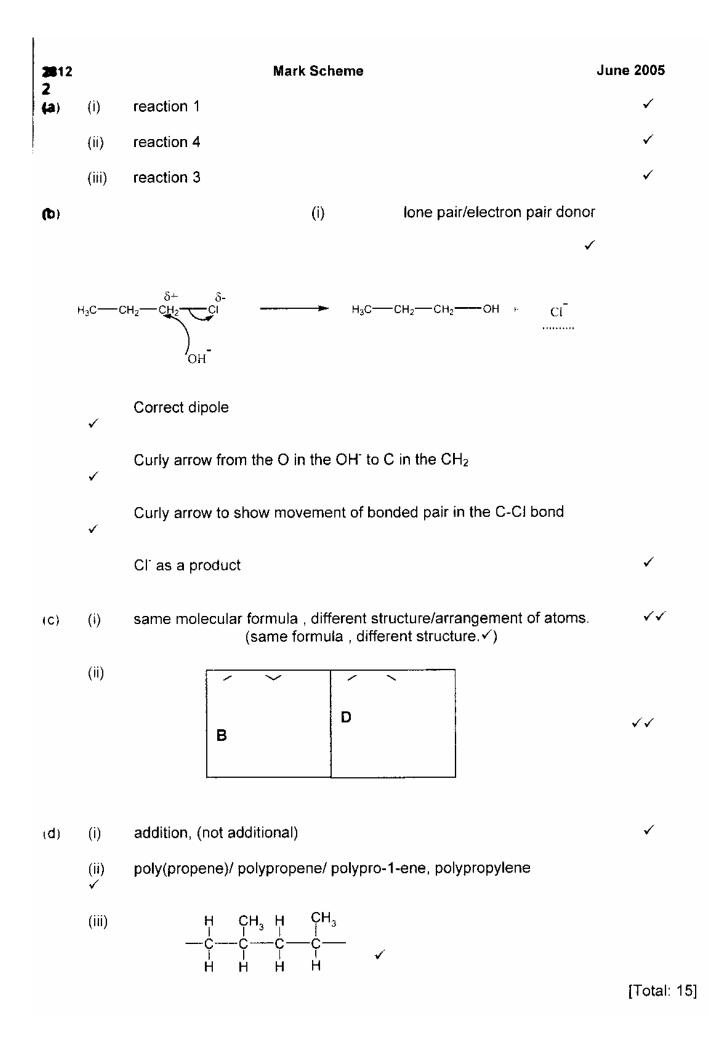
2812 1.		Mark Scheme June 2	2005
(a)		C ₆ H ₁₄	√
(b) (i)		boiling point increases with increase in M _R /molecular formula/N ^o of carbon atoms/chain length	4
(ii)		more intermolecular forces/electrons/surface area/	
		surface interactions/van der Waal forces	✓
(iii)		120 –130 °C	~
(c)(i)		$C_9H_{20} \longrightarrow C_7H_{16} + C_2H_4$	✓
(ii)		$C_2H_4 + H_2O \longrightarrow C_2H_5OH$	~
	4	temperature > 100 °C/ steam	
		phosphoric acid (catalyst)	~
(d)	(i)		V
		'4 /	
(ii)	85 –	98 °C	~
(e)		C_7H_{16} \sim $C_6H_{13}CH_3$ $+$ H_2 \checkmark	
		$ \left\{\begin{array}{c} H_2 \text{ as a product} \\ C_7H_{16} \longrightarrow & C_7U_{14} + H_2 \\ \downarrow & \downarrow & \\ \end{array}\right\} \text{ either of these scores 1 mark} $	
(45)		more officient fuel/better fuel/ bigber octane number/reduces knocking/mg	

(f) more efficient fuel/better fuel/ higher octane number/reduces knocking/more volatile/lower boiling points/burn better/burn more easily/quicker

[Total: 13]

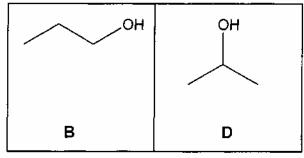


Question 2 c ii should be:-

Mark Scheme for Unit 2812/01, June 2005 - ERRATUM

See page 9 of the main booklet.

