

**SALTERS ADVANCED CHEMISTRY**  
**"CHECK YOUR NOTES" : MEDICINES BY DESIGN**

Print the list below and tick the box supplied when you have covered the topic in your notes. Most of the points are covered in the **Chemical Ideas**, with supporting information in the **Storyline** or **Activities**. However, if the main source of information is the **Storyline** or an **Activity**, this is indicated.

1	The chemical principles behind methods which can be used to detect ethanol in the body (g.l.c. and i.r. spectroscopy) ( <b>Storyline MD1; Activity MD1.2</b> ).	<input type="checkbox"/>
2	The following reactions involving aldehydes and ketones: formation by oxidation of alcohols, oxidation to carboxylic acids, reduction to alcohols and reaction with hydrogen.	<input type="checkbox"/>
3	The mechanism of the nucleophilic addition reaction between an aldehyde or a ketone and hydrogen cyanide.	<input type="checkbox"/>
4	The meaning of the terms: <i>drug, medicine, molecular recognition, pharmacological activity, pharmacophore, receptor site, agonist, antagonist, lead compound</i> ( <b>Storyline</b> in general).	<input type="checkbox"/>
5	The structure of a pharmacologically active material in terms of its functional components: pharmacore and groups which modify the pharmacore ( <b>Storyline MD3</b> ).	<input type="checkbox"/>
6	The action of biologically active chemicals and how this relates to their interaction with receptor sites.	<input type="checkbox"/>
7	The factors affecting the way that species interact in three dimensions: size, shape, bond formation and orientation ( <b>Storyline MD4</b> ).	<input type="checkbox"/>
8	The role of chemists in designing and making new compounds for use as pharmaceuticals ( <b>Storyline MD3, MD4 and MD5</b> ).	<input type="checkbox"/>
9	The role of computer modelling techniques in the design of medicines ( <b>Storyline MD4</b> ).	<input type="checkbox"/>
10	The identification of functional groups within a polyfunctional molecule as a way of making predictions about its properties.	<input type="checkbox"/>
11	How to devise synthetic routes for preparing organic compounds.	<input type="checkbox"/>
12	The use of the following terms to classify organic reactions: <i>hydrolysis, oxidation, reduction, condensation and elimination</i> .	<input type="checkbox"/>
13	The classification of organic reactions according to their reaction mechanisms: nucleophilic substitution, electrophilic addition, electrophilic substitution, nucleophilic addition and radical.	<input type="checkbox"/>
14	The use of a combination of spectroscopic techniques (m.s., i.r., n.m.r. and u.v. and visible) to elucidate the structure of organic molecules.	<input type="checkbox"/>