

The S* Grey's biology 5 The nervous system Second Peripheral nervous system ?? ?? Network o it connects the central nervous system with all the body parts o It consists of a network of nerves that are distributed all over the different body parts & includes: (1). Cranial nerves o Number: 12 pairs connected to the brain o Types: sensory, motor or mixed nerves Mixed nerves They are nerves that transmit the nerve impulses from the receptor organs to the brain and transmit the stimulating orders from the brain to the effector organs "They are sensory and motor nerves together" (2). Ans EXI or n are SyS Re R system The reflex arc consists of In most cases Sense organ Sensory neuron connector neuron Motor neuron Efferent Responding organ Effector Receptor Afferent Intermediate It is the organ that responds to the changes that happened in the enviroment, such as muscles and glands. For Your Information o The vertebrae of the vertebral column 33 vertebrae) are arranged from up to down into five regions, which are: – Cervical vertebrae – Thoracic vertebrae (12) – Lumbar vertebrae 5 – Sacral vertebrae (5) – Coccygeal vertebrae (4) –> So, the number of nerves pairs is different from the number of vertebrae in cervical & coccygeal regions ??y? Spinal nerve Grey's biology 5 The nervous system o Types: mixed (sensory and motor nerves together) o Spinal nerves roots: each spinal nerve has two roots (dorsal and ventral.): P.O.C. Ventral root Dorsal root It contains motor nerve fibers. stimulating motor orders (nerve impulses) that come from the brain and spinal cord to the responding (effector) organs, such as muscles and glands. Sensory neuron Connector neuron Sensory fiber Dorsal root Grey mamter Skin surface of thumb (Sensory receptors) (2) (1) (4) Motor fiber Ventral o the ???b. Involuntary (autonomic) reflex arc The response is in the involuntary muscles (like cardiac muscle) or glands. Reflex actions are of two types: a. Voluntary (somatic) reflex arc The response is in the voluntary (skeletal) muscles. Spinal nerves o Number: 31 pairs are connected to the spinal cord and exist in successive pairs on both sides of spinal cord and these pairs are arranged, as follows: Nerve Number Cervical 8 pairs that are connected with the neck. It transmits messages or Function It transmits messages (nerve impulses) from the receptor organs to the spinal cord and from it to the brain. Thoracic 12 pairs that are connected with the chest (thorax 4 Lumbar 5 pairs that are connected with the lumbar ???vertebrae Sarcal 5 pairs that are connected with the sacral ????? Structure It contains sensory nerve fibers. coccygeal 1 pair that is ?.(connected with coccyx. vertebrae. ???????3?(0