

Anatomy questions

1-Wrong about disk on L4 root

- a. It affects knee jerk
- b. Sensory is affected in anteromedial leg aspect
- c. It is the most common disk
- d. Extension of the knee is affected because quadriceps femoris

2-Wrong about fast pain

- a. It is less related to emotion than slow pain
- b. Transmitted by A- alpha
- c. Synapse in lamina 1+5
- d. Mostly from superficial structures and well localized

3-Wrong about lateral spinothalamic

- a. It is early crossed by anterior white commissure
- b. Has wide spread cortical region
- c. Synapse in ventral posteromedial nucleus of the thalamus
- d. Related to pain and temperature

4-Which of the following means Collection of axon in the central nervous system :

- a. Ganglion
- b. Nerve
- c. Nucleus
- d. Soma
- e. Tract

5-The outer layer of connective tissue that surrounds the nerve is called :

- a. Epineurium
- b. Epithelium
- c. Glial cells
- d. Endoneurium
- e. Perineurium

6-The term "Mesencephalon" means :

- a. Pons
- b. Cerebellum
- c. Midbrain
- d. Medulla
- e. Cerebrum

7-The Dura matter extends from the level of the foramen magnum to the level of ?

- a. L2
- b. S1
- c. S2
- d. S3
- e. S4

8-Which of the following represents the function of Posterior White Column-Medial Lemniscal Pathway ?

- a. Temperature
- b. Pain
- c. Conscious Proprioception
- d. Crude touch
- e. Unconscious Proprioception

9-Which of the following represents the location second order neuron of the lateral spinothalamic tract ?

- a. Thalamus
- b. Substantia gelatinosa of spinal cord
- c. Dorsal root ganglia
- d. Medulla
- e. Nucleus Gracilis

10-Which of the following structures is responsible for the interpretation of the emotional aspect of Pain ?

- a. Occipital lobe
- b. Cingulate gyrus
- c. Insula
- d. Midbrain
- e. Reticular formation

11-Which of the following tracts provides afferent information for spinovisual reflexs ?

- a. Anterior spinothalamic
- b. Lateral spinothalamic
- c. Posterior spinocerebellar
- d. Anterior spinocerebellar
- e. Spinotectal

12-Which of the folowing fibers carrys the sensation of fast pain ?

- a. A alpha fibers
- b. A beta fibers
- c. A delta fibers
- d. C fibers
- e. None of the above

13-Second order neuron of Posterior spinocerebellar tract will enter cerebellum through :

- a. Superior cerebellar peduncle
- b. Middle cerebellar peduncle
- c. Inferior cerebellar peduncle
- d. Crus cerebri
- e. None of the above

14-Lamina 3 and 4 of grey matter of spinal cord contains :

- a. Intermedio-medial nucleus
- b. Intermedio-lateral nucleus
- c. Nucleus proprius
- d. Substantia gelatinosa
- e. Dorsal nucleus of Clark's

15-If the knee jerk is lost, which of the following roots is most likely affected ?

- a. L3
- b. L4
- c. S1
- d. S2
- e. L5

16-Which of the following anchors spinal cord to coccyx ?

- a. Denticulate ligament
- b. filum terminale
- c. Cauda equina
- d. Conus medullaris
- e. None of the above

17-Which of the following tracts is responsible for reflex movement of head and neck in response to visual stimuli ?

- a. Rubrospinal tracts
- b. Vestibulospinal tracts
- c. Anterior spinothalamic
- d. Reticulospinal tracts
- e. Tectospinal tracts

18-Regarding posterior white column medial lemniscal pathway, choose the WRONG statement :

- a. Sensory fibers used in this system are faster than those used in the anteriolateral system (ALS)
- b. Fasciculus cuneatus transmits information coming from areas inferior to T6
- c. Lesion of this tract will result in loss of discriminative touch below the level of the lesion on the ipsilateral side of the body
- d. This system employs most receptors except free nerve endings
- e. Nucleus gracilis and nucleus cuneatus represent the location of the cell body of the second order neurons

19- In the dorsal horn–medial lemniscal pathway, the cell bodies of the first, second, and third order neurons are located in, respectively:

- A. Dorsal column, nucleus gracilis or cuneatus, thalamus
- B. Dorsal horn, hindbrain, forebrain
- C. Dorsal horn, medulla oblongata, prosencephalon
- D. Dorsal root ganglia, rhombencephalon, telencephalon
- E. Dorsal root ganglia, brain stem, diencephalon

20- All of the following statements apply to first order neurons that transmit discriminative tactile sensations from the arm EXCEPT:

- A. In the spinal cord, they ascend in the dorsal white column
- B. They synapse with 2nd order neurons in nucleus cuneatus
- C. They form internal arcuate fibers as they decussate
- D. They are pseudounipolar neurons

