Name _____ Class_____Date_____

Skills Worksheet

Critical Thinking

Look-Alikes

In the space provided, write the letter of the term or phrase that best describes how each numbered item looks.

_____ 1. channel protein

_____ 2. cell membrane

_____ 3. phospholipid molecule

_____ 4. diffusion

a. crowd of people filling a room
b. sandwich
c. tube
d. tadpole

Work-Alikes

In the space provided, write the letter of the phrase that best describes how each numbered item functions.

_____ 5. carrier protein

_____ 6. sodium-potassium pump

_____ 7. endocytosis

_____ 8. exocytosis

_____ 9. cell-surface marker

a. identification card
b. boat bringing immigrants
c. outgoing international flight
d. football player running with the ball
e. bailer dumping water out of a leaking boat

Trade-Offs

In the space provided, write the letter of the bad news item that best matches each numbered good news item below.

Good News

_____ 10. Very small, nonpolar molecules can diffuse across a cell membrane.

_____ 11. Molecules can easily diffuse down a concentration gradient.

_____ 12. Water molecules move easily by osmosis across a cell membrane.

_____ 13. Through cellular communication, enzymes can be activated to speed up vital chemical reactions.

Bad News

a. Most polar molecules cannot move through a cell membrane
b. On their own, some chemical reactions occur too slowly to keep a cell alive.
c. A cell in a hypotonic solution can burst; a cell in a hypertonic solution can shrivel up.
d. It takes energy to move molecules against a concentration gradient.

Linkages

In the spaces provided, write the letters of the two terms or phrases that are linked together by the term in the middle.

14. ____ diffusion _____
15. ____ osmosis _____
16. ____ sodium-potassium pump _____
17. _____ isotonic _____
18. _____ membrane protein _____
19. _____ carrier protein _____
20. _____ receptor protein _____

a. hypotonic
b. higher concentration
c. channel protein
d. polar parts pulled toward water
e. signal molecule
f. hypertonic
g. lower concentration
h. Na^+ moving out of the cell
i. water
j. second messenger
k. K^+ moving into the cell
l. changes shape
m. nonpolar parts repelled by water
n. facilitated diffusion

Analogies

An analogy is a relationship between two pairs of terms or phrases written as a : b :: c : d. The symbol : is read as "is to," and the symbol :: is read as "as." In the space provided, write the letter of the pair of terms or phrases that best completes the analogy shown.

_____ 21. cell membrane : homeostasis ::
a. insulation : constant temperature
b. nuclear membrane : DNA
c. cell wall : osmosis
d. refrigerator : freezer

_____ 22. transport protein : escort ::
a. enzyme : lipid bilayer
b. receptor protein : sensor
c. light : daylight hours
d. channel : port

_____ 23. people : from newspapers ::
a. second messenger : from target cells
b. signal molecules : from receptor proteins
c. signal molecules : from second messengers
d. target cells : from signal molecules

_____ 24. uneven distribution : equilibrium ::
a. osmosis : carrier protein
b. permeability : activation
c. active transport : diffusion
d. ATP : glucose