GCSE Chemistry B (Twenty First Century Science)

J258/02 Depth in chemistry (Foundation Tier)

Question Set 2

1 Nitrogen oxides are pollutant gases that are produced when coal burns in a power station

(a) **(i)** Nitrogen monoxide is one type of nitrogen oxide that is formed in a power station.

The reaction that forms nitrogen oxide can be shown in an equation.

nitrogen + ... → nitrogen monoxide

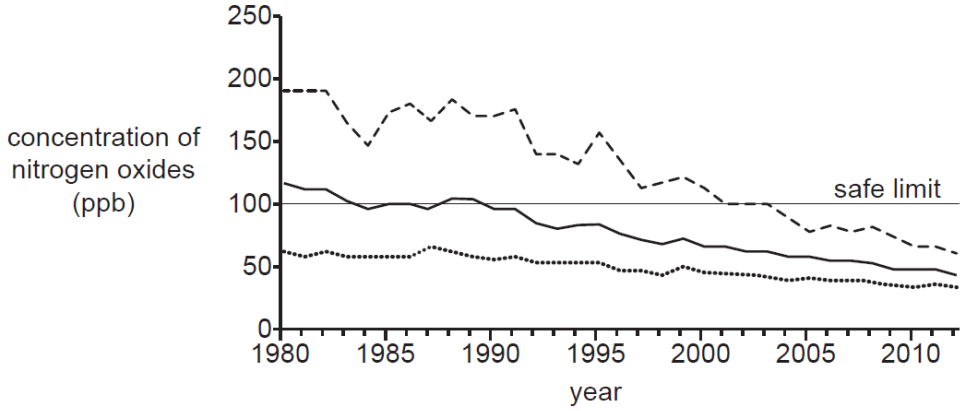
..... + O_2 → 2NO **[2]**

(ii) Which statements about nitrogen oxides are **true** and which are **false**?
Put a tick (✓) in one box in each row.

	True	False
Nitrogen oxides are also produced in car engines.		
Nitrogen oxides form at very high temperatures.		
NO_2 and NH_3 are examples of nitrogen oxides.		

[2]

(b) The graph shows information about the concentration in parts per billion (ppb) of nitrogen oxides in the air between 1980 and 2012.



Key
- highest daily concentration
- lowest daily concentration
- mean daily concentration

Describe how the **highest daily** concentration of nitrogen oxides changed between 1980 and 2012. **[2]**

(c) The World Health Organisation recommends a safe limit for people to be exposed to nitrogen oxides. They recommend that this limit is 100 ppb.

(i) Why is it necessary to set a safe limit for exposure to nitrogen oxides? **[1]**

(ii) Layla and Mia talk about the graph.

Layla says that the nitrogen oxides have been below the safe limit since 1990.
Mia says that nitrogen oxides have only been below the safe limit since 2004.

Explain how the graph could be used to support both of these ideas. **[2]**

Total Marks for Question Set 2: 9

Resource Materials

The Periodic Table of the Elements