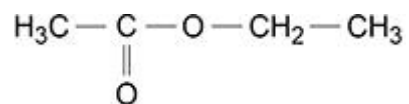


Q1.

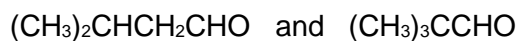
Which statement does **not** support the suggestion that an unknown organic compound is



- A Its ^1H NMR spectrum has 3 peaks with an integration ratio of 2:3:3
- B Its ^{13}C NMR spectrum has 3 peaks.
- C Its infrared spectrum has an absorption at 1735 cm^{-1}
- D It has 36.36% by mass of oxygen and 9.09% by mass of hydrogen.

(Total 1 mark)**Q2.**

Which can be used to distinguish between these two compounds?

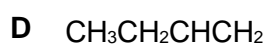
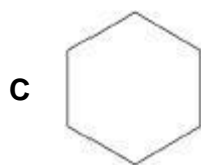
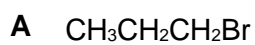


- A Acidified potassium dichromate(VI)
- B Fingerprint region of infrared spectrum
- C M_r value in high resolution mass spectrometry
- D Tollens' reagent

(Total 1 mark)

Q3.

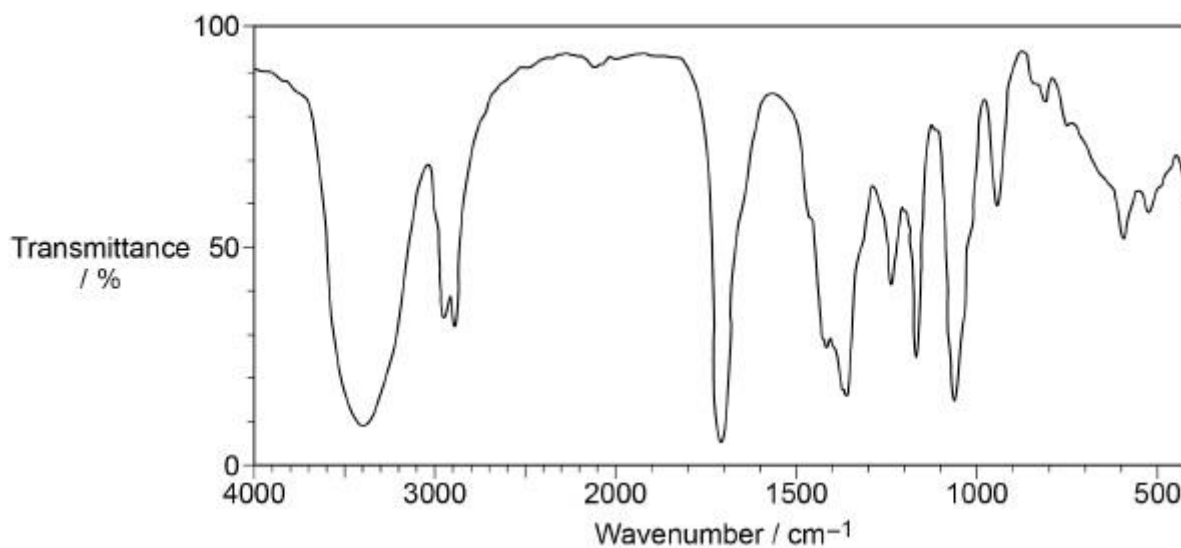
Which compound decolourises bromine water in the absence of sunlight?



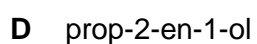
(Total 1 mark)

Q4.

The infrared spectrum of an organic compound is shown.



Which compound produces this spectrum?



(Total 1 mark)

Q5.

Three reagents are added separately to four organic compounds.

