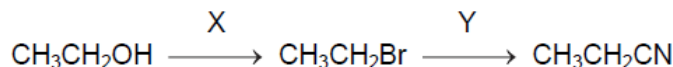


1. June/2022/Paper_11/No.26

Ethanol can be used to make propanenitrile in two steps.



What types of reaction are X and Y?

	X	Y
A	free-radical substitution	electrophilic substitution
B	free-radical substitution	nucleophilic substitution
C	nucleophilic substitution	nucleophilic substitution
D	nucleophilic substitution	electrophilic substitution

2. June/2022/Paper_11/No.33

17.6 g of pentan-1-ol is completely combusted.

Which volume of gaseous products is formed when measured at s.t.p.?

- A** 22.4 dm³ **B** 24.0 dm³ **C** 49.3 dm³ **D** 52.8 dm³

3. June/2022/Paper_11/No.34

Crotyl alcohol, CH₃CH=CHCH₂OH, is a colourless liquid which is used as a solvent.

Crotyl alcohol will react separately with Br₂, K₂Cr₂O₇/H⁺, conc. KMnO₄/H⁺ and PCl₅ under suitable conditions.

Which row is correct?

	reactant	conditions	main product
A	Br ₂	room temperature	CH ₃ CH=CHCH ₂ Br
B	K ₂ Cr ₂ O ₇ /H ⁺	heat under reflux	CH ₃ CH=CHCHO
C	conc. KMnO ₄ /H ⁺	heat under reflux	CH ₃ CH=CHCO ₂ H
D	PCl ₅	room temperature	CH ₃ CH=CHCH ₂ Cl

4. June/2022/Paper_12/No.33

Primary alcohols can be oxidised to aldehydes using either acidified potassium dichromate(VI) or acidified potassium manganate(VII). The reaction mixtures change colour as the oxidising agent is reduced.

What are the colour changes seen?

	acidified potassium dichromate(VI)		acidified potassium manganate(VII)	
	before	after	before	after
A	green	orange	purple	colourless
B	orange	green	colourless	purple
C	orange	green	purple	colourless
D	purple	colourless	orange	green

