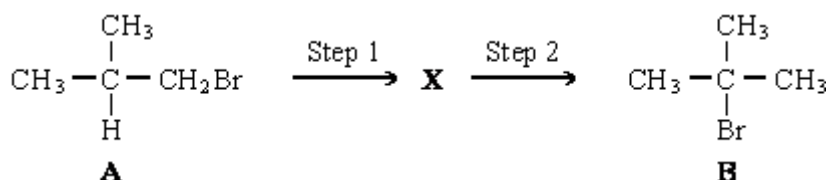


Name of the Student: _____

Max. Marks : 17 Marks

Time : 17 Minutes

Q1.

The conversion of compound **A** into compound **B** can be achieved in two steps as shown below.The intermediate compound, **X**, has an absorption at 1650 cm^{-1} in its infra-red spectrum.

- (a) Identify compound **X**. Explain your answer.

(2)

- (b) For each step in this conversion, give the reagents and essential conditions required and outline a mechanism.

(11)

- (2)**

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Q2.

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)

Q3.

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)