Biology EOC Review 4
Cells and Energy

Multiple Choice Write the letter that best answer.

1. Which of the following statements is true for *all* cells?
   A. They use solar energy.
   B. They use photosynthesis.
   C. They use chemical energy.
   D. They use chemosynthesis.

2. Which phrase best describes the function of the ATP molecule?
   F. stores energy.
   G. absorbs energy.
   H. carries energy.
   J. converts energy.

3. Where does the chemical energy to produce ATP come from?
   A. the conversion of ATP to ADP
   B. the use of chemicals from the environment to build sugars
   C. the addition of a phosphate group to ATP
   D. the breakdown of carbon-based molecules into smaller molecules

4. Energy is released from an ATP molecule for cellular processes when it
   F. has a phosphate group removed.
   G. stores an extra phosphate group.
   H. converts a phosphate group to ADP.
   J. produces a sugar molecule.

5. Which of the following is the source of energy used in chemosynthesis?
   A. sunlight
   B. chemical compounds
   C. heat from hydrothermal vents
   D. amino acids

6. Which of the following statements best describes the process of photosynthesis?
   F. Plants use oxygen to make simple sugars.
   G. Chlorophyll builds sugars in the thylakoid membrane.
   H. Light breaks down water molecules and releases carbon dioxide.
   J. Chloroplasts absorb sunlight and store chemical energy.

7. What is the term for an organism that makes its own source of chemical energy?
   A. decomposer
   B. chloroplast
   C. producer
   D. protist

8. The main light-absorbing molecules found in plant leaves are called
   F. chloroplasts.
   G. chlorophyll.
   H. thylakoids.
   J. grana.

9. The function of the light-dependent reactions is to
   A. build sugars.
   B. release carbon dioxide.
   C. capture and transfer energy.
   D. form water molecules.

10. The light-independent reactions of photosynthesis need
    F. carbon dioxide.
    G. water.
    H. oxygen.
    J. cellulose.

11. What molecule carries chemical energy that cells use for their functions?
    A. ADP
    B. ATP
    C. NAD+
    D. NADP+

12. Which of the following molecules found in the food we eat is most commonly broken down to make ATP?
    F. carbohydrates
    G. lipids
    H. proteins
    J. vitamins

13. Which of the following directly provides the energy needed for cell functions?
    A. A phosphate group is removed from ATP.
    B. ADP loses a phosphate group.
    C. Electrons are passed to proteins.
    D. Oxygen picks up electrons.

14. Chemosynthesis is a process through which some organisms use energy from chemicals in their environment to build sugars in the absence of
    F. ATP.
    G. water.
    H. glucose.
    J. sunlight.

15. Which of the following is a reactant in photosynthesis?
    A. oxygen
    B. glucose
    C. carbon dioxide
    D. ammonia

16. Where in plant cells are the energy-absorbing molecules for photosynthesis located?
    F. stroma
    G. ATP synthase
    H. thylakoids
    J. mitochondria

17. What happens to the sugars that are made during photosynthesis?
    A. They move directly into an electron transport chain.
    B. They go back into the Calvin cycle.
    C. They can be used for cellular respiration.
    D. They make ATP by bonding together.

18. The part of cellular respiration that needs oxygen takes place inside the
    F. nucleus.
    G. mitochondria.
    H. thylakoid.
    J. cytoplasm.