

## D2 Life Science written questions:

1. Which of the following is the primary function of the respiratory system?
  - a. Transporting nutrients
  - b. Producing hormones
  - c. Eliminating toxic wastes
  - d. Exchanging gases
2. What is the basic unit of life?
  - a. Atom
  - b. Cell
  - c. Organ
  - d. Tissue
3. Which of the following is an example of an omnivorous animal?
  - a. Lion
  - b. Gorilla
  - c. Cow
  - d. Human
4. Penguins and dolphins have similar flippers but they originate from different anatomical structures. What is this called in evolutionary biology?
  - a. Homologous structures
  - b. Antiparallel structures
  - c. Analogous structures
  - d. Parallel structures
5. Which of the following would a tree not need to conduct photosynthesis?
  - a. Water
  - b. Hydrogen
  - c. Carbon monoxide
  - d. All of the above are needed
6. Which of the following properties of water explains how water can travel up xylem in plants?
  - a. Cohesion
  - b. Adhesion
  - c. Surface tension
  - d. Both A and B
7. Which of the following is responsible for carrying out photosynthesis in plants?
  - a. Chloroplasts
  - b. Vacuoles
  - c. Nucleoli
  - d. Lysosomes
8. Which of the following is an abiotic factor in an ecosystem?

- a. Dead leaves
  - b. Mushrooms
  - c. Water
  - d. Moss
9. Which of the following is responsible for controlling the levels of sugar in the blood?
- a. Pancreas
  - b. Thyroid gland
  - c. Pituitary gland
  - d. Adrenal gland
10. In the case of barnacles and whales, only the barnacles benefit from attaching to the whales, but at no biological cost to the whale. This type of symbiotic relationship is known as:
- a. Parasitism
  - b. Mutualism
  - c. Equalism
  - d. Commensalism
11. What is the shape of DNA?
- a. Beta sheet helix
  - b. Alpha helix
  - c. Double-helix
  - d. Triple-helix
12. Which of the following does the human body NOT use as a source of energy?
- a. Lipids
  - b. Nucleic Acids
  - c. Protein
  - d. Polysaccharides
13. Fish hearts have \_\_\_ chambers; human hearts have \_\_\_ chambers.
- a. 4, 2
  - b. 3, 3
  - c. 3, 4
  - d. 2, 4
14. Which of the following is NOT a type of bond found in DNA?
- a. Hydrogen bonding
  - b. Ionic bonding
  - c. Disulfide linkages
  - d. Covalent bonding
15. If a molecule is small and nonpolar, how would it most likely travel across a cell membrane?
- a. Passive diffusion
  - b. Facilitated diffusion

- c. Active transport
  - d. Endocytosis
16. Which of the following would be a decomposer in a certain ecosystem?
- a. Vulture
  - b. Lion
  - c. Cactus
  - d. Dung beetle
17. If a fungus uses part of a plant's food resources and also gives the plant certain nutrients that are hard to find, this relationship is an example of:
- a. Commensalism
  - b. Parasitism
  - c. Mutualism
  - d. Endosymbiosis
18. If one species separates into two species because of the formation of an uncrossable river overtime, what is this an example of?
- a. Genetic drift
  - b. Sympatric speciation
  - c. Allopatric speciation
  - d. Genetic flow
19. What will happen to a blood cell (that has a salt concentration of 0.9%) if it is placed in pure water?
- a. Nothing
  - b. Shrivell
  - c. Lose salt to the environment
  - d. Lyse
20. What is the role of the golgi apparatus?
- a. Providing energy for the cell
  - b. Protein synthesis
  - c. Detoxification
  - d. Transportation and modification of protein and lipids
21. Which of these animals is most related to a red panda?
- a. Skunk
  - b. Raccoon
  - c. Coyote
  - d. Great Panda
22. Which of the following foods is most composed of carbohydrates?
- a. Bread
  - b. Cheese
  - c. Fish
  - d. Butter

23. What property does water have that makes it an effective coolant?
- Cohesion
  - High specific heat capacity
  - High surface tension
  - Adhesion
24. If the template strand of the DNA reads 3' ATG 5', what will the mRNA strand created during transcription read?
- 3' ATG 5'
  - 5' ATG 3'
  - 3' UAC 5'
  - 5' UAC 3'
25. If a cell has  $2n$  chromosomes and goes through meiosis, how many chromosomes will each of the resulting cells have afterwards?
- $4n$
  - $2n$
  - $n$
  - None of the above
26. In which of the following types of cells would you most likely find more smooth ER?
- Epithelial cells
  - Liver cells
  - Steroid-producing cells
  - A and C
27. Which of the following is found in eukaryotes but not in prokaryotes?
- DNA
  - Ribosomes
  - Nucleolus
  - Cytoplasm
28. Which of these is a product of photosynthesis?
- Glucose
  - Carbon dioxide
  - ATP
  - Water
29. Which of the following can be found in a plant cell but not an animal cell?
- Cell wall
  - Cell membrane
  - Mitochondria
  - Nucleus
30. Which protein is the most abundant in the world?
- Collagen
  - Rubisco

- c. Sonic hedgehog protein
- d. None of the above