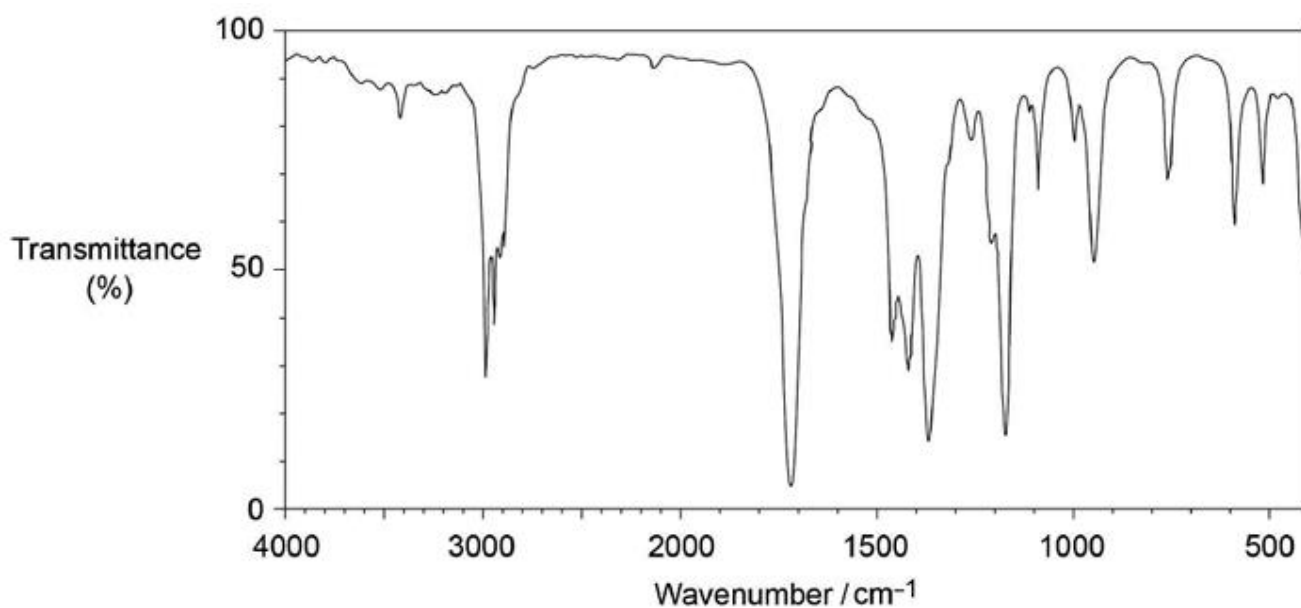
Which row shows the correct observations?

		Sodium hydrogen carbonate	Acidified potassium dichromate(VI)	Tollens' reagent	
A	Propan-1-ol	effervescence	orange solution turns green	no visible change	<input type="radio"/>
B	Propanal	no visible change	orange solution turns green	silver mirror	<input type="radio"/>
C	Propanone	no visible change	no visible change	silver mirror	<input type="radio"/>
D	Propanoic acid	effervescence	no visible change	silver mirror	<input type="radio"/>

(Total 1 mark)

Q6.

The infrared spectrum of an organic compound is shown.



Which compound produces this spectrum?

- A butanone
- B ethanol
- C pent-2-ene
- D propanoic acid

(Total 1 mark)**Q7.**

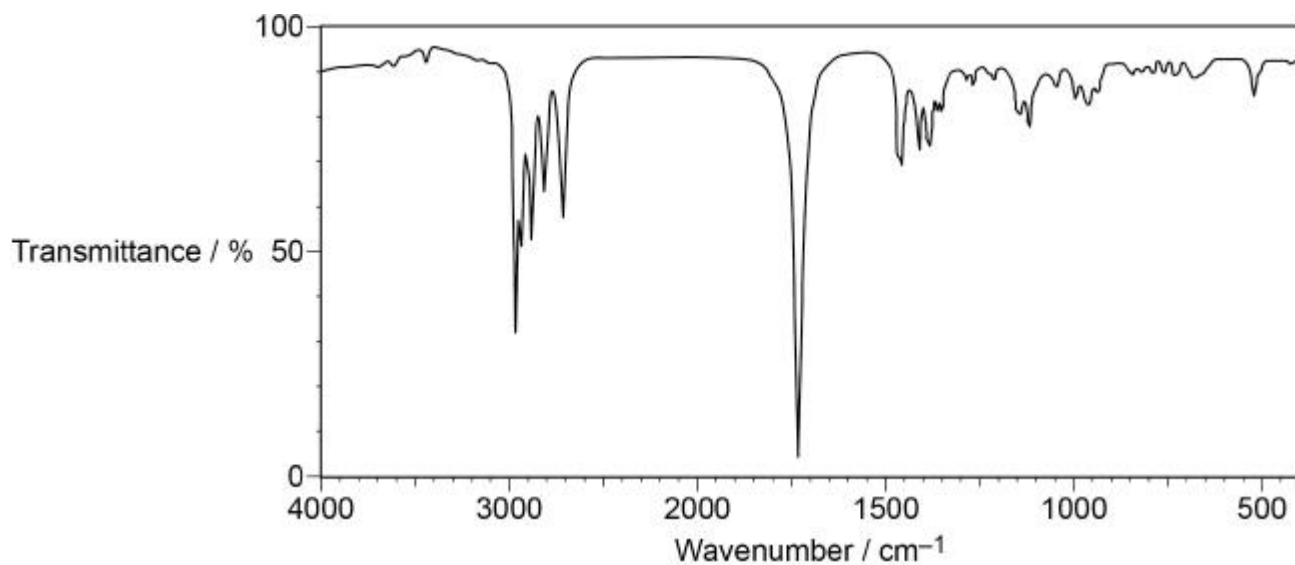
Which compound forms a molecular ion with a different precise molecular mass from the other three?

