

Full Higher Separate content. ★ = Higher Tier. ◆ = Separate Science only.

Q1. Describe the carbon cycle. Which process removes CO₂ from the atmosphere? Name THREE processes that return it.

[4 marks]

★ HIGHER TIER

Q2. ★ Describe the nitrogen cycle. Name four types of bacteria and their roles.

[4 marks]

Q3. Describe the stages of eutrophication. What causes it?

[3 marks]

Total: 11 marks

Q1 (4 marks)

Describe the carbon cycle. Which process removes CO₂ from the atmosphere? Name THREE processes.

- Only PHOTOSYNTHESIS removes CO₂ [1]
- Respiration [1]
- Decomposition [1]
- Combustion [1]

Q2 (4 marks) [★ HT]

★ Describe the nitrogen cycle. Name four types of bacteria and their roles.

- Nitrogen-fixing bacteria: N₂ → ammonia/nitrates [1]
- Nitrifying bacteria: ammonia → nitrates [1]
- Decomposers: dead matter → ammonia [1]
- Denitrifying bacteria: nitrates → N₂ [1]

Q3 (3 marks)

Describe the stages of eutrophication. What causes it?

- Fertiliser run-off → algal bloom on water surface [1]
- Algae block light → aquatic plants die → decomposing bacteria use O₂ [1]
- O₂ depleted → fish and aquatic organisms suffocate [1]