Q1. An excess of methanol was mixed with 12 g of ethanoic acid and an acid catalyst. At equilibrium the mixture contained 8 g of methyl ethanoate. The percentage yield of ester present was

A 11

B 20

C 54

D 67

(Total 1 mark)

Q2.

Summarised directions for recording responses to multiple completion questions			
A (i), (ii) and (iii) only	**B** (i) and (iii) only	**C** (ii) and (iv) only	**D** (iv) alone

Isomers of the ester $HCOOCH_2CH_2CH_3$, include

(i) ethyl ethanoate

(ii) methyl propanoate

(iii) butanoic acid

(iv) butyl methanoate

(Total 1 mark)

Q3.

Summarised directions for recording responses to multiple completion questions			
A (i), (ii) and (iii) only	**B** (i) and (iii) only	**C** (ii) and (iv) only	**D** (iv) alone

Products from the acid hydrolysis of the ester $CH_3CH_2COOCH_2CH_3$ include

(i) CH_3CH_2COOH

(ii) CH_3COOH

(iii) CH_3CH_2OH

(v) $CH_3CH_2CH_2OH$

(Total 1 mark)

Q4. How many structural isomers, which are esters, have the molecular formula $C_4H_8O_2$?

A 2

B 3

C 4

D 5

(Total 1 mark)

Q5. Hydrolysis of the ester, $CH_3COOCH_2CH_2CH_3$, produces ethanoic acid. In an experiment, 2.04 g of the ester was used and 0.90 g of ethanoic acid was produced. The percentage yield of ethanoic acid was:

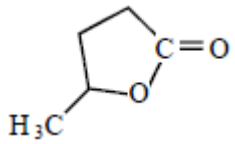
A 44

B 59

C 75

D 90

(Total 1 mark)

Q6. Acid hydrolysis of  produces

A $CH_3CH(OH)CH_2CH_2COOH$

B $CH_2(OH)CH_2CH_2CH_2COOH$

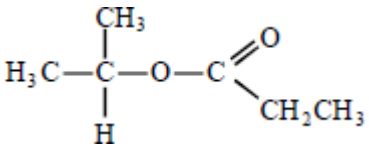
C $CH_3CH(OH)CH_2CH_2OCHO$

D $CH_2(OH)CH_2CH_2CH_2OCHO$

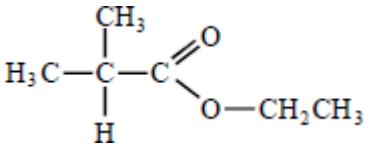
(Total 1 mark)

Q7. The structural formula of ethyl 2-methylpropanoate is

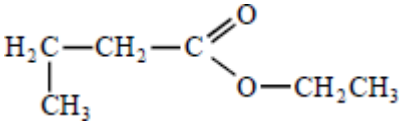
A



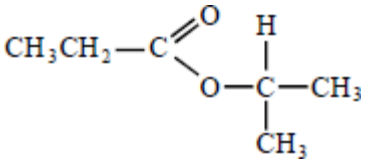
B



C



D



(Total 1 mark)