SALTERS ADVANCED CHEMISTRY

"CHECK YOUR NOTES" : THE POLYMER REVOLUTION

1	The historical development of addition polymers; discovery of poly(ethene) (**Storyline PR2**), different kinds of poly(ethene), Ziegler-Natta catalysts (**Storyline PR3**), conducting and light-emitting polymers (**Storyline PR6**) and dissolving polymers (**Storyline PR5**).	☐
2	Some examples of polymers discovered by accident (**Storyline** in general).	☐
3	Use of the terms: *polymer, repeating unit* and *monomer*.	☐
4	The meaning of the term: *addition polymerisation*.	☐
5	Predicting the structural formula of the addition polymer formed from given monomer(s), and vice versa.	☐
6	The use of systematic nomenclature to name alkenes.	☐
7	Cis-trans (geometric) isomers.	☐
8	The addition reactions of alkenes with the following: bromine, hydrogen bromide, hydrogen in the presence of a catalyst, and water in the presence of a catalyst.	☐
9	The meaning of the terms: *addition* and *electrophile*.	☐
10	The mechanism of the electrophilic addition reaction between bromine and an alkene.	☐
11	Whether a molecule is polar or non-polar is determined by its shape and the polarity of its bonds.	☐
12	Description and examples of the following types of intermolecular forces: instantaneous dipole-induced dipole attractions, permanent dipole-permanent dipole attractions and hydrogen bonds.	☐
13	The principal features of the molecular structure of water: bonding and shape of the water molecule and hydrogen bonding in water and ice.	☐
14	Explanation of the properties of addition polymers and other substances in terms of intermolecular attractions.	☐
15	The meaning of the terms: *thermoplastic*, *thermoset* and *co-polymer*.	☐
16	Crystallinity in polymers.	☐
17	The relationship between the properties of addition polymers and aspects of their molecular structure: chain length, side-groups, chain branching, chain flexibility, cross-linking and stereoregularity.	☐
18	The relationship of the properties of a dissolving polymer to its molecular structure (**Storyline PR5**).	☐
19	The differences between primary, secondary and tertiary alcohols in terms of their structures.	☐
20	Recognition of members of the following homologous series: aldehydes, ketones, carboxylic acids.	☐
21	The characteristic properties of alcohols, including oxidation to carbonyl compounds and carboxylic acids, and dehydration to form alkenes.	☐
22	*The meaning of the term: elimination reaction.*	☐