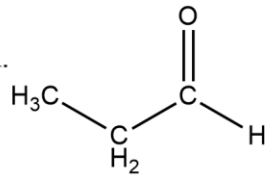
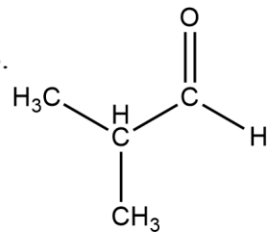
ALDEHYDES

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

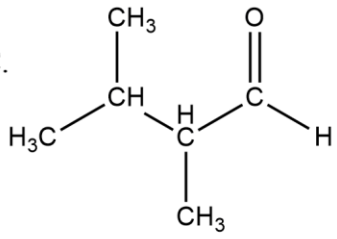
A.



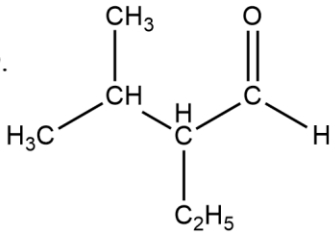
B.



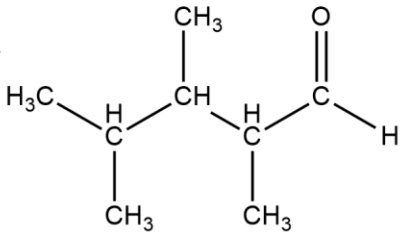
C.



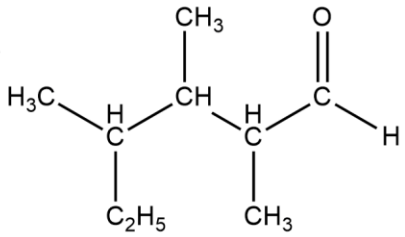
D.



E.



F.



2. Write the structural formula for each of the followings.
A. 3-methylbutanal
B. 3, 3-dimethyl pentanal
C. 3-ethylhexanal
D. acetaldehyde
E. 2, 2-dimethylbutanal

3. Write equations for the preparation of the following compounds by using structural formulae of organic compounds.
A. acetaldehyde from acetylene
B. propanal from 1-propanol
C. 2-methylbutanal

4. An aliphatic aldehyde with 5 carbon atom is given. Try to draw all structural isomers of this aldehyde and name them with IUPAC system.

5. A 10 g of aliphatic aldehyde is analyzed and found to contain 1.2 g of hydrogen atom. Find the molecular formula and name the aldehyde.

6. The total mass of hydrogen and oxygen atoms in 11.6 of an aldehyde is 4.4 g. Find the molecular formula and name the aldehyde.

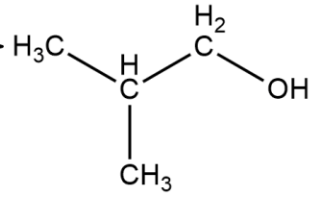
7. When a 1.2 g sample of a primary alcohol is oxidized, 1.16 g of an aldehyde is produced. What is the molecular formula and name of the aldehyde?

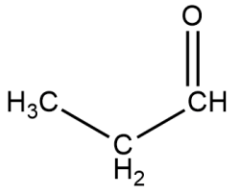
8. If 1 g solution of acetaldehyde precipitates 0.715 g Cu_2O when reacted with Fehling's reagent, what is the percentage by weight of solution?

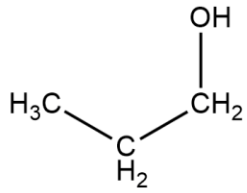
9. A 10 g mixture of methanol and methanal forms 54 g of silver when reacted with Tollen's reagent. What is the percentage by mass of methanol in the mixture?

10. If a 90 g mixture of formaldehyde and ethylene glycol is reacted with excess sodium metal, 46 g of sodium is consumed and hydrogen gas is produced. What is the mass of formaldehyde in the mixture?

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

A. ..... + H_2 $\xrightarrow{\text{Pt or Ni}}$ 

B.  + Ag_2O $\longrightarrow$ ..... + ...

C.  $\xrightarrow{[O]}$ .....

D. HC≡CH + ... $\xrightarrow[H_2SO_4]{HgSO_4}$