

16 Oxides of nitrogen, NO_x , are involved in formation of photochemical smog and acid rain.

Which oxides of nitrogen are involved in each of these processes?

	photochemical smog		acid rain	
	NO	NO ₂	NO	NO ₂
A	✓	✓	✓	✓
B	x	✓	x	✓
C	✓	✓	x	✓
D	x	✓	✓	✓

24 Four reaction mixtures are listed.

- 1 $(\text{NH}_4)_2\text{SO}_4(\text{aq})$ and NaOH
- 2 $\text{NH}_4\text{Cl}(\text{aq})$ and $\text{Ba}(\text{OH})_2$
- 3 $\text{NH}_4\text{Cl}(\text{aq})$ and Na_2O
- 4 $(\text{NH}_4)_3\text{PO}_4(\text{aq})$ and HCl

Which reaction mixtures produce ammonia as a product?

- A** 1, 2 and 3 **B** 1 and 2 only **C** 2 and 3 only **D** 3 and 4 only

23 The oxides of nitrogen, NO and NO_2 , act as pollutants in the Earth's atmosphere in a number of different ways.

Three statements about the oxides of nitrogen are listed.

- 1 They react with oxygen and water vapour to form nitric acid, a constituent of acid rain.
- 2 They react with carbon monoxide to form photochemical smog.
- 3 They catalyse the oxidation of sulfur dioxide in the formation of sulfuric acid, another constituent of acid rain.

Which statements are correct?

- A** 1, 2 and 3 **B** 1 and 2 only **C** 1 and 3 only **D** 2 and 3 only

24 Which reagent, when mixed with ammonium sulfate and then heated, liberates ammonia?

- A** aqueous bromine
- B** dilute hydrochloric acid
- C** aqueous calcium hydroxide
- D** potassium dichromate(VI) in acidic solution