

O Level Pure Chemistry MCQs

Organic Chemistry Test 5.0

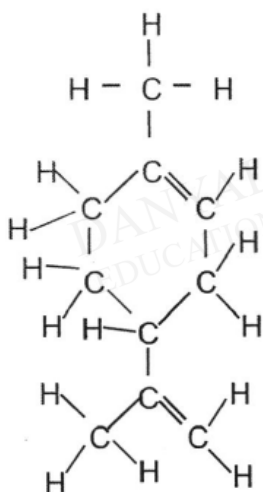
Q1

Which of these acids is polyunsaturated?

- A** linolenic acid; $\text{CH}_3(\text{CH}_2\text{CH}=\text{CH})_3(\text{CH}_2)_7\text{CO}_2\text{H}$
B oleic acid; $\text{CH}_3(\text{CH}_2)_7\text{CH}=\text{CH}(\text{CH}_2)_7\text{CO}_2\text{H}$
C palmitic acid; $\text{CH}_3(\text{CH}_2)_{14}\text{CO}_2\text{H}$
D stearic acid; $\text{CH}_3(\text{CH}_2)_{16}\text{CO}_2\text{H}$

Q2

Liquid limonene may be extracted from oranges. The structure of limonene is shown below.



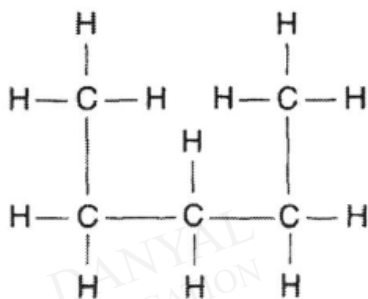
How many moles of hydrogen gas would react completely with one mole of limonene to make it saturated?

- A** 1 **B** 2 **C** 3 **D** 4

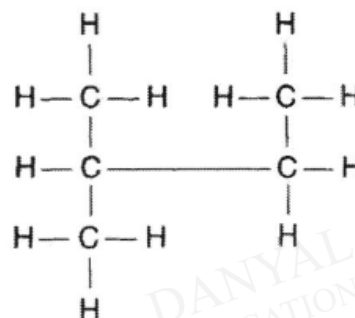
Q3

Four structural formulae are shown below.

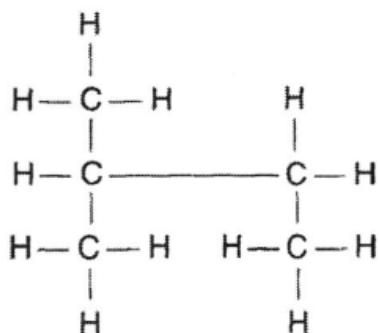
P



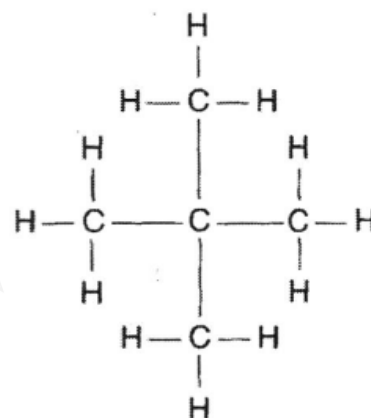
Q



R



S

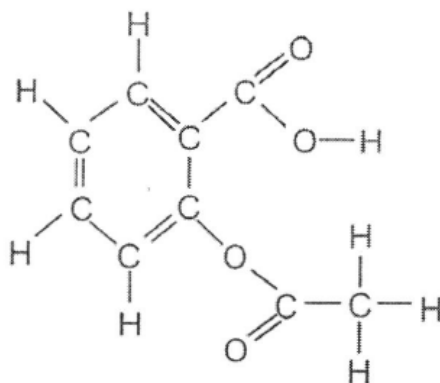


Which of the formulae represent the same compound?

- A P, Q and R
- B P, Q and S
- C Q and R
- D Q and S

Q4

Aspirin is a drug which is used as a general pain killer. The structural formula of aspirin is shown below.



Which of the following statements about aspirin is **false**?

- A Its aqueous solution reacts with sodium carbonate.
- B It decolourised aqueous bromine.
- C It is formed from an alcohol and a carboxylic acid.
- D It turns purple acidified aqueous potassium manganate (VII) colourless.

Q5

Linoleic acid, $C_{17}H_{31}COOH$, is the main fatty acid found in vegetable oils such as soybean oil and corn oil.

Which statement about linoleic acid is correct?

- A It burns in air with a non-smoky flame.
- B It is polyunsaturated as it contains many double bonds between carbon and hydrogen atoms.
- C It forms a solid compound on hydrogenation.
- D It produces margarine when it reacts with steam in the presence of nickel catalyst.

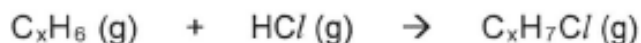
Q6

How many different alkenes have the molecular formula C_5H_{10} ?

- A 2
- B 3
- C 4
- D 5

Q7

The reaction between the hydrocarbon C_xH_6 and hydrogen chloride can be represented by the equation below.



