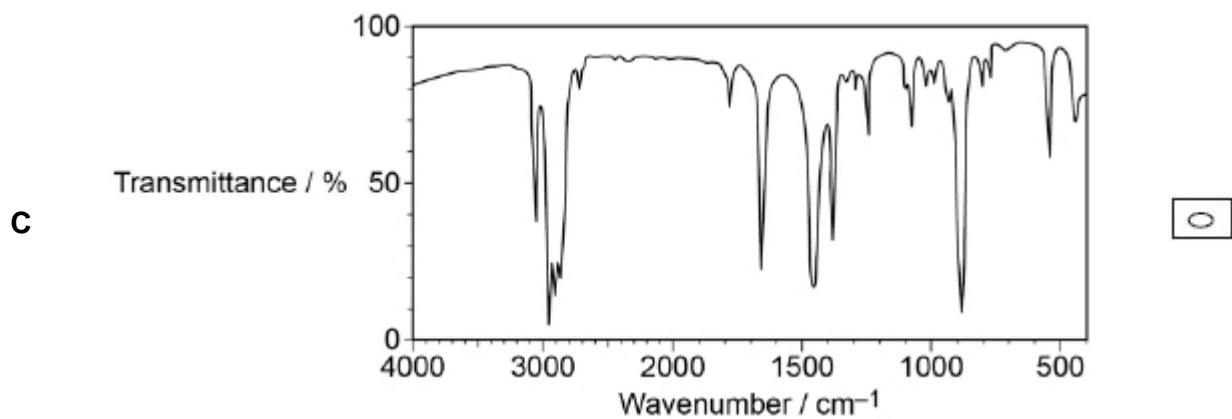
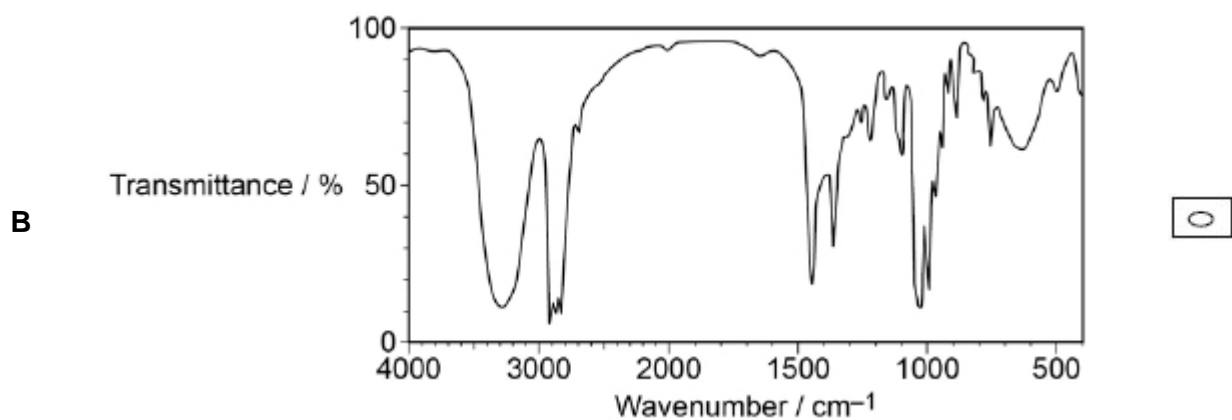
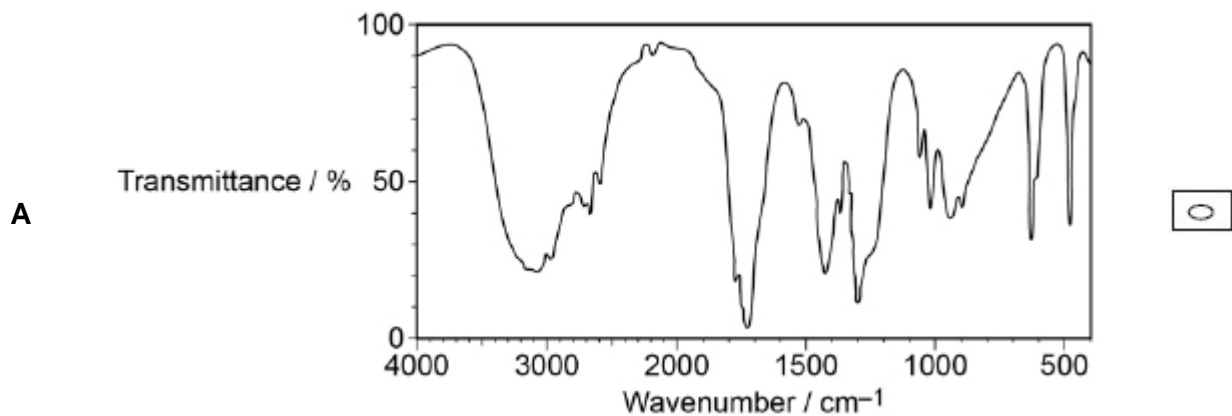
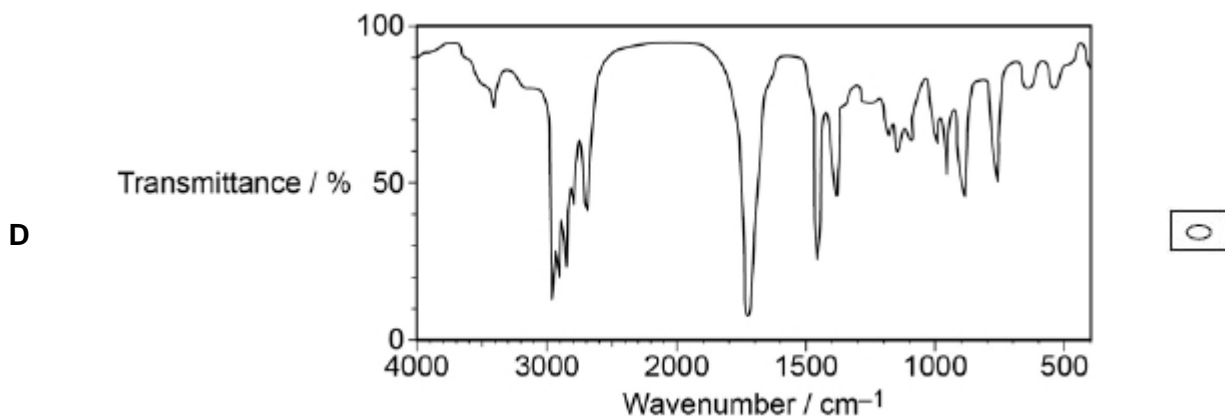


