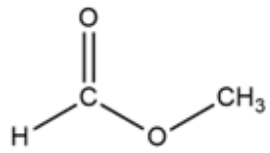
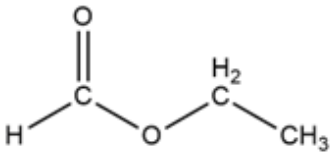
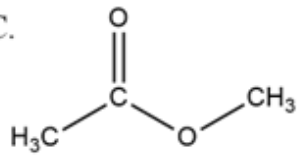
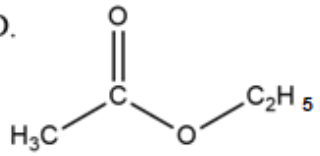
ESTERS

1. Name the following ester structures by using IUPAC system.

A. 

B. 

C. 

D. 

2. Write the structural formula for each of the followings.
A. isopropyl propanoate
B. ethyl acetate
C. propyl formate
D. methyl butanoate
E. ethyl ethanoate

3. Write equations for the preparation of the following compounds by using structural formulae of organic compounds.
A. ethyl acetate
B. methyl butanoate
C. acetic acid form methyl ethanoate

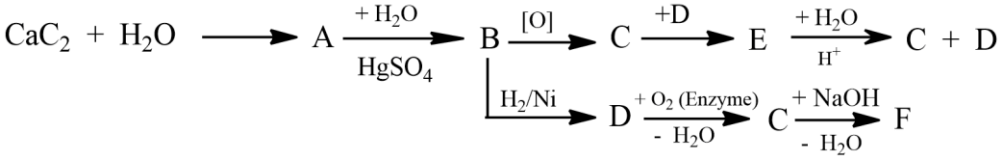
4. Draw and name all the isomers of $C_3H_6O_2$.

5. By using esterification reaction write the preparation reactions of d and c in the exercise 1.

6. Write down the hydrolysis reactions of methyl acetate:
A. by the help of water in acidic medium B. with alkaline solution

7. A sample of ester is found to contain 36.36% oxygen atom. What is the molecular formula and the name of the ester?

8.Perform the following transformations if C is a carboxylic acid.



9. Calculate the mass of the salt obtained by the reaction of 22.2 g of methyl acetate with 200 mL of 1 mol/L NaOH solution. (Na:23, C:12, O:16, H:1)

10. A 35.2 g sample of ethyl acetate is obtained when 23 g of ethyl alcohol solution react completely with acetic acid. What is the percentage of alcohol in the solution?

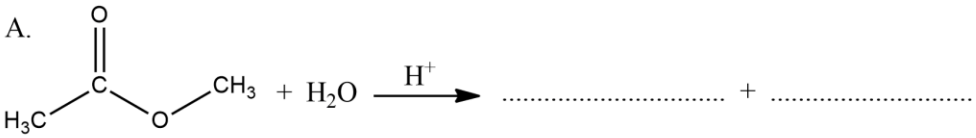
11. If the alcohol produced from the hydrolysis of 14.8 g of methyl acetate reacts with sufficient amount of metallic **sodium**, what volume of hydrogen gas can be produced at STP?

12. A 55.6 g sample of sodium salt of a saturated fatty acid contains 4.6 g of sodium. Find the formula of this soap.

13. What is the molecular weight of the fatty acid which is formed from the hydrolysis of a simple triglyceride whose molecular weight is 806 g/mole?

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

A.



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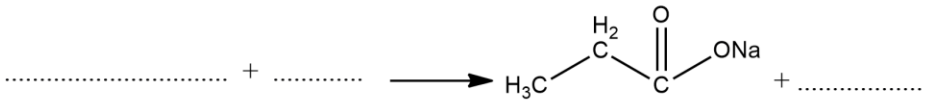
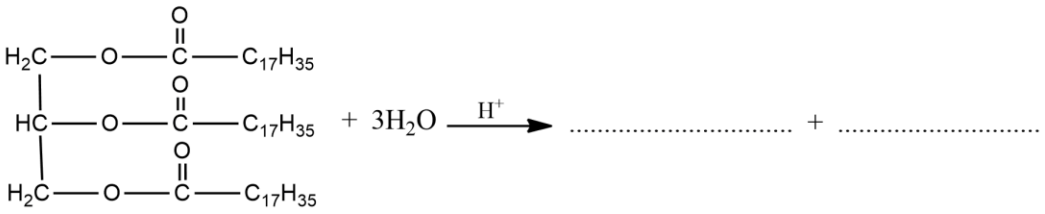


C.



D.