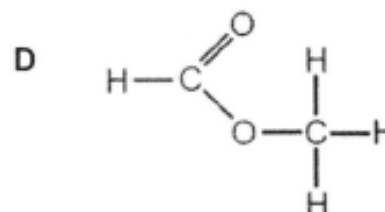
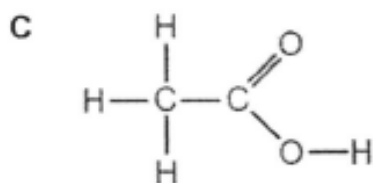
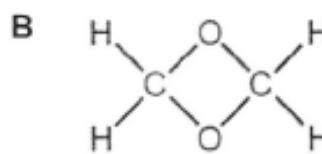
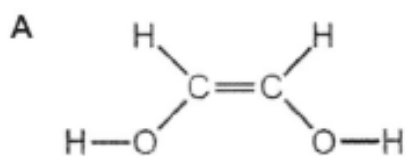
Which statement about the above reaction is true?

- A It is a substitution reaction.
- B UV light is required for the reaction to take place.
- C The molecular formula of the hydrocarbon is C_2H_6 .
- D The molecular formula of the hydrocarbon is C_3H_6 .

Q8

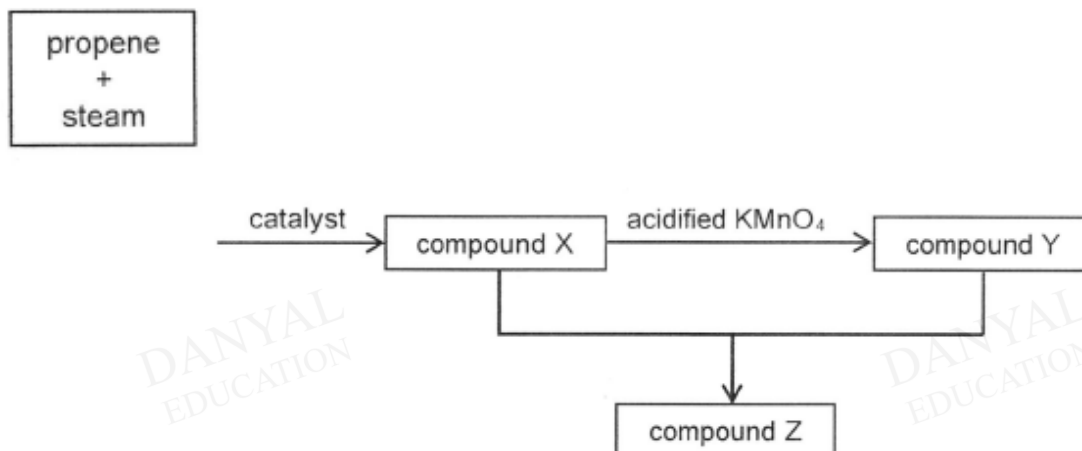
An aqueous solution of a compound of formula, $C_2H_4O_2$, reacts with sodium carbonate liberating carbon dioxide.

What is the structural formula of the compound?



Q9

The following reaction scheme is carried out for the synthesis of a compound Z.

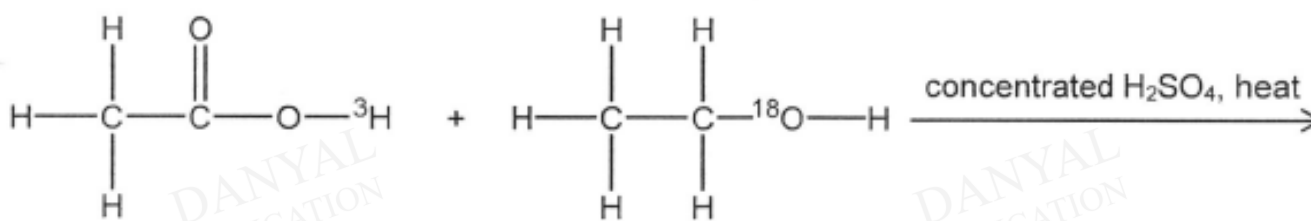


Which row correctly identifies compounds X, Y and Z?

| | X | Y | Z |
|---|----------------|----------------|-------------------|
| A | propanol | butanoic acid | propyl butanoate |
| B | propane | propanol | propanoic acid |
| C | propanoic acid | propanol | propyl propanoate |
| D | propanol | propanoic acid | propyl propanoate |

Q10

Ethanoic acid containing a radioactive hydrogen atom (³H) was reacted with ethanol that contains a radioactive oxygen atom (¹⁸O) in the presence of concentrated sulfuric acid and heat.



Which row correctly shows where the radioactive atoms will be found in the products?

| | ³ H | ¹⁸ O |
|---|----------------|-----------------|
| A | ester | ester |
| B | ester | water |
| C | water | ester |
| D | water | water |

Answers

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Q1 A

Q2 B

Q3 C

Q4 D

Q5 C

Q6 D

Q7 D

Q8 C

Q9 D

Q10 C

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