



## ORGANIC SL PAPER 1A

1. B
2. B
3. C
4. D
5. B
  
6. B
7. C
8. C
9. B
10. C
  
11. B
12. B
13. B
14. A
15. C
  
16. A
17. A
18. A
19. A
20. A

## ORGANIC SL PAPER 1B

1. (a) Structural drawing of  $\text{CH}_3\text{COOCH}_2\text{CH}_3$  showing all C, H, O atoms and bonds (backbone of C-C-O-C-C) [1].

(b) Reagents (ethanol/ethanoic acid) are highly flammable [1]. A water bath prevents direct exposure to a flame and ensures even, controlled heating below the boiling point of the water [1].

(c) Acts as a catalyst / facilitates the removal of water to shift equilibrium right [1].

(d) Sweet or fruity smell / Formation of an oily top layer (immiscible) [1].

2. (a) Simple Distillation [1]. Ethanal has a significantly lower boiling point than the hydrogen-bonding alcohol and the ethanoic acid [1]. By applying specific heat, it vaporizes immediately upon creation and is condensed sequentially into the receiver, physically avoiding further oxidation [1].

(b) Ethanol /  $\text{C}_2\text{H}_5\text{OH}$  [1] and Acidified Potassium Dichromate(VI) ( $\text{K}_2\text{Cr}_2\text{O}_7 / \text{H}^+$ ) [1].

## ORGANIC SL PAPER 2

- (a) Hydrogen bromide (HBr) [1] at room temperature [1].  
(b) Nucleophilic substitution [1].  
(c) No reaction occurs / ketones cannot be oxidized further under these normal conditions [1].
- (a)  $\text{Cl}\cdot + \text{CH}_4 \rightarrow \text{HCl} + \text{CH}_3\cdot$  [1]  
 $\text{CH}_3\cdot + \text{Cl}_2 \rightarrow \text{CH}_3\text{Cl} + \text{Cl}\cdot$  [1] **[1]**  
(b)  $\text{CH}_3\cdot + \text{CH}_3\cdot \rightarrow \text{C}_2\text{H}_6$  (Ethane) [1].
- (a) 2,3-dibromobutane (drawing showing  $\text{CH}_3\text{CHBrCHBrCH}_3$ ) [1].  
(b) Orange/brown/yellow to colorless [1].  
(c) Hydrogen /  $\text{H}_2$  [1] and Nickel / Ni catalyst [1].
- (a) Proper drawing of Butan-1-ol showing OH on a terminal carbon [1]. Proper drawing of Butan-2-ol showing OH on carbon 2 [1]. All atoms must be expanded.
- (a) X-ray crystallography shows all 6 carbon-carbon bonds are exactly the same length [1], intermediate between a single and double bond, whereas Kekule's model predicts alternating short and long bonds [1].