Higher Combined version — Higher Tier (★) included; Separate-only (◆) removed.

Q1. Describe the carbon cycle. State which process removes CO■ from the atmosphere and THREE processes that return it.

[4 marks]

Q2. Explain why burning fossil fuels causes a net increase in atmospheric CO■, while burning wood from sustainably managed forests does not.

[3 marks]

★ HIGHER TIER

Q3. ★ Explain what is meant by a carbon sink and give TWO examples.

[2 marks]

Total: 9 marks

The Carbon Cycle

Q1 (4 marks)

Describe the carbon cycle. State which process removes CO■ from the atmosphere and THREE p…

- Only photosynthesis removes CO■ from the atmosphere [1]
- Respiration (in all organisms) returns CO■ [1]
- Decomposition: decomposers break down dead matter, respiring and releasing CO■ [1]
- Combustion: burning fossil fuels or wood releases stored carbon as CO■ [1]

Q2 (3 marks)

Explain why burning fossil fuels causes a net increase in atmospheric CO■, while burning w…

- Fossil fuels: carbon was fixed millions of years ago — releasing it is a net addition to the cycle [1]
- Burning releases this ancient carbon faster than natural processes can reabsorb it [1]
- Sustainable forests: new trees planted absorb CO■ as they grow — approximately carbon neutral over time [1]

Q3 (2 marks) [★ HT]

★ *Explain what is meant by a carbon sink and give TWO examples.*

- A reservoir that absorbs more carbon than it releases [1]
- Examples: oceans (CO■ dissolves in seawater) / forests (trees absorb CO■ by photosynthesis) [1]