

Somatosensory System - 20 MCQ Questions

1. Which of the following BEST describes the primary function of the somatosensory system?
 - A. Regulation of involuntary visceral reflexes only
 - B. Conscious perception of touch, temperature, pain, and body position
 - C. Control of endocrine gland secretions during stress responses
 - D. Integration of visual and auditory reflexes exclusively
2. Which of the following sensations is LEAST associated with the somatosensory system?
 - A. Pain
 - B. Temperature
 - C. Body position
 - D. Hormonal secretion
3. Which of the following BEST explains the role of first-order neurons in somatosensory pathways?
 - A. They localize crude sensation within the thalamus
 - B. They transmit sensory signals from receptors to the spinal cord
 - C. They interpret sensory intensity within the cortex
 - D. They inhibit transmission of painful stimuli in the medulla
4. Which of the following BEST describes second-order association neurons?
 - A. They directly stimulate skeletal muscle contraction
 - B. They transmit impulses from the spinal cord to the thalamus where crude sensation is perceived
 - C. They exclusively carry visual information to the occipital cortex
 - D. They connect the thalamus with autonomic ganglia only
5. Which of the following occurs mainly through third-order neurons?
 - A. Reflex withdrawal from painful stimuli
 - B. Transmission from receptor to spinal cord
 - C. Full localization and interpretation of sensory information in the cortex

D. Initiation of inflammatory mediators within peripheral tissues

6. Which of the following sensory fibers is characterized as the FASTEST conducting type according to the lecture?

- A. Unmyelinated type C fibers
- B. Small myelinated type Delta fibers
- C. Large myelinated alpha or beta fibers
- D. Postganglionic autonomic fibers

7. Which of the following sensations is MOST associated with type C fibers?

- A. Fine touch and vibration
- B. Sharp pain and cold temperature
- C. Slow pain and hot temperature
- D. Proprioception and pressure discrimination

8. Which of the following BEST describes the discriminative pathway?

- A. Crosses within the spinal cord and slowly conducts nociception
- B. Uses multiple interneurons and transmits chronic pain
- C. Crosses at the medulla and rapidly transmits proprioceptive information
- D. Functions mainly through unmyelinated fibers carrying dull pain

9. Which of the following characteristics is MOST associated with the anteriolateral pathway?

- A. Rapid conduction with only three neurons involved
- B. Crossing at the medulla oblongata
- C. Slow conducting nociceptive transmission involving multiple neurons
- D. Exclusive transmission of vibration sensation

10. Which of the following BEST defines nociceptors?

- A. Specialized endocrine receptors regulating stress hormones
- B. Receptive nerve endings responding to painful stimuli and transmitting impulses to dorsal horn neurons
- C. Mechanoreceptors responsible for vibration sensation only

D. Cortical neurons interpreting emotional responses to pain

11. Which of the following BEST describes the neospinothalamic tract?

- A. Conducts chronic dull pain slowly over multiple synapses
- B. Carries fast sharply discriminative pain such as knife cuts
- C. Mediates referred visceral pain exclusively
- D. Functions only during inflammatory tissue injury

12. Which of the following is MOST characteristic of the paleospinothalamic tract?

- A. Rapid transmission of vibration sensation
- B. Fast conduction of sharp localized pain
- C. Slow continuously conducted chronic pain
- D. Exclusive mediation of proprioception

13. Which of the following brain regions is mainly responsible for the emotional component of pain?

- A. Cerebellum
- B. Limbic system
- C. Occipital cortex
- D. Basal ganglia

14. Which of the following responses to pain is considered autonomic according to the lecture?

- A. Withdrawal of the hand from heat
- B. Conscious localization of pain
- C. Increased heart rate during severe pain
- D. Interpretation of pain intensity within the cortex

15. Which of the following BEST defines referred pain?

- A. Pain occurring exclusively within skeletal muscles
- B. Pain perceived at a site different from its origin
- C. Pain limited only to inflamed tissues
- D. Pain caused directly by peripheral nerve destruction

16. Which of the following BEST describes acute pain?

- A. Pain persisting for years after tissue healing
- B. Pain associated only with psychological disorders
- C. Self-limiting pain that resolves when tissues heal
- D. Pain caused exclusively by nerve degeneration

17. Which of the following is MOST characteristic of chronic pain?

- A. It disappears immediately after tissue injury
- B. It commonly lasts much longer and may occur with nerve damage
- C. It occurs only in cutaneous tissues
- D. It is always associated with acute inflammation exclusively

18. Which of the following BEST describes trigeminal neuralgia?

- A. Mild continuous abdominal discomfort
- B. Severe facial pain associated with repetitive lightning-like attacks
- C. Chronic pain following limb amputation
- D. Diffuse muscular pain associated with fever

19. Which of the following BEST defines phantom limb pain?

- A. Pain caused by inflammation of the meninges
- B. Pain occurring only during migraine attacks
- C. Persistent pain sensation perceived after limb amputation as though the limb still exists
- D. Pain restricted to the temporomandibular joint

20. Which of the following headache disorders is characterized by unilateral head pain associated with nausea, vomiting, and sensitivity to light and noise?

- A. Tension-type headache
- B. Cluster headache
- C. Migraine headache
- D. TMJ syndrome

Model Answers

1. B

2. D

3. B

4. B

5. C

6. C

7. C

8. C

9. C

10. B

11. B

12. C

13. B

14. C

15. B

16. C

17. B

18. B

19. C

20. C