Friday worksheet 11

Organic – pathways, reactions

1) Consider the image on the right.
   a) In the box provided on the right:
      i. Draw the structural formula of 2-methylbut-1-ene

      ii. Draw the structural formula of compound Z.

      iii. Draw the structural formula of compound W

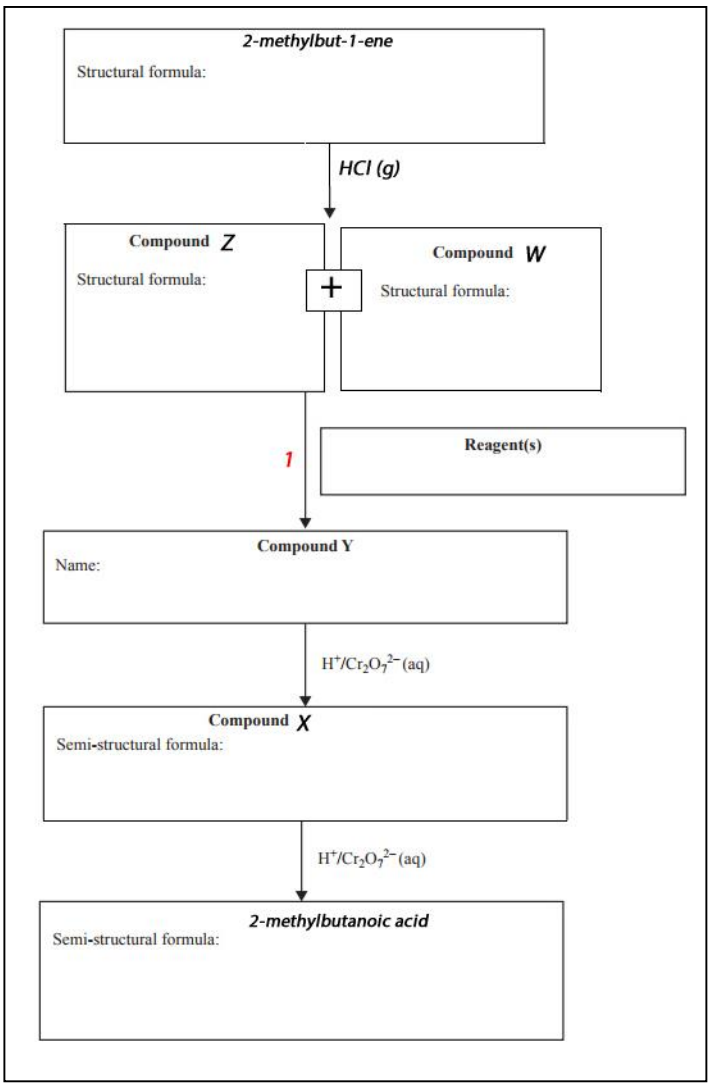
      iv. Write the name of compound Y

      v. Write the semi-structural formula of compound X

      vi. Write the semi-structural formula of 2-methylbutanoic acid

      vii. Write the reagents for reaction labelled (1)

   b) Do compounds Z and W have isomers that will rotate plane-polarized light? Explain



2) Consider the reaction $CH_3CHCH_2 + Cl_2 \rightarrow CH_3CHCl\ CH_2Cl$.
   a) Is this a redox reaction? Justify your answer.

   b) In the space provided on the right draw the repeating unit of the polymer formed by an addition reaction between 2-methylbut-1-ene monomers.

c) In the space provided on the right draw the structural formula of the molecules stated in each box.

propan-1,3-diol

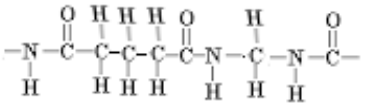
Oxalic acid (HOOCCOOH)

d) In the space provided on the right draw the structural formula of the repeating unit of a polymer formed by the polymerisation of propan-1,3-diol and oxalic acid (HOOCCOOH).

i. State the type of reaction that takes place to form the polymer.

ii. Calculate the molecular mass (g/mol) of a small unit composed of four monomers.

e) Consider a small section of a copolymer shown on the right formed by two different monomers.



i. In the diagram on the right circle the functional group present in the copolymer

ii. Name the functional group you circled.

iii. In the two boxes below draw the structural formula of each monomer.

Name _____

Name _____