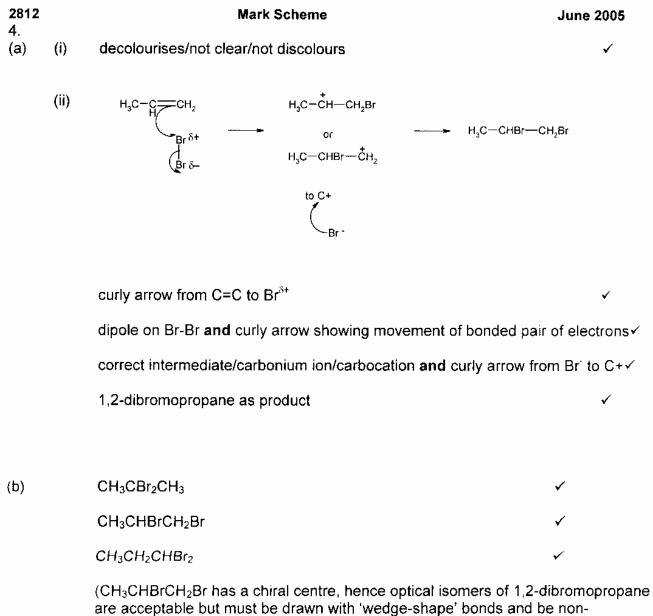
As part of the printing process, two boxes have become corrupted, these should be as shown below.



2812		Mark Sahama						
3.			ne 2005					
(a)	(i) ✓	prop-2-en-1-ol CH_2 =CHCH ₂ OH must show the C=C double bond						
		acrolein H ₂ C=CH-C						
		Н						
must clearly show the aldehyde group and the C=C \checkmark								
	(ii)	alkene/C=C double bond	✓					
(b)	(i)	acidified /H⁺	✓					
		dichromate/Cr ₂ O ₇ ²⁻	✓					
	(ii)	$\begin{array}{cccc} CH_2CHCH_2OH/\ C_3H_6O/\ C_3H_5OH &+ & [O] &\longrightarrow CH_2CHCHO/\ C_3H_4O/\\ && C_2H_3CHO &+ & H_2O\\ && \text{not}\ CH_2CHCOH \end{array}$	\checkmark					
(c)		acrylic acid	\checkmark					
		approx 1700 cm ⁻¹ (range 1650 – 1750) indicates C=O	✓					
		approx 3000 cm ⁻¹ (range 2500- 3300) indicates O-H	\checkmark					
		not 3230 – 3550 cm ⁻¹						
(d)	(i)	$CH_2CHCH_2OOCCHCH_2$ /($C_6H_8O_2$)	1					
		H ₂ O	\checkmark					
	(ii)	0						
	(ii)	Щ H₂C==CHСH2СH==−СH2 CH2						
		or						
		$H_2C = CH - CH_2 - O - C - CH = CH_2$						
		1 mark if the ester group. 1 mark for the rest of the molecule						

1 mark if the ester group, 1 mark for the rest of the molecule. COO/CO_2 without displaying the ester, they can still get 1 mark.

[Total: 13]



superimposable mirror images)

[Total: 8]

2812		Mark Scheme	June 2005					
5 (a)	Essential mai	ks:						
	<u>Order</u>	RI>RBr>RCI /owtte	\checkmark					
	reason for the	e order C-I bond weakest/length/C-CI bond strongest	\checkmark					
	an equation	and mention/intermolc forces loses the mark Ag ⁺ + X ⁻ → AgX (solid or ppt) or an equa hydrolysis/using OH ⁻ or H ₂ O	ation for ✓					
			max = 3					
Two possible methods of monitoring the reaction								
	Method 1	Method 2						
	AgNO₃	AgNO ₃	\checkmark					
	Ethanol & Waterbat	h/ NaOH/OH ⁻	✓					
	/hydroxide temp 40 – 80 °C not heat/not bunser	& neutralise with HNO_3						
	relative <u>rate</u> of precipitation	relative <u>amount</u> of precipitation	1					
(b)	Properties:							
		Non-toxic/harmless	✓					
		non-flammable	✓					
any tw	vo from:		$\checkmark \checkmark$					
(propellant in) aerosols		because it is volatile/ unreactive/ non-toxic/easily co	mpressed					
blowir	ng polystyrene	because it is unreactive						
dry cl	eaning	because it is a good solvent for organic material						
degre	asing agent	because it is a good solvent for organic material						
fire extinguishers		because it is non-flammable						
QWC	reasonable	spelling, punctuation and grammar throughout	✓ [Total:					

11]