FLASH CARDS

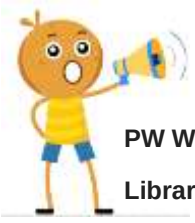
CLASS : Class 11th **SUBJECT : Zoology**

CHAPTER: Neural Control and Coordination

Terminology	Description
Neural System	A system that controls and coordinates body activities.
Human Neural System	The human neural system is divided into two parts : (i) the central neural system (CNS) (ii) the peripheral neural system (PNS)
Central Nervous System (CNS)	The CNS includes the brain and the spinal cord and is the site of information processing and control.
Peripheral Nervous System (PNS)	The PNS comprises all the nerves of the body associated with the CNS (brain and spinal cord). The nerve fibres of the PNS are of two types: (a) afferent fibres (b) efferent fibres The PNS is divided into two divisions called somatic neural system and autonomic neural system.
Neuron	A neuron is a microscopic structure composed of three major parts, namely, the cell body, dendrites and axon. The cell body contains cytoplasm with typical cell organelles and certain granular bodies called Nissl's granules.
Types of Neuron	Based on the number of axon and dendrites, the neurons are divided into three types, i.e., a. multipolar (with one axon and two or more dendrites; found in the cerebral cortex), b. bipolar (with one axon and one dendrite, found in the retina of eye) and c. unipolar (cell body with one axon only; found usually in the embryonic stage).
Nerve Impulse & Conduction	Resting Membrane Potential: Electrical potential across membrane at rest (-70 mV). Action Potential: Rapid change in membrane potential during impulse. Depolarization: Influx of Na^+ ions. Repolarization: Efflux of K^+ ions. Saltatory Conduction: Jumping of impulse between nodes in myelinated axon. Sodium-Potassium Pump: Maintains ionic balance.

The resting phase	The **resting phase** is the period when a neuron is not transmitting an impulse and maintains a resting membrane potential of about **–70 mV**. During this phase, the sodium–potassium pump maintains ionic balance by keeping more Na^+ outside and K^+ inside the cell.
Action potential	An **action potential** is a rapid, temporary reversal of the membrane potential that occurs when a neuron transmits a nerve impulse. It involves **depolarization** (Na^+ enters the cell) followed by **repolarization** (K^+ leaves the cell), restoring the membrane to its resting state.
Synaptic Transmission	Synapse: Junction between two neurons. Chemical Synapse: Transmission via neurotransmitters. Electrical Synapse: Direct electrical connection. Neurotransmitter: Chemical messenger (e.g., acetylcholine). Synaptic Cleft: Gap between neurons. Synaptic Vesicles: Store neurotransmitters.
Human Brain	The brain is the central information processing organ of our body, and acts as the 'command and control system'. It controls the voluntary movements, balance of the body, functioning of vital involuntary organs (e.g., lungs, heart, kidneys, etc.), thermoregulation, hunger and thirst, circadian (24-hour) rhythms of our body, activities of several endocrine glands and human behaviour. It is also the site for processing of vision, hearing, speech, memory, intelligence, emotions and thoughts.
Cranial meninges	The human brain is well protected by the skull. Inside the skull, the brain is covered by cranial meninges consisting of an outer layer called dura mater, a very thin middle layer called arachnoid and an inner layer (which is in contact with the brain tissue) called pia mater.
Divisions of Brain	The brain can be divided into three major parts: (i) forebrain, (ii) midbrain, and (iii) hindbrain
Forebrain	The forebrain consists of cerebrum, thalamus and hypothalamus Corpus callosum connects both hemispheres.

	Grey Matter: Inner region with neuron cell bodies. White Matter: Outer region with myelinated fibers. The cerebral cortex contains motor areas, sensory areas and large regions that are neither clearly sensory nor motor in function.
Hypothalamus	Hypothalamus lies at the base of the thalamus. The hypothalamus contains a number of centres which control body temperature, urge for eating and drinking. It also contains several groups of neurosecretory cells, which secrete hormones called hypothalamic hormones.
Limbic lobe or limbic system	The inner parts of cerebral hemispheres and a group of associated deep structures like amygdala, hippocampus, etc., form a complex structure called the limbic lobe or limbic system. Along with the hypothalamus, it is involved in the regulation of sexual behaviour, expression of emotional reactions (e.g., excitement, pleasure, rage and fear), and motivation.
Midbrain	The midbrain is located between the thalamus/hypothalamus of the forebrain and pons of the hindbrain. A canal called the cerebral aqueduct passess through the midbrain. The dorsal portion of the midbrain consists mainly of four round swellings (lobes) called corpora quadrigemina. Midbrain and hindbrain form the brain stem.
Hindbrain	The cerebellum has a very convoluted surface in order to provide additional space for many more neurons. The medulla of the brain is connected to the spinal cord. The medulla contains centres which control respiration, cardiovascular reflexes and gastric secretions. Pons consists of fibre tracts that interconnect different regions of the brain.



PW Web/App - https://smart.link/7wwosivoicgd4

Library- https://smart.link/sdfez8ejd80if