

Name: _____

ID# _____

This exam is **TEST FORM A** (please indicate this on your Scantron card)

Indicate the best choice for each question on the Scantron card provided (1 mark ea)

1. What were the key elements in the evolution of hoofed mammals into whales?
 - a. genetic variation
 - b. genetic variation, and survival of individuals that used the water to avoid predation
 - c. **genetic variation, survival of individuals that used water to avoid predation, and selection of strains of individuals that switched their diets to fish**
 - d. genetic variation, and selection of strains of individuals that switched their diets to fish

2. A global pattern of environmental diversity results from
 - a. latitudinal variation in incoming solar radiation.
 - b. Earth's orbit around the sun and latitudinal variation in incoming solar radiation.
 - c. Earth's rotation on its axis, and latitudinal variation in incoming solar radiation.
 - d. **latitudinal variation in incoming solar radiation, Earth's rotation on its axis, and its orbit around the sun.**

3. According to the first law of thermodynamics,
 - a. energy can be created and destroyed.
 - b. **energy only changes forms.**
 - c. matter can be created and destroyed.
 - d. matter only changes forms.

4. What will happen to an animal cell placed in a hypotonic solution?
 - a. it will remain the same size
 - b. **it will swell, and perhaps burst**
 - c. it will shrink

5. Reversible reactions in a cell rarely reach equilibrium because
 - a. a cell at equilibrium is dead.
 - b. **the products are generally reactants in other reactions and are thus immediately used.**
 - c. most reactions in a cell are not reversible, allowing the cell to devote additional resources to regulating the few reversible reactions that do occur.
 - d. cells have no way of measuring the relative ratios of reactants and products.

6. Which of the following best describes how enzymes function?
 - a. **increasing the rate of a reaction.**
 - b. adding additional reactants to the system.
 - c. slowing the rate of some reactions and increasing the rate of other reactions.
 - d. changing the ΔG of the reaction.

7. Which reaction is likely to have more products than reactants when the reaction reaches equilibrium?
 - a. $\Delta G = +25 \text{ kcal/mol}$
 - b. $\Delta G = -25 \text{ kcal/mol}$
 - c. $\Delta G = +100 \text{ kcal/mol}$
 - d. **$\Delta G = -100 \text{ kcal/mol}$**