

Supplemental Instruction – Biology 2300

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Session: 12 – Ion Channels

1. True or False: Passive transport requires no energy
2. Active transport moves solutes \_\_\_\_\_ their concentration gradient
3. True or False: Small, hydrophobic molecules require protein channels to move through the membrane
4. What are three types of passive transport?
5. Define diffusion
6. During diffusion, particles move from areas of \_\_\_\_\_ concentration to areas of \_\_\_\_\_ concentration
7. Give examples of small, uncharged polar molecules that can cross the lipid bilayer

8. True or False: polar (or charged) substances easily cross cell membranes

9. True or False: Ions can easily diffuse across the membrane

10. Which of the following is at a highest concentration inside the cell?

a. Na

b. K

c. Ca

d. H

e. Cl

11. Define membrane potential

12. Define resting membrane potential

13. What is the difference between transporters and channels?

14. When comparing transporters and channels, which would be able to transport proteins the fastest?

15. An electrochemical gradient is the driving force that determines which way an ion will move across a membrane. Electrochemical gradients are influenced by

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and the \_\_\_\_\_.

16. Compare osmosis and diffusion

17. What is an aquaporin?

18. True or False: Passive transporters require no energy to function

19. What is an example of a passive transporter?

a. How does this transporter work?

20. What are three types of active transporter pumps?

21. Write everything you know about sodium potassium pumps

22. Write everything you know about calcium pumps