9 Rusting and extraction – Part 2 — Answers

Answers

Work through these after trying the questions yourself.

9.1 Oxygen (from the air) and water.
9.2 Hydrated iron(III) oxide.
9.3 It acts as a barrier (keeps out air and water); and it gives sacrificial protection (the zinc corrodes instead of the iron).
9.4 Zinc is more reactive than iron, so it loses its electrons and corrodes first, protecting the iron even where the coating is scratched.
9.5 (a) by heating its ore with carbon (in a blast furnace) \ (b) by electrolysis.

9.6 Aluminium is **more** reactive than carbon, so carbon cannot remove the oxygen from its ore — electrolysis is needed. Iron is **less** reactive than carbon, so heating with carbon reduces it (carbon takes the oxygen), which is cheaper.