

**✓ CHECK YOUR LEARNING****Suggested Answers**

1. The functions of the nervous system include responding to the environment; controlling automatic functions such as heartbeat and breathing; controlling voluntary movement; sensing (sight, hearing, touch, taste, smell), thinking, and perceiving the surrounding environment.
2. Diagram should show cell body, nucleus, axon with myelin sheath, and the spiny nerve endings (dendrites, not named in the text).
3. The series of events that occur when swinging a baseball bat at an approaching baseball are: eyes receive input of ball coming and signal to brain that ball is coming; brain sends signal to spinal cord to swing; spinal cord sends signal to arm and trunk nerves to swing; muscles in arms and trunk receive signal and contract; batter swings.
4. Three examples of the nervous system coordinating activities are nerve impulses that increase breathing and heartbeat rate when exercise takes place, and the nerve impulses that control digestion and appetite for the digestive system.
5. The function of sensory receptors is to tell the body what is happening in the outer world. For example, sensory receptors in the eye allow people to see. Hearing receptors in the inner ear allow people to hear.
6. A CT scan or MRI scan can be used to pinpoint brain and spinal cord injuries. The advantage of this technology is that any injuries to the brain or spinal cord can be viewed without operating on the patient. The exact location and nature of the injury can be determined with minimum risk to the patient.
7. The hearing loss following Jila's accident may be a result of damage to the sensory receptor cells in Jila's ear.