

Bio121
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Review Questions
Lecture 11

1. What cells have a plasma membrane? (Eukaryotic, prokaryotic or both?)
2. What cells have membrane-bound organelles? (Eukaryotic, prokaryotic or both?)
3. What is the advantage of having membrane-bound organelles? Explain.

4. What are the primary functions of membranes?

5. What are the main components of membrane structure?

6. Why is the lipid bilayer called amphipathic?
7. What is the main function of the lipid bilayer?

8. Describe which molecules can pass through the membrane rapidly versus slowly and explain why there is a difference.

9. What is the basic structure of a phospholipid?

10. Is there only one type of phospholipid within cells? If not, what part(s) of the phospholipid structure varies?

11. How does unsaturated/saturated fatty acids affect membrane flexibility?

12. Does the phospholipid composition vary in the inner and outer leaflets of the lipid bilayer?

13. Why are membrane proteins so critical?

14. What are the different ways proteins can associate with membranes?

14. What are the different ways proteins can associate with membranes?
15. What are the different functions of transmembrane proteins?
16. Why is transport across the membrane important for cellular function?
17. Is the protein to lipid ratio the same for all membranes?
18. What molecules in the membrane are sugars found on? What is the primary function of the sugars on these molecules? What is a specific example of this function?
19. What side of the membrane are sugars found on? Why are the sugars of glycoproteins (and glycolipids) found on this side of the membrane?
20. What is cholesterol and what is its function?
21. What is the submembrane protein meshwork? Where is it found? What is its function?
22. What are the key functions of the nucleus and ER?
23. What are the key functions of the endosomal system?
24. What are the key functions of mitochondria and chloroplasts?
25. What are the key functions of the peroxisome?
26. What are the key functions of the vacuole?
27. What organisms have vacuoles?