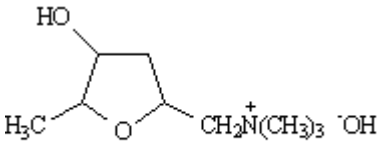
CH1010 Tutorial 4

Name:

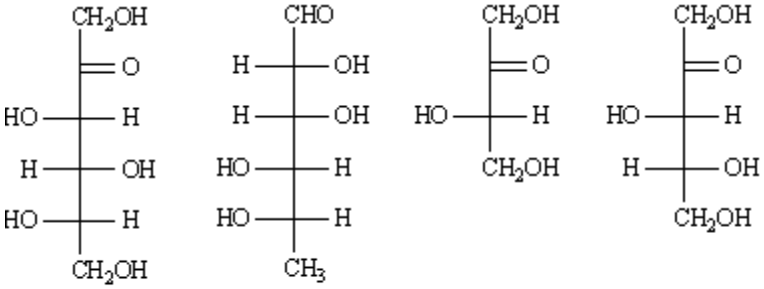
1. Place asterisks at all the **chirality centers** (stereocentres) in the molecule below.



muscarine

- What **class of compound** would you expect this molecule, which is a toxin found in certain mushrooms (*Inocybe geophylla*), to belong to?

2.



a. Sorbose b. Rhamnose c. Erythrulose d. Xylulose

Identify each of these sugars according to carbon chain (triose, tetrose …) and functional group (aldose, ketose).

3. Draw a **Fischer projection** of D-galactose and a **Haworth projection** of α-D-galactopyranose.

4. Draw a section of **primary structure** of a peptide using the following sequence:
Ala-Gly-Asp-Cys-Lys-Asp
To do this you will need to provide a **line-angle structure** and indicate the **peptide bonds**.

5. Explain the molecular basis for how **size exclusion chromatography** (**SCE**) is able to separate proteins.

6. Valine is described as an *essential* amino acid. What does this mean?

7. Porcine dynorphin is a neuropeptide having 17 amino acid residues. Its structure is:

Tyr-Gly-Gly-Phe-Leu-Arg-Arg-Ile-Arg-Pro-Lys-Leu-Lys-Trp-Asp-Asn-Gln

What fragments would result if dynorphin were cleaved by trypsin?