / poison** – a statement that predator will find this unpleasant and ‘spit out’ prey / not attack same prey again
- **large ears / position of eyes** – a statement that predators will be detected earlier so the prey can escape sooner

Total		6
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3 A student is given a tube containing a liquid nutrient medium. The medium contains one type of bacterium.

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

The student is told to grow some of the bacteria on agar jelly in a Petri dish.

Describe how the student should prepare an uncontaminated culture of the bacterium in the Petri dish.

You should explain the reasons for each of the steps you describe.

0 marks	Level 1 (1-2 marks)	Level 2 (3-4 marks)	Level 3 (5-6 marks)
No relevant content.	There is a brief description of at least one of the stages (pre-inoculation, inoculation, post-inoculation).	There is a simple description of at least two stages and an explanation of at least one of them.	There is a clear description of all three stages and an explanation of at least two of them.

examples of biology points made in the response:

Pre-inoculation

- Petri dish and agar sterilised before use
- to kill unwanted bacteria
- inoculating loop passed through flame / sterile swab
- to sterilise / kill (other) bacteria

Inoculation

- loop/swab used to spread/streak bacterium onto agar

allow other correct methods, eg bacterial lawns

- lid of Petri dish opened as little as possible
- to prevent microbes from air entering

Post-inoculation

- sealed with tape
- to prevent microbes from air entering
- incubate
- to allow growth of bacteria

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

Animals and plants have features (adaptations) that allow them to survive in the conditions in which they normally live.

Describe how animals and plants are adapted to survive in dry conditions such as deserts.

For each adaptation that you give, describe how the adaptation helps the animal or plant to survive in dry conditions.

To obtain full marks you should refer to **both** animals and plants.

[6 marks]

No relevant content.	At least one way in which animals and / or plants are adapted to survive.	A description of ways in which animals and / or plants are adapted and an attempt to link at least one adaptation to how it increases the chance of survival.	A description of ways in which animals and plants are adapted and a description of how at least one adaptation increases the chance of survival.
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examples of biology points made in the response:

(animals)

- (A) change / decrease in surface area / example
 - (decrease in surface area which) reduces area from which sweat / water may be lost
- (A) hump with fat / fat stores
 - (fat in hump) to convert to water (via respiration)
- (A) long eyelashes
 - (long eyelashes) to keep (wind-blown) dust out of eyes
- (A) nocturnal / 'keep out of the sun'
 - reduce sweat loss (in heat of the day)

(plants)

- (A) decrease in surface area
- (A) leaves are spikes
 - (reduced area / leaves are spikes) reduces water loss / transpiration / evaporation
- (A) long / wide spread / extensive roots
 - (long / wide spread / extensive roots) to absorb (more) water

extra information

allow adaptations of specific animals to living in specified dry conditions, eg a desert

- (A) change / increase in surface area / example
 - (increase in surface area which) increases area heat may be lost from (by radiation)
- (A) changes to thickness of insulating coat
 - (thicker coat on upper surface) increases insulation from sun's heat
- (A) thin (layer) / reduced amount of body fat
 - (reduced amount of body fat which) reduces insulating layer
- (A) wide feet
 - (wide feet) to reduce pressure / spread weight / prevent sinking

allow adaptations of specific plants to living in specified dry conditions, eg a desert

- (A) thick wax
 - (thick wax) to reduce evaporation / water loss / transpiration
- (A) few(er) stomata
 - (few stomata) to reduce evaporation

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

Plants respond to different environmental factors.

Describe how different environmental factors affect:

- the direction of growth of roots
- the direction of growth of shoots.

In your answer you should refer to the role of plant hormones.

Do **not** refer to the artificial use of plant hormones by gardeners or scientists.

[6 marks]

0 marks	Level 1 (1–2 marks)	Level 2 (3–4 marks)	Level 3 (5–6 marks)
No relevant content.	Reference to at least one environmental factor plants respond to or at least one response or a named hormone	Reference to at least one environmental factor plants respond to and at least one associated response or reference to a named hormone and at least one associated response	Reference to at least one environmental factor plants respond to and at least one associated response and reference to a named hormone

<p>examples of biology points made in the response:</p> <p><i>environmental factors</i></p> <ul style="list-style-type: none"> • light • (direction of the force of) gravity • moisture / water <p><i>effects on direction of growth</i></p> <ul style="list-style-type: none"> • shoots grow upwards • shoots grow towards light • shoots grow against (the force of) gravity • roots grow downwards • roots grow towards moisture • roots grow towards (the force of) gravity <p><i>hormone</i></p> <ul style="list-style-type: none"> • reference to auxin • unequal distribution of hormone causes unequal growth (rates) 	<p>extra information</p> <p>allow phototropism allow gravi/geotropism allow hydrotropism</p> <p>allow reference to 'positive' and 'negative' in terms of tropisms as indicating direction of growth</p> <p>allow other named hormone(s) allow higher concentration of hormone causes faster growth in shoots allow higher concentration of hormone causes slower growth in roots</p>
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