

Nervous System Quiz Review

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2. B 3. A 4. D 5. A 6. C 7. B 8. D

11. Cell, tissue, organ, organ system.

12. Unless cells of the body are kept at a temperature within a certain range, supplied with energy, bathed in fluid, and cleansed of waste – in short, unless homeostasis is maintained – permanent injury or death can occur.

13. The largest part of a typical neuron is the cell body, which contains the cell nucleus and the cytoplasm. The cell body is where much of the cell's metabolic activity occurs. Short, branched extensions called dendrites carry impulses from the environment or other neurons toward the cell body. The long fibre that carries impulses away from the cell body is the axon, which ends in small swellings called axon terminals.

14. During a resting potential, potassium ions diffuse across a neuron's cell membrane more easily than do sodium ions, resulting in a negative charge inside the cell. During an action potential, the cell membrane becomes more permeable to sodium ions, resulting in a reversal of charges.

15. According to the all-or-none principle, any stimulus that is stronger than the threshold will produce an impulse and any stimulus below the threshold will not produce an impulse. Basically, there is a nerve impulse, or there is not – no partial impulses.

17. A reflex allows an organism to respond to danger quickly, which is an advantage for survival.

20. Rods, which are very sensitive to light, and cones, which are sensitive to color, but not as sensitive to light, are photoreceptors in the retina. Their function is to convert light into impulses that are carried through the optic nerve to the central nervous system.