1a) Step1: if the mass of the molecular ion is odd it contains at least one N

N=14amu 105-14=91

Step2: determine max C’s

91/12=7.5 C7NH?

Step3:add enough h’s to make up the rest of the mass

C7NH7 7x12=84

1x14=14 105-(84+14)=7

Step 4:add an atom

C7NH7=C6NOH3 (2(6.5)+2-3)/2=6

b) Because it serves as the basis of all carbon based life on earth

c)Homocyclic compounds are cyclic compounds in which all ring atoms are the same

Inorganic homocyclic compounds the amular atoms are all carbons.If the molecule contains carbon atoms then its organic, most type of heterocyclic compounds studied to date are organic compounds

2ai) 12.2

ii) Bond 1= 2.4 , bond 2= 5.6 , bond 3=8.9

iii) Rf1 =distance moved by band/distance moved by solvent= 2.4/12.2=0.197

iv) Rf2 =distance moved by band/distance moved by solvent=5.6/12.2=0.459

v) Rf3 =distance moved by band/distance moved by solvent=8.9/12.2=0.73

bi) aldehyde

ii) alkene

c) aldehydes and ketones

d) –OH: alkanols/alcohol

-COH: aldelyde/alkanals

-CO: ketones/alkanones

-COCL: acid halides

-NH2: annimes

-RCONH2: amides

-RCOOH: alkanoic acid