E. None of the above

1	C	11	E
2	B	12	C
3	C	13	C
4	E	14	C
5	A	15	B
6	C	16	B
7	C	17	E
8	C	18	B
9	B	19	E
10	B	20	C

Physiology questions

1. Cell bodies of the serotonergic neurons of the endogenous analgesia system can be found in the:

- A. Thalamus
- B. Raphe magnus nucleus
- C. Periaqueductal gray region
- D. Spinal cord
- E. Hypothalamus

2. "Rapidly adapting sensory receptors that detect pressure and high frequency vibrations, and are located deep in the dermis" The previous description is most consistent with:

- A. Pacinian corpuscles
- B. Free nerve endings
- C. Ruffini's end organs
- D. Merkel's discs
- E. Muscle spindles

3. Which of the following best describes the mechanism of referred pain?

- A. Overlap of visceral and somatic spatial representation in the human homunculus
- B. Spread of damage from the viscera to a distant area of skin
- C. Afferent visceral fibers may also synapse with neurons of the somatosensory pathway
- D. Visceral sensory neurons have wide receptive fields that extend to include parts of the skin alongside the viscera itself
- E. None of the above

4. Pain receptors in the skin are typically classified as which of the following?

- A) Encapsulated nerve endings
- B) A single class of morphologically specialized receptors
- C) The same type of receptor that detects position sense
- D) Free nerve endings

5. Which of the following best describes an expanded tip tactile receptor found in the dermis of hairy skin that is specialized to detect continuously applied touch sensation?

- A) Free nerve endings
- B) Merkel disc
- C) Pacinian corpuscle

D) Ruffini endings

6. Which of the following is best described as an elongated, encapsulated receptor found in the dermal pegs of glabrous skin that is especially abundant on lips and fingertips?

A) Merkel disc

B) Free nerve endings

C) Meissner corpuscle

D) Ruffini endings

7. Which of the following is an encapsulated receptor found deep in the skin throughout the body, as well as in fascial layers, where it detects indentation of the skin (pressure) and movement across the surface (vibration)?

A) Pacinian corpuscle

B) Meissner's corpuscle

C) Free nerve endings

D) Ruffini endings

8. Which substance enhances the sensitivity of pain receptors but does not directly excite them?

A) Bradykinin

B) Serotonin

C) Potassium ions

D) Prostaglandins

9. Interneurons that utilize the neurotransmitter enkephalin to inhibit afferent pain signals are most likely to be found in which region of the central nervous system?

A) Dorsal horn of spinal cord

B) Postcentral gyrus

C) Precentral gyrus

D) δ -type A

E) Type C fiber

F) Ventral horn of spinal cord

10. Which system transmits somatosensory information with the highest degree of temporal and spatial fidelity?

A) Anterolateral system

B) Dorsal column–medial lemniscal system

C) Corticospinal system

D) Spinocerebellar system

11. Neurons located in which area release serotonin as their neurotransmitter?

- A) Periaqueductal gray area
- B) Interneurons of the spinal cord
- C) Periventricular area
- D) Nucleus raphe magnus

12. Which system conveys information concerning highly localized touch sensation and body position (proprioceptive) sensation?

- A) Anterolateral
- B) Dorsal column–medial lemniscal
- C) Corticospinal
- D) Spinocerebellar

13. The first-order (primary afferent) cell bodies of the dorsal column–medial lemniscal system are found in which structure?

- A) Spinal cord dorsal horn
- B) Spinal cord ventral horn
- C) Dorsal root ganglia
- D) Nucleus cuneatus

14. Which structure carries axons from the nucleus gracilis to the thalamus?

- A) Fasciculus gracilis
- B) Fasciculus lemniscus
- C) Lateral spinothalamic tract
- D) Medial lemniscus

15. Which of the following is a group of neurons in the pain suppression pathway that uses enkephalin as a neurotransmitter?

- A) Postcentral gyrus
- B) Nucleus raphe magnus
- C) Periaqueductal gray area
- D) Type AB sensory fibers

16. Pain from the stomach is referred to which area of the body?

- A) Upper right shoulder area
- B) Abdominal area above the umbilicus
- C) Proximal area of the anterior and inner thigh

D) Abdominal area below the umbilicus

17-Which of the following statements describe the endogenous analgesia system?

- a. It uses endogenous opiates (endorphins , dynorphins or enkephalins)
- b. It decreases pain transmission at the dorsal horn cells through stimulating the release of substance p
- c. It is an ascending system pathway
- d. It takes origin from the cerebellar nuclei and red nucleus of the brain stem e. It is contralateral pathway

1	B	10	B
2	A	11	D
3	C	12	B
4	D	13	C
5	B	14	D
6	C	15	C
7	A	16	B
8	D	17	A
9	A	18	

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