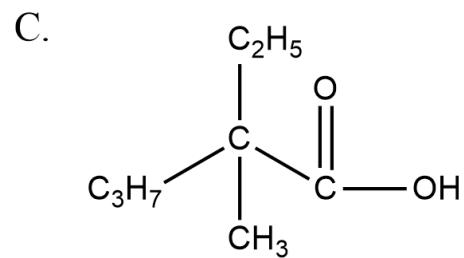
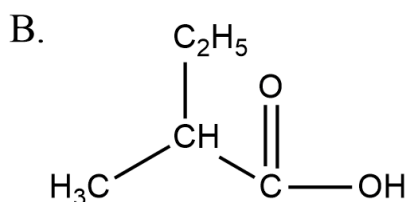
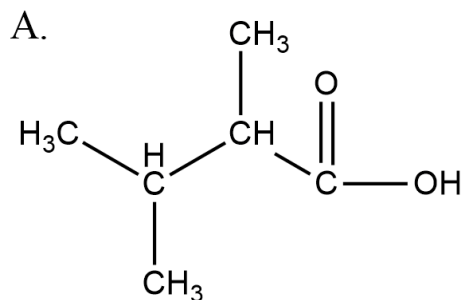


## CARBOXYLIC ACIDS

1. Name the following carboxylic acid structures by using IUPAC system.



2. Write the structural formula for each of the followings.

- 3-methyl pentanoic acid
- 2, 2, 3-trimethyl hexanoic acid
- 2,2-diethyl butanoic acid
- acetic acid
- 2-ethyl-3-methyl butanoic acid

3. Write equations for the preparation of the following compounds by using structural formulae of organic compounds.

- acetic acid from ethyl alcohol
- 3-methyl butanoic acid
- formic acid from potassium formate

4. A saturated monocarboxylic acid 4 carbon atoms is given. Try to draw all structural isomers of this carboxylic acid and name them with IUPAC system.

5. A sample of saturated monocarboxylic acid is found to contain 43.24% oxygen atom. What is the molecular formula and the name of the carboxylic acid?

6. What is the molecular formula and mass of saturated monocarboxylic acid obtained from 6.72 L and 9 grams of an alkane at STP with a series of reactions?

7. When a sample calcium carbonate is reacted with excess amount of acetic solution 3.584 L of carbon dioxide gas at STP is produced. What is the mass of calcium acetate is formed?

8. How many grams of NaOH is needed to neutralize 50 mL of vinegar (5% acetic acid) with a density of 1.056g/mL?

9. What is the volume of hydrogen gas produced when 9.2 g of sodium metal is put into formic acid?

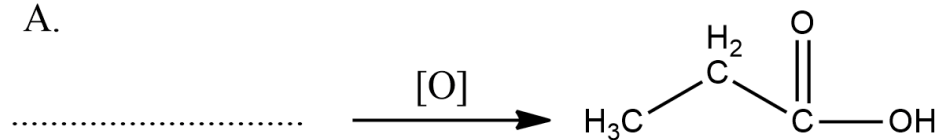
10. Calculate the volume at STP of ethene needed to obtain 2 kg of acetic acid.

11. Write down the family and a homologue of for each of the following organic compounds.

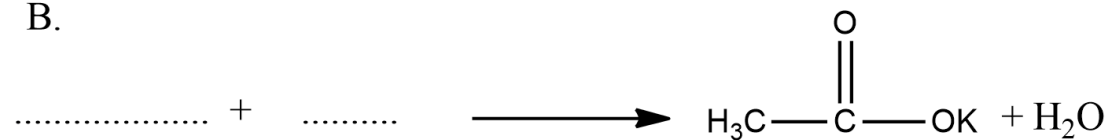
- Ethane
- Propene
- acetaldehyde
- propan-2-ol
- butanoic acid

12. Complete the following reactions with structural formulae of organic substances

A.



B.



C.

