

**CIRCLE ONLY 1 ANSWER PER QUESTION. (Please put in YOUR section folder on front table.)**

1. (3 pts) Coconut oil contains only a very small amount of unsaturated fatty acids. How can it still have a low melting point?

A. It contains a lot of long-chain fatty acids.

**\*B. It contains a lot of short-chain fatty acids.**

C. It has only a few hydrogen bonds per fatty acid chain.

D. A and C are correct.

E. B and C are correct.

F. None of these is correct.

2. (3 pts) Increasing the content of cholesterol in a membrane would:

A. Increase fluidity and lower the temperature at which the membrane transitions from the gel to the liquid crystalline state.

**\*B. Decrease fluidity and raise the temperature at which the membrane transitions from the gel to the liquid crystalline state.**

C. Decrease fluidity and lower the temperature at which the membrane transitions from the gel to the liquid crystalline state.

D. None of the above.

3. (2 pts) Arachidonic acid is a precursor to what kinds of signaling molecules?

**Eicosanoids (or prostaglandins, leukotrienes, thromboxanes)**

4. (3 pts) You determine that a certain cell has two different transporters for the amino acid glutamine. Transporter X has a  $K_t$  for glutamine of 0.1 mM and Transporter Y has a  $K_t$  of 5 mM for glutamine. You can conclude that:

A. Transporter X and Y are both saturated with substrate at 5 mM glutamine.

B. Transporter X has a lower  $V_{max}$  than Transporter Y.

C. Transporter X operates much faster than Transporter Y.

D. All of the above.

**E. None of the above.**

5. (3 pts) The  $\text{Na}^+\text{K}^+$  ATPase:

A. Mediates active transport.

B. Is an antiporter.

C. Creates transmembrane potential.

D. A and B are true.

E. B and C are true.

**F. All of the above are true.**

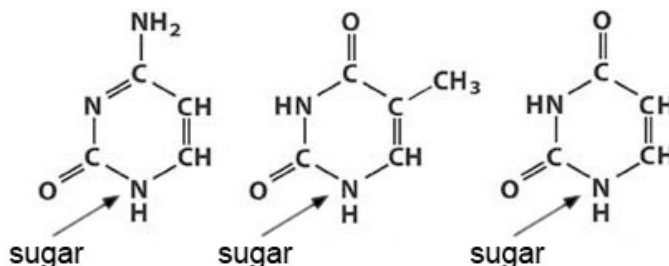
6. (3 pts) Name the components of *deoxynucleotides*. **Be as specific as you can.**

**a nitrogenous base: A, T, G, or C**

**deoxyribose**

**phosphate**

7. (3 pts) Write the correct **name for each of the bases** directly below each of the structures shown, and indicate the **location of sugar attachment** in a nucleoside with an arrow to the appropriate atom.



Names: cytosine      thymine      uracil

**N-glycosidic bonds for sugar attachment are to "bottom" N on each pyrimidine ring.**