- A butanone
- B cyclobutanol
- C dimethylpropane
- D methylpropanal

(Total 1 mark)

Q8.

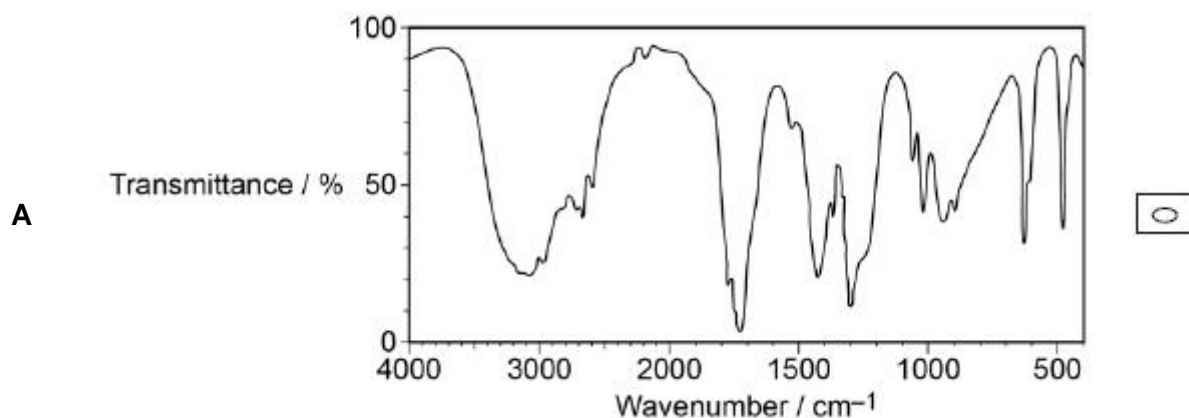
Which compound gives this infrared spectrum?

