

2023 Ch H1 Q15

Section: Nature's Chemistry

Topic: Oxidation of Food

Question Summary

A step in the synthesis of vitamin B₃ is shown (structural change of a compound). What name is given to this type of reaction?

- A: Condensation
- B: Hydration
- C: Reduction
- D: Oxidation

Worked Solution

The structural change shows the addition of oxygen to the molecule (a carbonyl group appears). Oxidation can be defined as:

- Addition of oxygen, or
- Removal of hydrogen, or
- Increase in oxidation state.

Here, oxygen is added to the molecule, so this step in the synthesis is an oxidation

reaction.

Final Answer

D — Oxidation

Revision Tips

- Oxidation = addition of O, removal of H, or increase in oxidation number.
- Reduction = removal of O, addition of H, or decrease in oxidation number.
- Condensation = joining of molecules with loss of H_2O .
- Hydration = addition of water to a molecule.