**CHEM121**

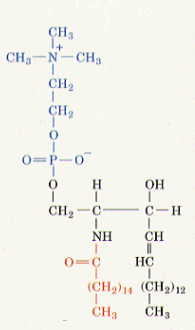
**Lecture 6 – Worksheet**

1. Draw and name a glycerophospholipid that consists of the following molecules:

Glycerol, myristic acid(14:0),oleic acid(18:1 ∆ cis 9),phosphate and

Choline {-CH2-CH2-N+(CH3)3} (6 marks)

2.



a. What type of lipid is shown above? **(1 mark)**

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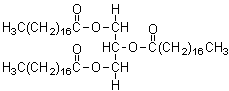
b. What is the main function of this type of lipid**? (1 mark)**

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c. Other than fatty acids, list **TWO** other components of this molecule. **(2 marks)**

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3. Figure 4 below is a lipid known as tristearin.



a. Name the type of lipid shown above. **(1 mark)**

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b. **Circle** an ester bond and **label** ‘E’ **(1 mark)**

c. Is the fatty acids present in figure 4 above saturated or unsaturated? **(1 mark)**

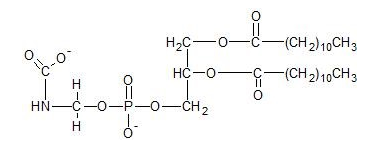
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d. Write the numerical abbreviation for the fatty acid present. **(1 mark)**

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4. How can we differentiate between a glycerophospholipid and a sphingophospholipid?

5. Examine the membrane lipid pictured below and answer the following questions.

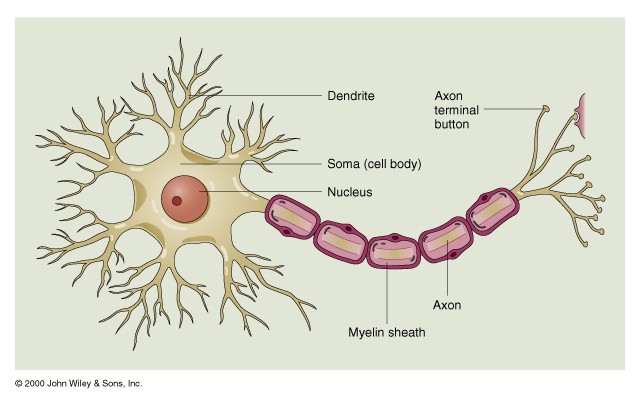


(a) Is this lipid classified as a phospholipid or a triglyceride? How can you tell?

(b) Is this lipid considered a sphingolipid or a glycerophospholipid? How can you tell?

(c) What fatty acid chains are used in this lipid? Are they saturated or unsaturated? What functional group enables them to connect to the backbone?

6. The following diagram represents the structure of a neuron:



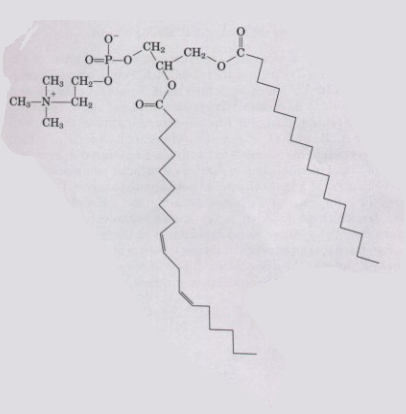
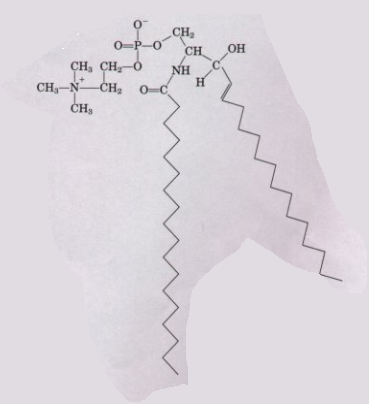
1. Identify the region where sphingophospholipids are found. (1 mark)

b) Draw the structure of the alcohol backbone found in Sphingomyelin. ((3 marks)

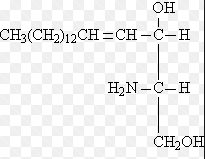
7. From the list below, choose the appropriate name for the following structures. **(5 marks)**

|  |  |
| --- | --- |
| phospholipid | sphingolipid |
| diglyceride | sphingosine |
| fatty acid |  |

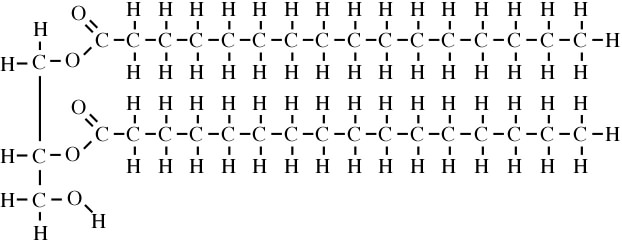
(a) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (b) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(c) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



(d) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[](http://www.google.tt/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=0ahUKEwjU3KbCtdDWAhUHJiYKHdXADsEQjRwIBw&url=http://www.indiana.edu/~oso/Fat/Definitions.html&psig=AOvVaw3dnz8nT8Bnz7xbVLFnqXiQ&ust=1506981429513551)

(e) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

