

## C13 Study Guide (2/7/2025)

### The Spinal Cord

#### C13-1

- 1 What are the three functions of the spinal cord?
- 2 What peripheral tissues are connected to the afferent and efferent nerve fibers?
- 3 Where in the vertebral foramen does the spinal cord stop?
- 4 What is the function of a spinal nerve? Where do they exit from the spinal column? Why are they called mixed nerves?
- 5 What are the four segments of the spinal cord? Why is there a cervical and lumbar enlargement?
- 6 How is connective tissue integrated into a spinal nerve? (three layers)
- 7 What are the three layers of the meninges surrounding the spinal cord? What segment fits over the cord like a loose sleeve?
- 8 What is the epidural space? Clinical significance?
- 9 Where is the arachnoid membrane located? What is in the subarachnoid space?
- 10 Where is the pia mater located? What three structures are formed by the pia mater?
- 11 What structure is formed at L1 when the spinal cord ends? What extends beyond this point? What are these structures called?
- 12 Why is a transverse section of the spinal cord described as a butterfly? What colors are present and what functions do we associate with the different colors?
- 13 What type of information is carried by ascending and descending tracts?
- 14 Where is the location of the three spinal cord horns and what functions do we associate with these horns?
- 15 What is the definition of decussation, contralateral, and ipsilateral?
- 16 How many nerves does it take to send a sensory signal from a muscle to the brain? What names do we use to describe these nerves?
- 17 What type of information is carried by the ascending gracilis and cuneatus tracts? The spinocerebellar tract?
- 18 How many neurons does it take to carry signals in the descending tracts? What do we call these neurons? What type of signals are carried by the corticospinal tracts, tectospinal tract, and vestibulospinal tract?

- 19 What are the two different types of upper motor neurons? Location? What are their lower motor neurons called?
- 20 What are the pyramidal tracts? Location? Origin called? Function?
- 21 What are the extra-pyramidal tracts? Location? Two general functions? Why are these tracts described as being the motor modulation system?
- 22 What are the functions of the tectospinal tract and vestibulospinal tract?
- 23 Where is the basal ganglia located? What system is the basal ganglia a part of? Function? Nickname? What is the cortico-cortical loop?

C13-2

- 24 What type of signal is associated with the dorsal root? What structural neurons type is in the dorsal root ganglion?
- 25 What type of signal is associated with the ventral root? What type of structural neuron is in the ventral root?
- 26 What is the significance of a nerve plexus?

C13-3

- 27 What is a spinal cord reflex? Three characteristics? What does it require to start reflex? Locations?
- 28 What type of sensation is proprioception? Nicknamed? Function?
- 29 What is a muscle spindle?
- 30 Use the Web site videos to review the structure and function of the following reflexes: withdrawal reflex, flexor crossed extensor reflex, patellar reflex, stretch reflex, and Golgi tendon organ reflex..
- 31 How many synapses are there in a withdrawal reflex? How many synapses are there in a patellar tendon reflex?
- 32 When do we use the stretch reflex? How may you describe this type of reflex?
- 33 Where are the Golgi tendon organs located? Function?