**Exercise #5 : MS Trivial Pursuit**

*Chem 6614 Chemical Instrumentation*

1. theory

Which way will the positively charged mass m+ curve as it traverses the magnetic field shown below ?

a) into the page b) down and on the page c) out of the page

d) up and on the page e) no change f) can’t be determined

N

m+

*S*

2. design

2.1. The magnetic sector design of an MS normally varies what parameter to

`scan’ the MS spectrum ?

2.2 Which order of components below best describes the path of the

introduced sample in an typical MS ?

a) inlet mass analyzer ion source dynode detector

b) ion source inlet mass detector HCL detector

c) inlet ion source mass analyzer dynode detector

d) mass analyzer ion source inlet TC detector

2.3. What’s `quad’ about a quadruple MS ?

2.4. Briefly...how does a TOF MS work ?

3.) hardware

a)which MS method reduces the peaks to the `parent mass’ only ?

b)what kinds of pumps are resident on the ASC GC-MS, and which is

the low pressure (high vacuum) pump ?

c)what is the usual pressure desired in the ion chamber ?

d)how are the sample masses actually `cracked’ ?

**4) Really Geeky MS trivia**

a) name three different pumping methods besides those above in 3b

b) name for kind of flange used in high vacuum work (contains slang for prisoner)

c) Define the term `resolution’ in the MS world

d) name for the detector used in the ASC MS

e) name of pressure gauge used to measure high vacuum P. (hyphenated name)

f) What gas is typically used in `CI’ MS to create the charged masses ?

g) EI stands for ?

h) 1 micron in pressure is how many millitorr ?

i) another name for the mass `accelerator’ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

j) most compact MS design

k) best resolution MS design

l) most commonly used MS design

m) simplest detector ?