Lec 9

Quiz: Internal Features of the Midbrain

1. The midbrain is divided into which two main parts by the cerebral aqueduct?

A) Crus cerebri and substantia nigra
B) Tectum and tegmentum
C) Dorsal (tectum) and ventral (cerebral peduncles)
D) Red nucleus and substantia nigra
Answer: C) Dorsal (tectum) and ventral (cerebral peduncles)

2. What are the three parts of the cerebral peduncle?

A) Tectum, tegmentum, and substantia nigra
B) Crus cerebri, substantia nigra, and tegmentum
C) Red nucleus, substantia nigra, and inferior colliculus
D) Corticospinal, corticobulbar, and corticopontine fibers
Answer: B) Crus cerebri, substantia nigra, and tegmentum

3. Which of the following fibers are found in the medial one-fifth of the crus cerebri?

A) Corticospinal fibers
B) Corticobulbar fibers
C) Frontopontine fibers
D) Nigrothalamic fibers
Answer: C) Frontopontine fibers

4. The substantia nigra is divided into which two parts?

A) Superior and inferior
B) Medial and lateral
C) Pars compacta and pars reticularis
D) Red nucleus and locus coeruleus
Answer: C) Pars compacta and pars reticularis

5. The substantia nigra is associated with which neurotransmitter?

A) Acetylcholine
B) Dopamine
C) Serotonin
D) Glutamate
Answer: B) Dopamine

6. A lesion in the substantia nigra is associated with which disease?

A) Huntington's disease
B) Parkinson's disease
C) Alzheimer's disease
D) Multiple sclerosis
Answer: B) Parkinson's disease

7. The medial lemniscus conveys which type of sensation?

A) Pain and temperature
B) Proprioception and fine touch
C) Auditory signals
D) Motor control
Answer: B) Proprioception and fine touch

8. The lateral lemniscus is part of which sensory pathway?

A) Visual
B) Olfactory
C) Vestibular
D) Auditory
Answer: D) Auditory

9. The red nucleus plays a role in which function?

A) Visual processing
B) Motor coordination
C) Auditory reflexes
D) Hormone secretion
Answer: B) Motor coordination

10. The red nucleus receives input from which structure?

A) Cerebellum
B) Hypothalamus
C) Hippocampus
D) Spinal cord
Answer: A) Cerebellum

11. Which cranial nerve nucleus is found at the level of the superior colliculus?

A) 3rd (Oculomotor)
B) 4th (Trochlear)
C) 5th (Trigeminal)
D) 6th (Abducens)
Answer: A) 3rd (Oculomotor)

12. Which cranial nerve nucleus is found at the level of the inferior colliculus?

A) 3rd (Oculomotor)
B) 4th (Trochlear)
C) 5th (Trigeminal)
D) 7th (Facial)
Answer: B) 4th (Trochlear)

13. The tectum consists of which structures?

A) Cerebral peduncles
B) Red nucleus and substantia nigra
C) Superior and inferior colliculi
D) Medial and lateral geniculate bodies
Answer: C) Superior and inferior colliculi

14. The superior colliculus is primarily involved in which function?

A) Auditory processing
B) Visual reflexes
C) Taste perception
D) Motor coordination
Answer: B) Visual reflexes

15. The inferior colliculus is primarily involved in which function?

A) Visual processing
B) Auditory reflexes
C) Pain sensation
D) Proprioception
Answer: B) Auditory reflexes

16. The rubrospinal tract originates from which structure?

A) Cerebral cortex
B) Red nucleus
C) Superior colliculus
D) Substantia nigra
Answer: B) Red nucleus

17. A lesion in the red nucleus results in which symptoms?

A) Hearing loss
B) Visual disturbances
C) Contralateral tremor and ataxia
D) Loss of pain sensation
Answer: C) Contralateral tremor and ataxia

18. Weber's syndrome is caused by a lesion in which artery?

A) Anterior cerebral artery
B) Middle cerebral artery
C) Posterior cerebral artery
D) Basilar artery
Answer: C) Posterior cerebral artery

19. Benedikt's syndrome is characterized by which symptoms?

A) Ipsilateral facial paralysis and hearing loss
B) Contralateral hemiplegia and ataxia
C) Ipsilateral ophthalmoplegia and contralateral tremor
D) Loss of pain and temperature sensation
Answer: C) Ipsilateral ophthalmoplegia and contralateral tremor

20. The commissure of the inferior colliculus connects which structures?

A) Left and right inferior colliculi
B) Superior colliculus and thalamus
C) Red nucleus and cerebellum
D) Substantia nigra and corpus striatum
Answer: A) Left and right inferior colliculi

Lec 10

Quiz on Ascending (Sensory) Pathways

1. What is the function of ascending tracts?

A) Transmit motor signals from the brain to the periphery
B) Carry sensory information from the periphery to the brain
C) Control involuntary muscle movements
D) Coordinate balance and posture
Answer: B