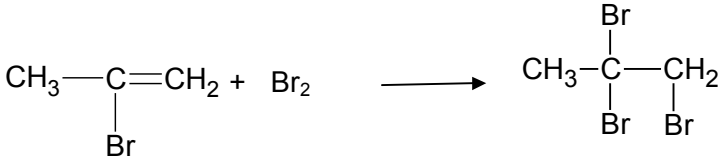
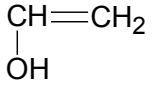
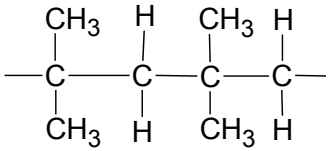
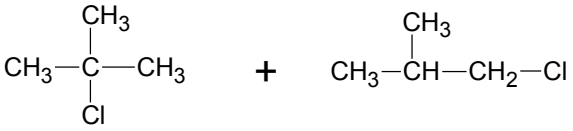
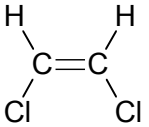
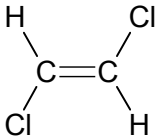
Assessment Schedule – 2006

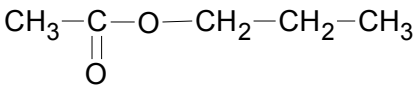
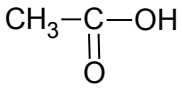
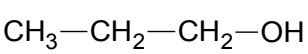
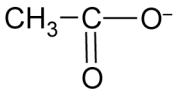
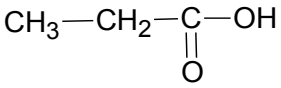
Chemistry: Describe the structural formulae and reactions of compounds containing selected organic functional groups (90309)

Evidence Statement

Q	Evidence	Achievement	Achievement with Merit	Achievement with Excellence
1(a)	$CH_3—CH=CH—CH_2—CH_3$	Three correct answers.		
(b)	$HO—CH_2—CH_2—CH_2—Cl$			
(c)	$CH_3—CH_2—CH_2—O—C(=O)—H$			
(d)	$CH_3—CH(CH_3)—CH(Br)—C(=O)—OH$			
2(a)	$CH_3—C(=O)—OH$ **OR** CH_3COOH **OR** CH_3CO_2H	Two correct answers.	Three correct answers.	
(b)	$CH_3—CH(Cl)—CH_2(Cl)$			
(c)	$CH_3—CH(OH)—CH(OH)—CH_2—CH_3$			
3(a)	circled one of the C=C, and the –OH	Two different functional groups circled or named.	Both functional groups circled and named.	
(b)	C=C alkene –OH hydroxyl or alcohol			

4(a)	A methylbutane or 2-methylbutane B 3–chlorobutan-2-ol C methyl ethanoate D 2–bromopropene E pentanoic acid	Three correct answers.	Five correct answers showing correct numbering of substituents.	
(b)	Secondary	Correct answer.		
(c)	When $Br_2(aq)$ is added to both substances: D – the orange colour of bromine disappears or goes from orange to colourless.  E – the orange colour remains as no reaction occurs.	One valid observation identifying one compound. **OR** Equation of addition reaction of bromine. **OR** Clear description of the difference in both reactions.	Observation for both compounds correct. **OR** One compound identified with observation and correct addition equation.	Both compounds clearly distinguished with valid observations, and correct equation.
5(a)(i) (ii)	 	One correct answer.	Two correct answers.	

(b)	 major product + minor product	One product correct.	Two products correct, with the major or minor products identified correctly.	
(c)	Conc. sulfuric acid / conc. H_2SO_4	Correct answer.		
6(a)	1,2–dichloroethene circled.			
(b)	 *cis* isomer  *trans* isomer	Both *cis–trans* isomers of 1,2–dichloroethene correctly drawn and identified	.	
(c)	*Cis–trans* (geometric) isomers exist where there is a C=C which cannot freely rotate. If there are two different groups bonded to the Cs of the double bond, two arrangements are possible. 1,2–dichloroethene meets these requirements since each C of the double bond has –H and –Cl, ie different groups. However, 1,1–dichloroethene does not meet these requirements since the two groups on the Cs of the double bond are the same, ie one C has two –H and the other two –Cl.	One general requirement described.	One general requirement linked to 1,2–dichloroethene and / or 1,1–dichloroethene.	Clear explanation of requirements for cis–trans isomers, and reference to both molecules.

7	A propyl ethanoate  B ethanoic acid  C propan–1–ol  D ethanoate ion  (sodium ethanoate) E propanoic acid 	Four correct structures or names.	Four correct structures and names.	All correct.

Judgement Statement

Chemistry: Describe the structural formulae and reactions of compounds containing selected organic functional groups (90309)

Achievement	Achievement with Merit	Achievement with Excellence
SEVEN questions answered correctly. Minimum of 7 × A	NINE questions answered correctly, including at least FIVE at Merit level. Minimum of 5 × M + 4 × A	TEN questions answered correctly, including at least FOUR at Merit level and at least TWO at Excellence level. Minimum of 2 × E + 4 × M + 4 × A