1

Which of these infrared spectra could represent a carboxylic acid?

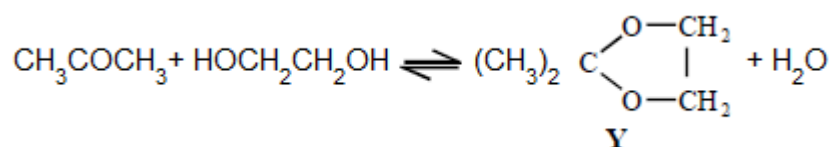




(Total 1 mark)

2

This question is about the reaction between propanone and an excess of ethane-1,2-diol, the equation for which is given below.



In a typical procedure, a mixture of 1.00 g of propanone, 5.00 g of ethane-1,2-diol and 0.100 g of benzenesulphonic acid,  $\text{C}_6\text{H}_5\text{SO}_3\text{H}$ , is heated under reflux in an inert solvent. Benzenesulphonic acid is a strong acid.

The products would **not** have an absorption in the infra-red at

- A 1050  $\text{cm}^{-1}$
- B 1720  $\text{cm}^{-1}$
- C 2950  $\text{cm}^{-1}$
- D 3400  $\text{cm}^{-1}$

(Total 1 mark)

3

Which one of the following statements about but-2-enal,  $\text{CH}_3\text{CH}=\text{CHCHO}$ , is **not** true?

- A It has stereoisomers.
- B It shows a strong absorption in the infra-red at about 1700  $\text{cm}^{-1}$ .
- C It will turn an acidified solution of potassium dichromate(VI) green.
- D It can be dehydrated by concentrated sulphuric acid.

(Total 1 mark)

Mark schemes

1

A

[1]

2

B

[1]

3

D

[1]