

Alcohols (MCQ)

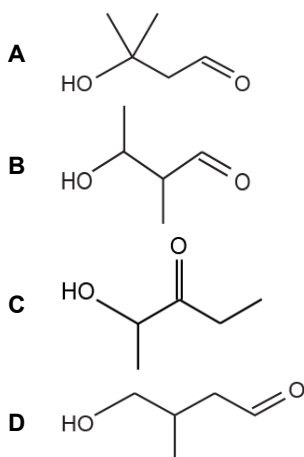
1. Which of these reagent(s) will **not** react with HOCH₂CH₂CH₂COOH?

- A NaCN in ethanol
- B C₂H₅OH in the presence of an acid catalyst
- C (CH₃CO)₂O
- D concentrated H₂SO₄

Your answer

[1]

2. Which compound can be refluxed with acidified potassium dichromate (VI) to form an organic product with molecular formula C₅H₈O₂?



Your answer

[1]

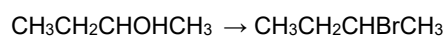
3. Which alcohol reacts with an acid catalyst to form a mixture of stereoisomers?

- A 3-methylbutan-2-ol
- B pentan-1-ol
- C 2-methylhexan-2-ol
- D heptan-4-ol

Your answer

[1]

4. What are the correct reagents for the conversion below?



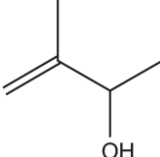
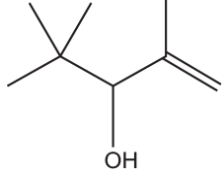
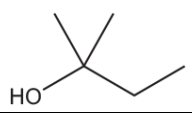

- A Br₂ and H₂SO₄
 B Br₂ and NaOH
 C NaBr and H₂SO₄
 D NaBr and NaOH

Your answer

[1]

5. Which compound could react with **both**

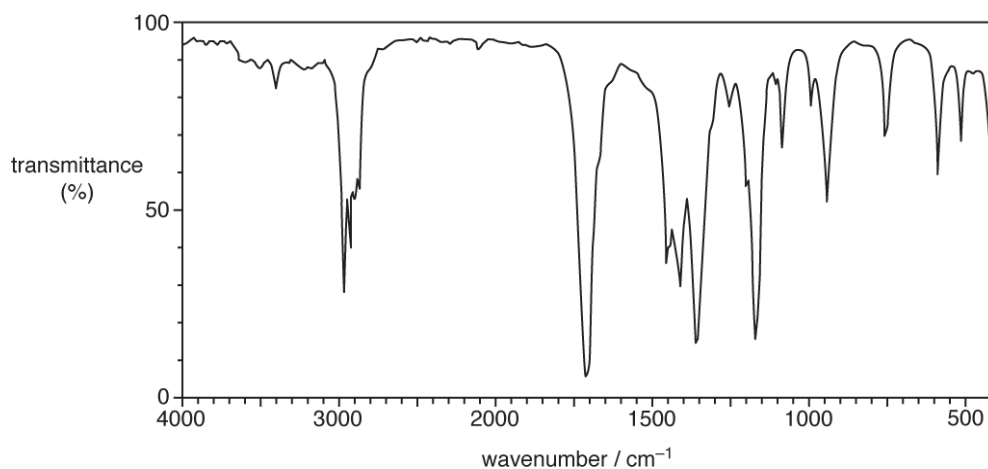
- K₂Cr₂O₇/H₂SO₄ in an oxidation reaction **and**
- an acid catalyst (e.g. H₂SO₄) in an elimination reaction?

A	
B	
C	
D	

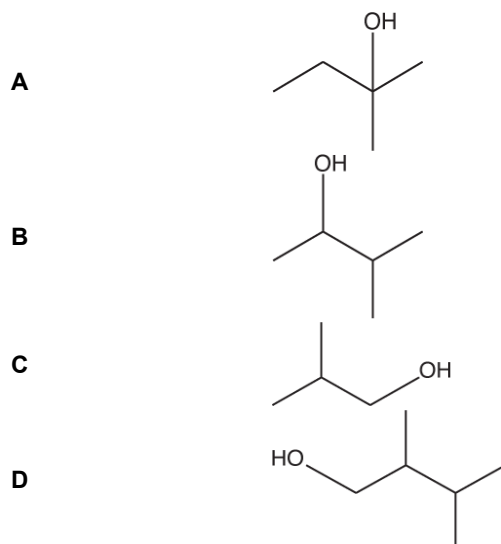
Your answer

[1]

6. An alcohol **A** is heated under reflux with sulfuric acid and potassium dichromate(VI).
The organic compound formed produces the infrared spectrum below.



Which compound could be alcohol **A**?



Your answer

[1]

7. Which alcohol reacts with an acid catalyst to form *E* and *Z* stereoisomers?

- A** pentan-3-ol
B pentan-1-ol
C 2-methylbutan-2-ol
D 2,2-dimethylpropan-1-ol

Your answer

[1]

8. A student plans the two-step synthesis below.



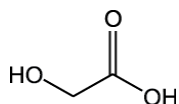
Which compound could be the student's intermediate?

