



EXAM PAPERS PRACTICE

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examiners and assessment experts

Detailed mark scheme

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Designed to test your ability and
thoroughly prepare you

2002

XVIII

1583

Time allowed
9 Minutes

Score

/8

Percentage

%

CHEMISTRY

**AQA
AS & A LEVEL**

Topic Questions

3.3 Organic chemistry

1. How many peaks will be observed in the low-resolution proton n.m.r. spectrum of $(\text{CH}_3)_2\text{CHCOO}(\text{CH}_2)_3\text{CH}_3$?

- A 4
- B 5
- C 6
- D 7

(Total 1 mark)

27. Propene reacts with hydrogen bromide to form a mixture of saturated organic products. The proton n.m.r. spectrum of the major organic product has

- A 3 peaks with relative intensities 3 : 2 : 2
- B 2 peaks with relative intensities 3 : 4
- C 3 peaks with relative intensities 3 : 1 : 3
- D 2 peaks with relative intensities 6 : 1

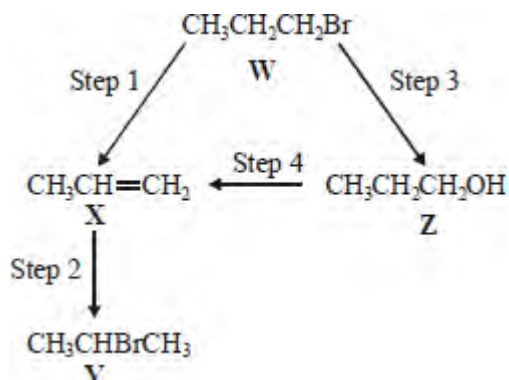
(Total 1 mark)

3. Which one of the following has a singlet peak in its proton n.m.r. spectrum?

- A ethyl propanoate
- B propyl methanoate
- C hexan-3-one
- D 2-chlorobutane

(Total 1 mark)

4 For this question refer to the reaction scheme below.



Which one of the following statements is **not** correct?

- A **W** and **Y** are structural isomers.
- B **Z** is a primary alcohol.
- C **Y** gives two peaks in its proton n.m.r. spectrum.
- C **X** has geometrical isomers.

(Total 1 mark)

5 Which one of the following does **not** have a singlet peak in its proton n.m.r. spectrum?

- A butyl methanoate
- B propyl ethanoate
- C ethyl propanoate
- C methyl butanoate

(Total 1 mark)

6 Which one of the following pairs reacts to form an organic product with only 2 singlets in its proton n.m.r. spectrum?

- A ethene and bromine
- B propan-2-ol and acidified potassium dichromate(VI)
- C ethanol and concentrated sulphuric acid
- D epoxyethane and water in the presence of dilute sulphuric acid

(Total 1 mark)

7 Which one of the following pairs of reagents reacts to form an organic product that shows only 2 peaks in its proton n.m.r. spectrum?

- A butan-2-ol and acidified potassium dichromate(VI)
- B ethanoyl chloride and methanol
- C propanoic acid and ethanol in the presence of concentrated sulphuric acid
- D ethene and hydrogen in the presence of nickel

(Total 1 mark)

8 Which amine has only **three** peaks in its proton NMR spectrum?

- A Methylamine ☐
- B Trimethylamine ☐
- C Diethylamine ☐
- D Propylamine ☐

(Total 1 mark)