

Unit 16: Hydroxy compounds

Subunit 16.1: Alcohols

Topical Question No: 1

- 26 Propan-2-ol undergoes many reactions.

Which row is correct?

	reagent added to propan-2-ol	product
A	acidified KMnO_4	$\text{CH}_3\text{CH}_2\text{CHO}$
B	Cl_2	$\text{CH}_3\text{CHClCH}_3$
C	conc. H_2SO_4	CH_3CHCH_2
D	methanoic acid	$\text{HCO}_2\text{CH}_2\text{CH}_2\text{CH}_3$

Topical Question No: 2

- 24 Structural isomerism and stereoisomerism should be considered when answering this question.

The molecular formula of compound X is $\text{C}_5\text{H}_{12}\text{O}$.

Compound X:

- reacts with alkaline aqueous iodine
- can be dehydrated to form two alkenes only.

What could be the identity of compound X?

- A $\text{CH}_3\text{CH}_2\text{CH}(\text{CH}_3)\text{CH}_2\text{OH}$
B $\text{CH}_3\text{CH}_2\text{CH}(\text{OH})\text{CH}_2\text{CH}_3$
C $(\text{CH}_3)_2\text{CHCH}(\text{OH})\text{CH}_3$
D $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}(\text{OH})\text{CH}_3$

Topical Question No: 3

- 25 Which product is formed when 3-methylpentane-1,3,4-triol is heated under reflux with an excess of acidified potassium dichromate(VI)?

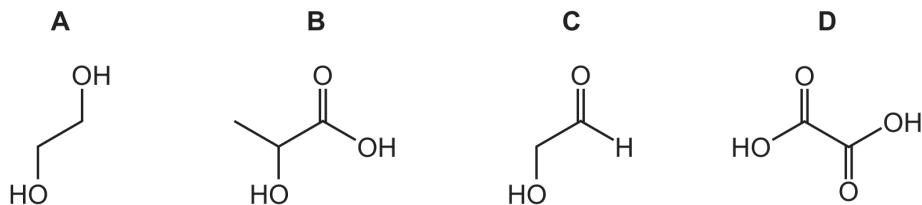
- A $\text{HO}_2\text{CCH}_2\text{C}(\text{CH}_3)(\text{OH})\text{COCH}_3$
B $\text{HO}_2\text{CCH}_2\text{COC}(\text{OH})(\text{CH}_3)_2$
C $\text{OHCCH}_2\text{C}(\text{CH}_3)(\text{OH})\text{COCH}_3$
D $\text{HO}_2\text{CCH}_2\text{CO}(\text{CH}_3)\text{COCH}_3$

Topical Question No: 4

29 1 mole of each of the following four compounds is reacted separately with:

- an excess of sodium
- an excess of sodium carbonate.

Which compound produces the same volume of gas with each of the **two** reagents?



Topical Question No: 5

38 What can be produced when an aqueous solution of butan-2-ol is oxidised under suitable conditions?

- 1 butanone
- 2 butanoic acid
- 3 butanal

Topical Question No: 6

24 Which sequence of reagents may be used in the laboratory to convert propan-1-ol into 2-bromopropane?

- A concentrated sulfuric acid, followed by bromine
- B concentrated sulfuric acid, followed by hydrogen bromide
- C ethanolic sodium hydroxide, followed by bromine
- D ethanolic sodium hydroxide, followed by hydrogen bromide

Topical Question No: 7

26 Which compound gives an organic product with a lower boiling point when it is heated under reflux with an excess of acidified potassium dichromate(VI)?

- A 2-methylbutan-1-ol
- B 2-methylbutan-2-ol
- C pentan-1-ol
- D pentan-2-ol

Topical Question No: 8

39 The compound pentan-1,4-diol has two OH groups per molecule and can be oxidised.

Which statements about pentan-1,4-diol or its oxidation products are correct?

- 1** When one mole of pentan-1,4-diol reacts with an excess of sodium metal, one mole of hydrogen molecules is produced.
- 2** At least one of the possible oxidation products of pentan-1,4-diol will react with 2,4-dinitrophenylhydrazine reagent.
- 3** Dehydration of pentan-1,4-diol could produce a compound with empirical formula C_5H_8 .

Answer Key

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2. Error
3. Error
4. Error
5. Error
6. Error
7. Error
8. Error