

**SALTERS ADVANCED CHEMISTRY**  
**"CHECK YOUR NOTES" : THE STEEL STORY**

1	The range of types, properties and uses of steel ( <b>Storyline SS1</b> and <b>SS2</b> ).	<input type="checkbox"/>
2	The importance of the composition of a steel in determining its properties ( <b>Activity SS2.5</b> ).	<input type="checkbox"/>
3	Redox processes that occur during steelmaking (including removal of sulphur and the reactions during the oxygen blow) ( <b>Storyline SS2</b> ; <b>Activities SS2.2-SS2.4</b> ).	<input type="checkbox"/>
4	How some substances appear coloured because they absorb radiation in specific parts of the visible spectrum.	<input type="checkbox"/>
5	The use of colorimetric measurements to determine the concentration of a coloured solution ( <b>Activity SS1.1</b> ).	<input type="checkbox"/>
6	The procedure for carrying out a simple redox titration involving manganate(VII) ions and how to work out the results ( <b>Activity SS1.2</b> ).	<input type="checkbox"/>
7	Transition metals are d-block elements that form one or more stable ions with incompletely filled d-orbitals.	<input type="checkbox"/>
8	Typical properties of transition metals in the first row of the d-block with particular reference to iron and copper; existence of more than one oxidation state for each element in its compounds, formation of coloured ions in solution, reactions with ligands to form complexes and reactions involving ligand substitution, catalytic behaviour of the elements and their compounds.	<input type="checkbox"/>
9	The reactions of $\text{Fe}^{2+}(\text{aq})$ , $\text{Fe}^{3+}(\text{aq})$ and $\text{Cu}^{2+}(\text{aq})$ ions with sodium hydroxide solution and ammonia solution ( <b>Activity SS5.3</b> ).	<input type="checkbox"/>
10	The variable oxidation states of transition metals in terms of electronic energy levels.	<input type="checkbox"/>
11	The catalytic activity of transition metals and their compounds in terms of variable oxidation states ( <b>Activity SS5.2</b> ).	<input type="checkbox"/>
12	The meaning of the terms: <i>ligand</i> , <i>complex/complex ion</i> and <i>ligand exchange</i> .	<input type="checkbox"/>
13	The formation of complexes in terms of bonding between ligands and the central metal ion.	<input type="checkbox"/>
14	The meaning of the term <i>polydentate</i> as applied to ligands, exemplified by $\text{edta}^{4-}$ .	<input type="checkbox"/>
15	The shapes of complexes with coordination numbers 4 and 6.	<input type="checkbox"/>
16	Ligand exchange reactions and stability constants.	<input type="checkbox"/>
17	Redox reactions of d-block elements in terms of electron transfer, and represented by (i) using half-equations for the oxidation and reduction reactions and (ii) combining half-equations to give the overall equation for the reaction.	<input type="checkbox"/>
18	The construction of simple electrochemical cells involving metal ion/metal half-cells based on different oxidation states of the same element in aqueous solution.	<input type="checkbox"/>
19	The meaning and use of the term: <i>standard electrode potential</i> ; how a standard electrode potential is measured.	<input type="checkbox"/>
20	The action of an electrochemical cell in terms of half-equations and external electron flow.	<input type="checkbox"/>
21	The use of standard electrode potentials to calculate $E_{\text{cell}}$ , and to predict the feasibility of redox reactions and the relative stability of oxidation states.	<input type="checkbox"/>
22	Rusting in terms of electrochemical processes involving iron and oxygen and subsequent reactions ( <b>Storyline SS3</b> ; <b>Activity SS3.4</b> ).	<input type="checkbox"/>
23	Approaches to corrosion prevention ( <b>Storyline SS3</b> ).	<input type="checkbox"/>
24	Issues in the recycling of iron ( <b>Storyline SS4</b> ).	<input type="checkbox"/>