- A $\text{HOOCCH}=\text{CHCOOH}$
- B $\text{HOCH}_2\text{CH}_2\text{CHICOOH}$
- C $\text{HOCH}_2\text{CH}_2\text{CH}(\text{OH})\text{CH}_2\text{OH}$
- D $\text{HOCH}_2\text{CH}(\text{OH})\text{CH}(\text{OH})\text{CH}_2\text{OH}$

Your answer

[1]

9. The compound shown below reacts with a mixture of NaBr and H_2SO_4 .



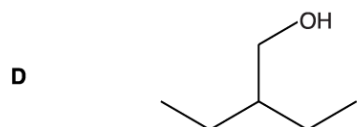
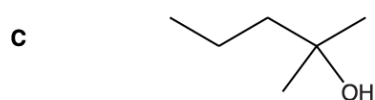
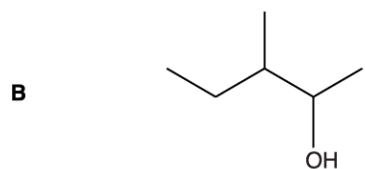
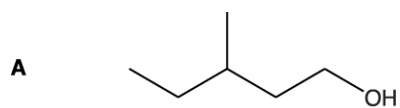
What is the relative molecular mass of the organic product?

- A 138.9
- B 155.9
- C 201.8
- D 235.8

Your answer

[1]

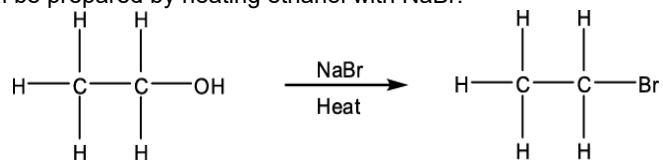
10. Which alcohol can be oxidised by $K_2Cr_2O_7$ and H_2SO_4 to form a ketone?



Your answer

[1]

11. Bromoethane can be prepared by heating ethanol with NaBr.



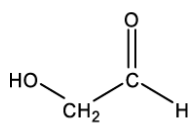
What are the conditions for this reaction?

- A. Acid catalyst
- B. Ultraviolet radiation
- C. Halogen carrier
- D. Nickel catalyst

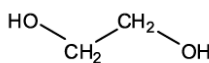
Your answer

[1]

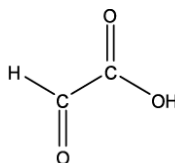
12. Which molecule is the most soluble in water?



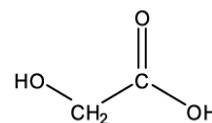
A



B



C

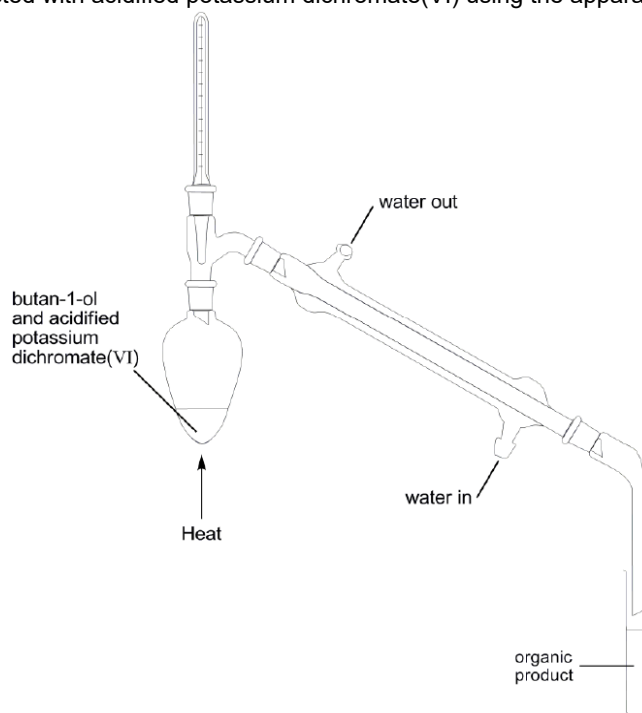


D

Your answer

[1]

13. Butan-1-ol is reacted with acidified potassium dichromate(VI) using the apparatus shown below.



What is the organic product of this reaction?

- A. But-1-ene
- B. Butanone
- C. Butanal
- D. Butanoic acid

Your answer

[1]

14. Which alcohol will **not** react with potassium dichromate(VI) in sulfuric acid?

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

Your answer

[1]

15. Which volume of oxygen gas, at room temperature and pressure, is required for complete combustion of 1.25×10^{-3} mol of propan-1-ol?

- A. 105 cm^3
- B. 120 cm^3
- C. 135 cm^3
- D. 120 cm^3

Your answer

[1]

END OF QUESTION PAPER

Mark scheme – Alcohols (MCQ)

Question			Answer/Indicative content	Marks	Guidance
1			A	1 (AO1.1)	
			Total	1	
2			C	1 (AO2.3)	
			Total	1	
3			D	1 (AO2.1)	
			Total	1	
4			C	1 (AO1.1)	
			Total	1	
5			A	1 (AO1.2)	Examiner's Comments Success with this question was dependent on knowledge of key reactions and their reagents. B and C proved to be the main distractors from A.
			Total	1	
6			B	1	Examiner's Comments Just over half of the candidates identified the correct alcohol. The common incorrect answer was C.
			Total	1	
7			A	1	Examiner's Comments Candidates found this question challenging, with only the more able candidates obtaining the correct alcohol. Answer option C was a common incorrect answer.
			Total	1	
8			C	1	
			Total	1	
9			A	1	

			Total	1	
10			B	1	Examiner's Comments Generally scored well.
			Total	1	
11			A	1	
			Total	1	
12			D	1	
			Total	1	
13			C	1	
			Total	1	
14			D	1	
			Total	1	
15			C	1	
			Total	1	