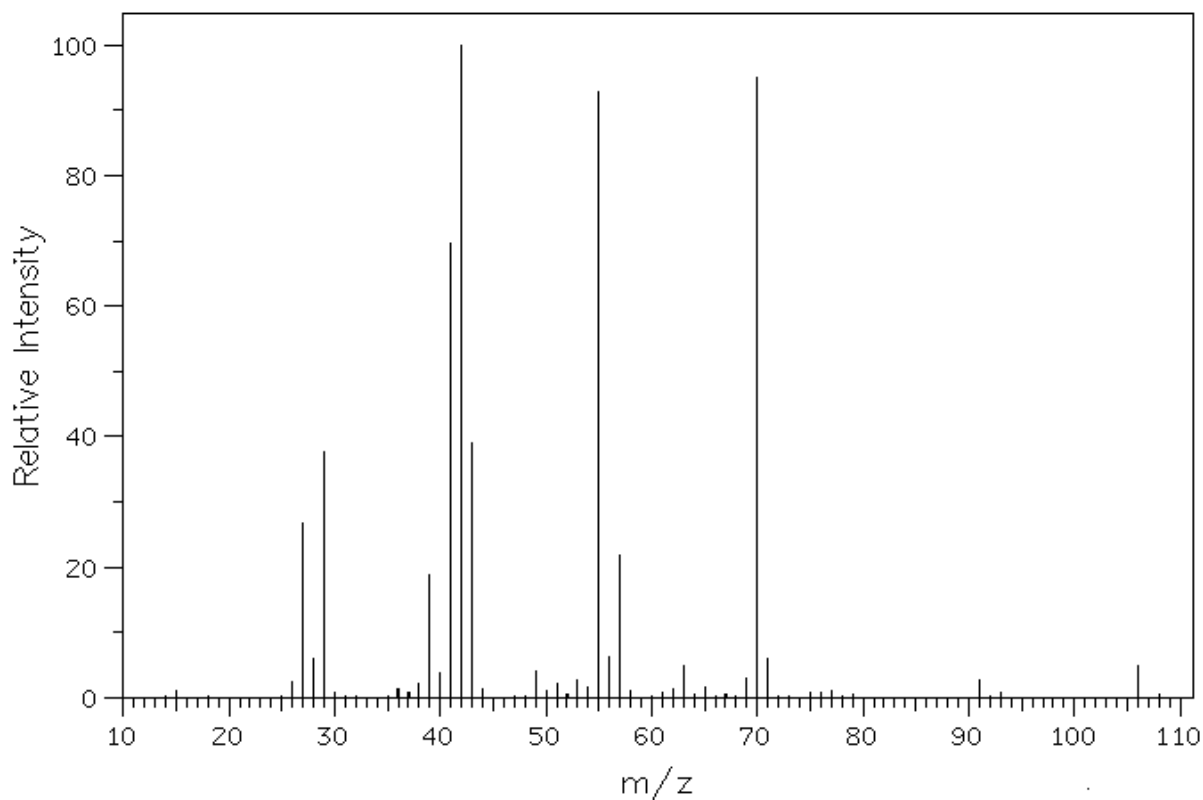


Friday Worksheet

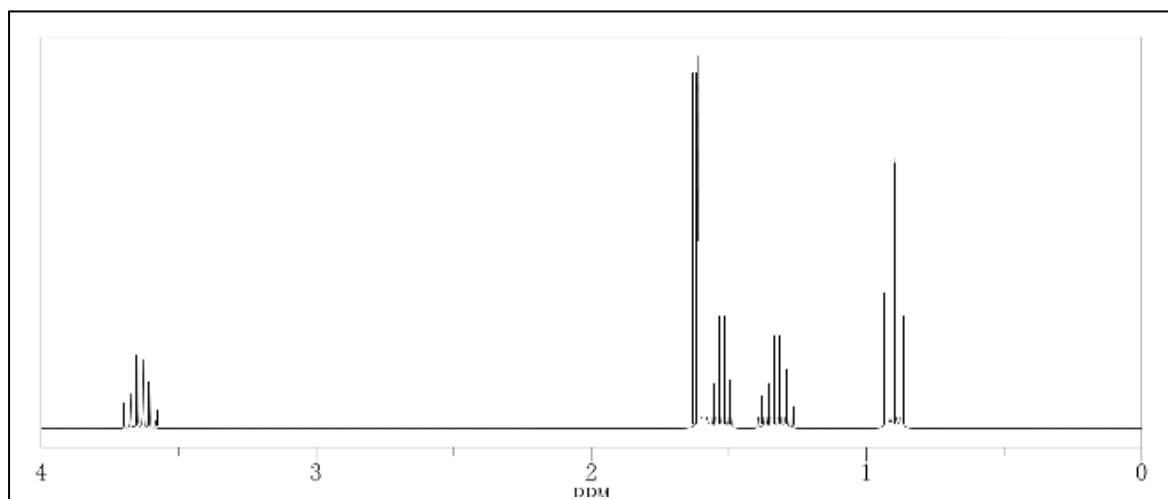
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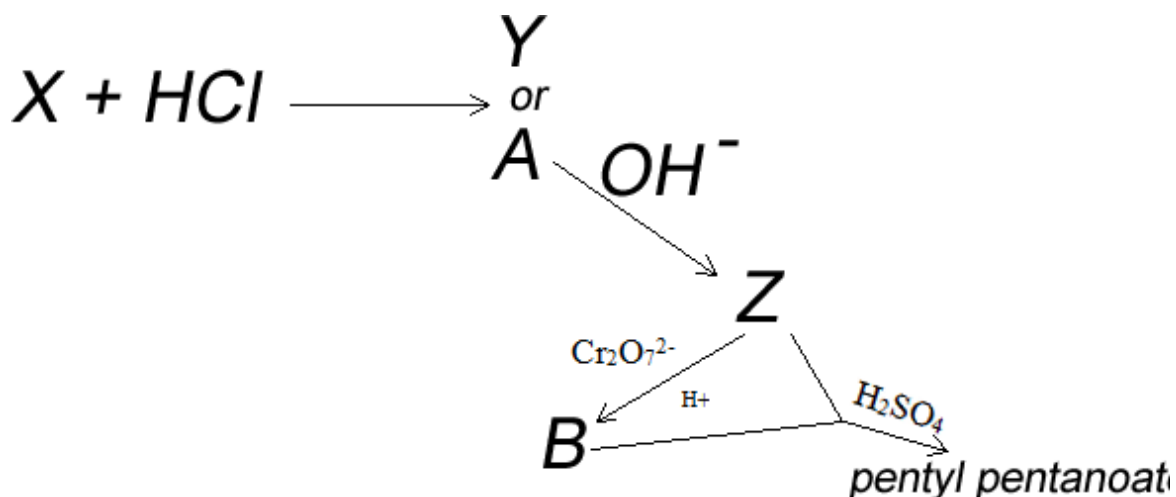
Organic worksheet 5

- 1) The products of a reaction pathway consisted of two compounds. The compounds were analysed and both found to contain 56.34% carbon, 10.33% hydrogen and 33.33% chlorine by mass. The mass spectrum of one of the compounds is shown below.



- a) Find the empirical formula of the compound?
- b) What is the molecular formula of the compound?
- c) The ^1H NMR spectrum of one of the isomers of the compound is given below. Give its systematic name.





2) Identify the following

X _____

Y _____

Z _____

A _____

B _____

3) i) What type of reaction forms pentyl pentanoate from B and Z?

ii) What type of reaction forms A or Y?

iii) What type of reaction forms B?

4) A compound was analysed and found to contain 90% carbon and 10% hydrogen by mass. A 1.60 gram sample of this compound was titrated with a 2.00 M Br_2 solution. An average titre of 30.00 mL was obtained before the brown colour persisted.

a) If the compound has three double bonds find the molecular formula of the compound.

b) The 1H NMR spectrum shows four signals. Give the systematic name of the hydrocarbon.