

Name: _____

ID# _____

22. **When a reaction reaches equilibrium,**
- there is no longer entropy in the system.
 - the chemical reactions cease.
 - the rate of the forward and reverse reactions are equal.***
 - the concentration of reactants equals the concentration of products.
23. **ATP can be used to drive anabolic reactions because _____.**
- ATP hydrolysis is an endergonic reaction
 - ATP hydrolysis is an exergonic reaction***
 - ATP hydrolysis is also an anabolic reaction
 - ATP hydrolysis results in the consumption of free energy
24. **The ___ component of the cell membrane functions as a selective barrier, while the ___ component has specific functions such as transport, recognizing other cells, and binding to other cells.**
- carbohydrate; nucleic acid
 - protein; lipid
 - lipid; protein***
 - lipid; carbohydrate
25. **Winter rye is a crop plant that germinates in the fall. The seedlings survive over the winter, and then continue to develop in the spring. How are the membranes of winter rye able to remain fluid when the temperature becomes extremely cold?**
- The percentage of unsaturated phospholipids in the membrane is increased.
 - The percentage of saturated phospholipids in the membrane is increased.
 - The percentage of cholesterol molecules in the membrane is increased.
 - The percentage of both unsaturated phospholipids and cholesterol is increased.***
26. **Each of the following characteristics are true for both facilitated diffusion and active transport EXCEPT**
- a concentration gradient is present.
 - the direction of transport is always with the concentration gradient.***
 - transport proteins can become saturated.
 - transport proteins are specific for the molecules being transported.
27. **Which of the following does not ALWAYS alter the activity of the enzyme?**
- temperature
 - pH
 - reactant concentrations***
 - inhibitors
28. **Which of the following is a reasonable explanation for why unsaturated fatty acids help keep a membrane more fluid at lower temperatures?**
- The double bonds form a kink in the fatty acid tail, forcing adjacent lipids to be spaced further apart.***
 - Unsaturated fatty acids have a higher cholesterol content.
 - Unsaturated fatty acids permit more water in the interior of the membrane.
 - The double bonds block interaction among the hydrophilic head groups of the lipids.