

*Tip: Answer the questions you know first. At least guess on everything before you turn this in.*

**Vocabulary:** Briefly define these terms in the space provided, as though you were speaking to someone who never took this class. (3pts each)

1. Anabolism
  
2. Feedback inhibition
  
3. Strict aerobe
  
4. Intermediate host

**Short Answers:** Words, drawings, charts – all are welcome.

5. Please identify the appropriate domain and kingdom for each of these groups. 3pts

<u>Domain</u>	<u>Kingdom</u>	<u>Domain</u>	<u>Kingdom</u>
Molds		Helminths	
Yeasts		Plants	
Algae		Arthropods	
Protozoa		Slime molds	
<i>Clostridium</i> spp.			

6. Why are cellular slime molds interesting? (What can they teach us about ourselves? Why are they interesting in the context of the evolution of multicellular animals?)

7. a. Ticks have eight legs and fleas have six legs. How are their body shapes different?

b. What do they feed on?

8. a. Why are bacterial cultures and embryonated eggs often used to grow viruses rather than fully-developed animals?

b. Why are animals then still used in some situations?

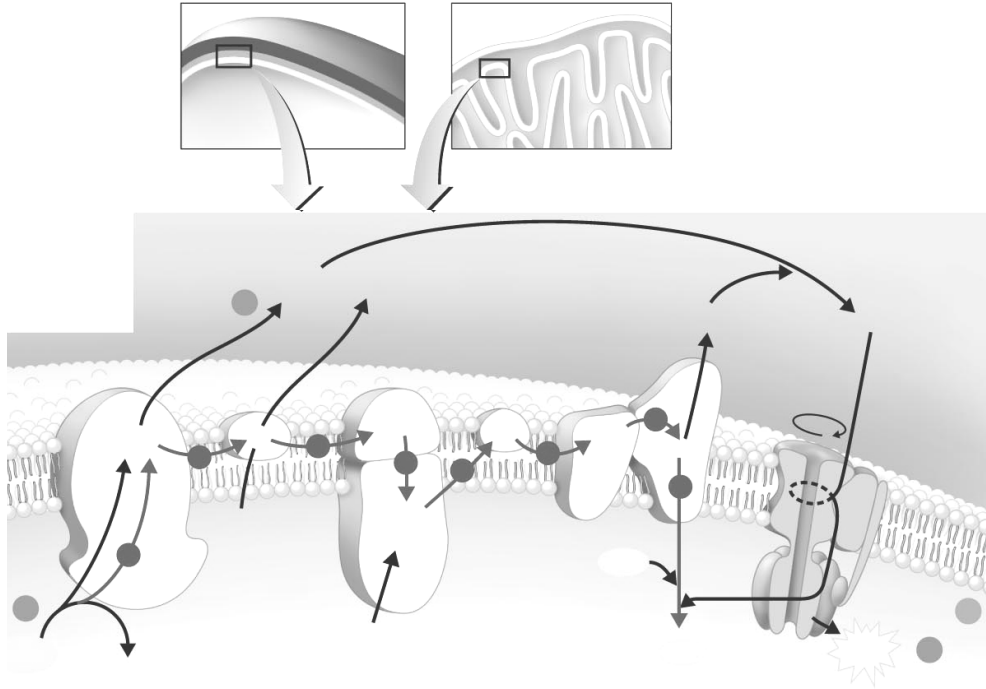
9. Why are viruses sometimes implicated in (or blamed for) causing cancer?

10. How does a little tiny prion cause trouble? (How does it work?)

11. Label the end-products of glycolysis with a G. 3pts	glucose	pyruvic acid
12. Label the products of the Krebs cycle with a K. (Can be reused; not all will be labeled.) 4pts	H <sup>+</sup>	NADH
	NADPH	CO <sub>2</sub>
	H <sub>2</sub> O	O <sub>2</sub>
	FADH <sub>2</sub>	H <sub>2</sub>
	ATP	

13. Why do bacteria generally require a specific temperature and pH to grow? In other words, what are the physical molecules that cannot tolerate large deviations from these optimal conditions, and why are they so picky? 4pts

14. This is figure 5.16, showing electron transport and the chemiosmotic generation of ATP. Explain what is happening here as best you can. (You may label parts if you wish. Some of the dark circles were originally step numbers, not objects.) 6pts



15. In 2010, researchers found that bacteria in the Gulf of Mexico were consuming oil spilled from BP's busted drilling rig. They live up to 1000m underwater. Very little light penetrates depths beyond 200m. Oil is organic, and there is very little CO<sub>2</sub> deep in water. In what category would you place these bacteria?

- A) photoautotroph
- B) chemoheterotroph
- C) photoheterotroph
- D) chemoautotroph
- E) none of these

16. A culture medium on which only gram-positive organisms grow is called a(n):

- A) selective medium.
- B) differential medium.
- C) enrichment culture.

17. A culture medium on which a yellow halo surrounds *Staphylococcus aureus* colonies is called a(n):

- A) selective medium.
- B) differential medium.
- C) enrichment culture.

18.  $\text{Log}_{10} 10,000,000 = \underline{\hspace{2cm}}$

19. Use this graph to answer parts (a) and (b):

a. About how many bacteria are present when time=2 days? 2pts

b. Name the growth phase labeled "B."

