PR6

CHECK YOUR KNOWLEDGE AND UNDERSTANDING (PART 2)

This activity helps you check your knowledge and understanding of the topics that you have covered in Chemical Storylines PR3 to PR6.

Introduction

The checklist below covers the key points in **Chemical Storylines PR3** to **PR6**.

The statements listed correspond to learning outcomes in the specification for the AS examinations. They are listed in the order in which they occur in this module. Remember that you will be coming back to many of the ideas in later modules.

You will probably have made summary notes of the main ideas that you have met. Now is a good time to make sure that your notes cover all the points you need. If you feel that you are not yet able to meet the requirements of all of the statements in the list, you should look again at the areas concerned, seek help from your teacher if necessary and develop your notes accordingly.

Most of the points are covered in **Chemical Ideas**, with supporting information in **Chemical Storylines** or the activitites. However, if the main source of information is in a storyline or an activity this is indicated.

What you do

Read and think about each of the statements in the checklist. Put a tick in the column that best represents your current ability to do what is described:

A – I am confident that I can do this
B – I need help to clarify my ideas on this
C – I am not yet able to do this.

You will be sharing this information with your teacher so that you can work together to improve your understanding.

At the end of Chemical Storylines PR3 to PR6 you should be able to:	A	B	C
• explain how hydrogen bonds form, and describe and give examples of hydrogen bonding, including in water and ice			
• describe and explain the solubility of a dissolving polymer based on poly(ethenol) (or other polymers, given information) in terms of its molecular structure – insoluble when very many or very few internal hydrogen bonds; soluble when an intermediate number of hydrogen bonds **Activity PR4.5**			
• recognise members of the following homologous series – aldehydes, ketones, carboxylic acids			
• recall the difference between primary, secondary and tertiary alcohols from their structures, and identify examples of them			
• describe and explain the technique of heating under reflux for reactions involving volatile liquids **Activity PR4.3**			
• explain and use the term elimination reaction			
• describe and explain the following properties of alcohols: – oxidation of alcohols to carbonyl compounds (aldehydes and ketones) and carboxylic acids with acidified dichromate(VI) solution, including the importance of the condition (reflux or distillation) under which it is done – dehydration of alcohols to form alkenes using heated Al_2O_3 or refluxing with concentrated H_2SO_4 **Activity PR4.4**			
• use relevant given data to interpret (and make predictions of) infrared spectra for organic compounds containing a limited range of functional groups – hydroxyl, carbonyl and carboxylic acid groups			
• understand that every compound has a distinctive 'fingerprint' in its infrared spectrum **Activity PR5.2**			
• recognise where E/Z isomerism occurs, explaining it in terms of lack of free rotation about C=C bonds when there are two different groups on each carbon • draw and interpret diagrams to represent E/Z isomers for alkenes which have the same groups on both sides of the double bond (E – opposite sides of bond; Z – same side of bond) • in such molecules, describe 'E' as 'trans' and 'Z' as 'cis' and extend this cis-trans nomenclature to other, more complicated, alkenes **Activity PR5.1**			
• understand how the uses of a polymer are related to its properties, explaining given examples, and suggest uses for polymers based on their given properties **Chemical Storylines PR1 to PR5**			

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