

Question 22 (Answer: **A**)

- An amphoteric oxide reacts with both acids and alkalis.
- Aluminium oxide and zinc oxide are the two common amphoteric oxides.
- Calcium oxide and copper(II) oxide are simply basic.

Question 21 (Answer: **C**)

- Phosphorus is a non-metal, so its oxide is a non-metal oxide.
- A solution of pH 1 is strongly acidic.
- So it is a non-metal oxide and acidic – metal oxides are basic.

Question 25 (Answer: **D**)

- Reacting with an alkali to give a salt and water is acidic behaviour.
- A metal oxide that does that as well as reacting with acids is amphoteric.
- Aluminium oxide is the amphoteric one; calcium and sodium oxides are purely basic.

Question 20 (Answer: **C**)

- Non-metal oxides are acidic; metal oxides are basic.
- CO₂, NO₂ and SO₂ are all oxides of non-metals.
- CaO and Na₂O are metal oxides, so any set containing them is not all acidic.

Question 20 (Answer: **D**)

- A non-metal oxide is acidic, so SO₂ is the acidic one.
- A Group I metal oxide is basic, so Na₂O is basic.
- Al₂O₃ reacts with both acids and alkalis, which makes it amphoteric.

Question 23 (Answer: **D**)

- A metal oxide is basic and a non-metal oxide is acidic.
- E is in Group I, so its oxide is basic; G is in Group VII, so its oxide is acidic.
- So one is basic and the other acidic – they cannot both be the same.