Lecture #05 Diencephalon

Question 1: Which describes the ventromedial and lateral nuclei of the hypothalamus?

a) Receive their principal input from the postcommissural fibers of the fornix

b) Contain neurons that respond to an increase in blood temperature

c) Control the wake-sleep cycle

d) Are responsible for the regulation of eating behavior

e) Control water balance

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Question 2: Extending from the ventral surface of the hypothalamus is the tuber cinereum and what?

a) Tuberomammillary nucleus

b) Massa intermedia

c) Neurohypophysis

d) Anterior pituitary

e) Reticular nucleus

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Question 3: The thalamic syndrome of Dejerine-Roussy (lesion destroying the Ventral Posterior Nucleus of thalamus) results initially in loss of sensation from which?

a) Ipsilateral half of the head only

b) Ipsilateral half of the head and body

c) Ipsilateral half of the body only

d) