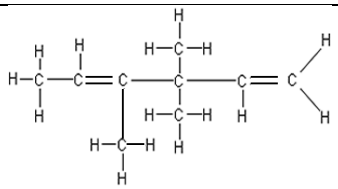
Revision Unit 1

1) An unknown element is found to have a relative atomic mass of 39.55 amu. It has two isotopes of relative atomic mass of 41.00 and 38.01. Find the percentage abundance of each isotope.

2) Complete the table below

Name	Structural formula	Semi-structural formula
1-Bromo-4-methylhex-3-ene		
		
		$CH_3CHBrCHBrCH(CH_3)COOH$

3) The following names are poorly written. Correct each name and rewrite it.

Name	Correct name
4-methylbutanoic acid	
3,4-dibromo-5-methylpentanoic acid	
3,methyl-2-bromopent2ene	
2-methylbut-3-ene	
6-ethylhex-2,3-diene	
Butan-3,4-diol	

I	Polar molecule.
II	Intermolecular bonding consists of dispersion forces only
III	Able to undergo addition reaction with Br_2
IV	Unsaturated.
V	Conducts an electric current only in the molten state.
VI	Highly soluble in water.
VII	Highly soluble in oil
VIII	Intra-molecular bonds are pure covalent

4) For each substance listed below select the comments that apply to that substance from the list above.

Name of molecule	**Comments that apply to the molecule**
Ethane	
But-2-ene	
CH_3OH	
$MgCl_2$	
Cl_2	
2-methylpropanoic acid	
Diamond	

5) Calculate the following.

a) The amount, in mol, of CO_2 in 66.0 grams of dry ice.

b) The mass of 0.65 mol of $CuSO_4.5H_2O$

c) The number of water molecules in 0.34 mol of $CuSO_4.5H_2O$

d) The mass of water, in grams, present in 78.0 grams of $CuSO_4.5H_2O$.