SUMMARY NERVOUS SYSTEM

In mammals, the nervous system is made up of the central nervous system and the peripheral nervous system. The nervous system coordinates and helps to regulate body functions.

Neurones transmit information in the form of electrical impulses.
A reflex arc consists of a sensory neurone, relay neurone and motor neurone.
An impulse produced in a receptor passes along the sensory neurone, into the relay neurone, then the motor neurone, and then to an effector. The effector takes action, bringing about a reflex action. Reflex actions are fast and automatic.

A place where two neurones meet is called a synapse.

The arrival of an electrical impulse in the first neurone at a synapse stimulates it to release molecules of neurotransmitter into the synaptic gap. The neurotransmitter diffuses across the gap and binds with receptor proteins on the membrane of the second neurone. This stimulates an electrical impulse in the second neurone.

As there is neurotransmitter on only one side at a synapse, the impulse can only cross the synapse in one direction.

Sense organs are groups of receptor cells that respond to specific stimuli.

Hormones are chemicals that are secreted by glands and travel in the blood. They alter the activity of target organs. The adrenal glands secrete adrenaline, which prepares the body for fight or flight by increasing breathing rate, heart rate and the diameter of the pupil.

Adrenaline increases metabolic activity, increasing blood glucose concentration and the supply of glucose and oxygen to body organs, by increasing heart rate and breathing rate

Nervous control acts more quickly than hormonal control but lasts for a shorter time.