

ALKANOIC ACIDS – TEST 1

QUESTION 1

Which of the following is untrue of the alkanolic acids?

- A Most alkanolic acids have the general formula $C_nH_{2n}O_2$
- B Alkanolic acids are acidic in nature
- C Alkanolic acids have multiple sites of hydrogen bonding
- D Alkanolic acids can be oxidised

QUESTION 2

Compared to the alkanols, alkanolic acids have

- A lower melting and boiling points
- B higher viscosities
- C higher volatility
- D lower polarity

QUESTION 3

As straight chain carboxylic acids get larger

- A the melting and boiling points decrease
- B the density increases
- C the viscosity decreases
- D the volatility increases

QUESTION 4

The strongest type of intermolecular bonding found between carboxylic acids is

- A dispersion forces
- B dipole-dipole bonding
- C hydrogen bonding
- D ionic bonding

QUESTION 5

Which of the following reaction types can alkanolic acids undergo?

- i. Substitution
 - ii. Addition
 - iii. Acid – Base
 - iv. Reduction
- A i and ii
 - B ii and iii
 - C iii
 - D iii and iv

QUESTION 6

Draw a diagram showing the intermolecular bonding involved between ethanoic acid molecules.

Solution

QUESTION 7

Write an equation for the acid-base reaction between ethanoic acid and sodium hydroxide.

Solution

QUESTION 8

Explain why ethanoic acid is less volatile than 1-propanol (Note: Both molecules have the same molecular mass).

Solution

SOLUTIONS

QUESTION 1 Answer is D

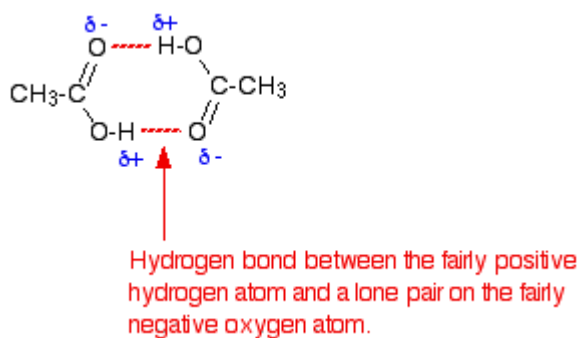
QUESTION 2 Answer is B

QUESTION 3 Answer is B

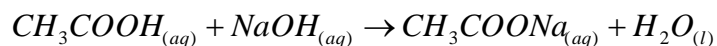
QUESTION 4 Answer is C

QUESTION 5 Answer is D

QUESTION 6



QUESTION 7



QUESTION 8

Both molecules have hydrogen bonding and dispersion forces between their molecules. However, ethanoic acid has two sites of hydrogen bonding compared to ethanol's one site of hydrogen bonding. Therefore, ethanoic acid molecules are held together more tightly and are less volatile.