

Mixed question types

1 Explain why X reacts w/ ...

- Explain why K reacts w/ dilute acids.
- \therefore K reacts w/ water.
Range of metal reacting w/ acid > water
 \therefore K reacts w/ dilute acids

2 Explain which metal is more reactive

- Explain which is more reactive, K or Ag.
- K
To produce metal oxide, K doesn't require heat while Ag needs strong heating.

3 Arrange reactivities

- According to the following table, arrange reactivities of W, X, Y, Z ascendingly.

	W	X	Y	Z
+CuSO ₄ aq?	colourless gas bubbles	reddish brown solid deposits	no O.C.	no O.C.
heating	W ₂ O no O.C.	XO no O.C.	Y ₂ O silvery solid deposits	ZO no O.C.

- Y, Z, X, W
- (X, Y, Z) < W
W reacts w/ water, others do not
- (Y, Z) < X
X is a stronger reducing agent than Cu, others are not
- Y < Z
Y₂O decomposes and gives Y upon heating, ZO does not

4 Distinguishing oxides

- Distinguish CuO, Al₂O₃, PbO and Ag₂O experimentally.
- Heat directly \rightarrow the one w/ silvery solid depositing is Ag₂O.
Ag₂O has low thermal stability \rightarrow decomposes under heat, others do not
- Heat w/ H₂ \rightarrow the one w/ reddish brown solid depositing is CuO
Cu is a weaker reducing agent than H₂ \rightarrow \checkmark rx
Pb, Al is stronger reducing agents than H₂ \rightarrow X rx
- Heat w/ CO \rightarrow the one w/ silvery solid depositing is PbO.
Pb is a weaker reducing agent than CO \rightarrow \checkmark rx
Al is a stronger reducing agent than CO \rightarrow X rx
- Al can only be extracted by electrolysis of molten Al₂O₃.