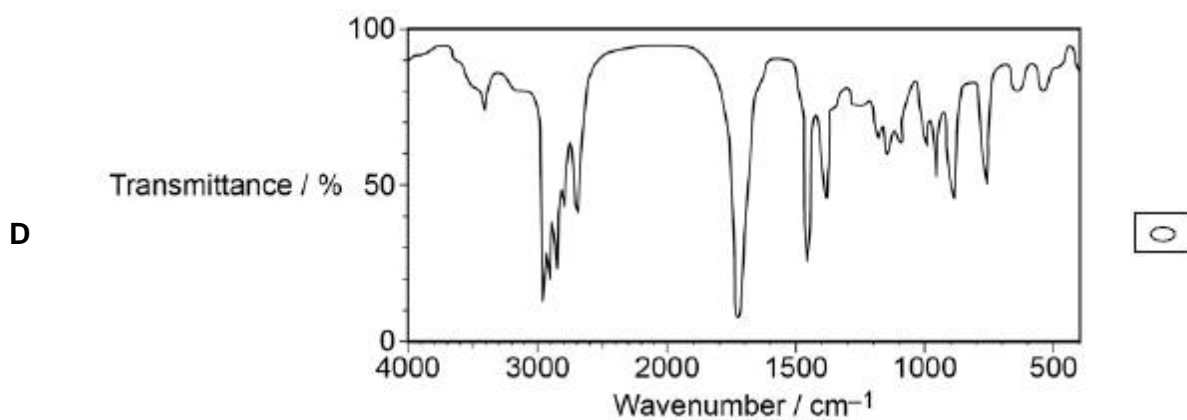
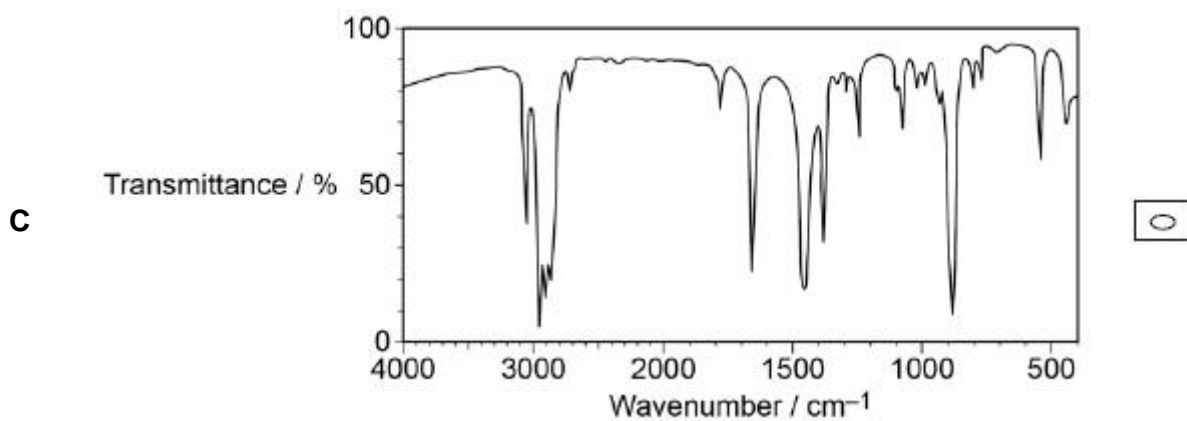
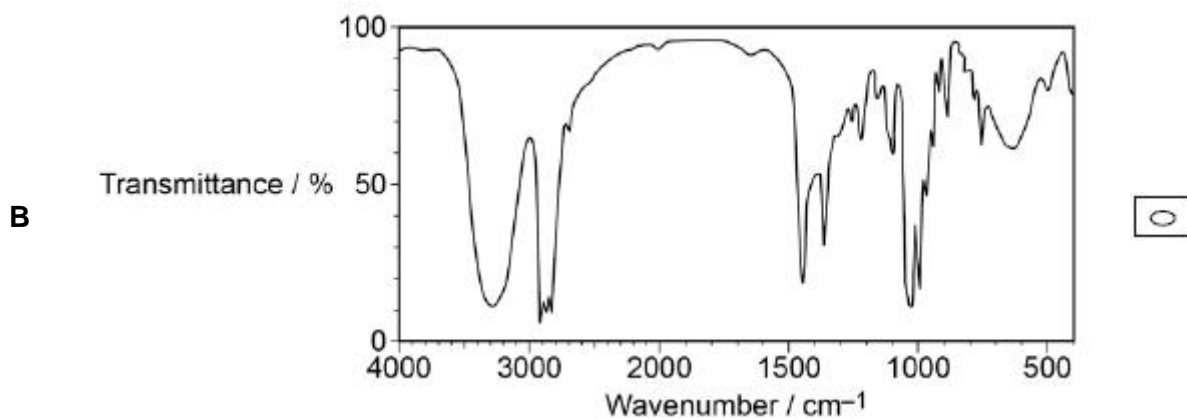


- A 1-bromobutane
- B butan-1-ol
- C butanal
- D butanoic acid

(Total 1 mark)**Q9.**

Which of these infrared spectra could represent a carboxylic acid?





(Total 1 mark)

Q10.

Which of the following compounds would form an orange-red precipitate when heated with Fehling's solution?

A $\text{CH}_3\text{CH}_2\text{CN}$

B $\text{CH}_3\text{CH}_2\text{COOH}$

C CH_3CHO

D CH_3COCH_3

(Total 1 mark)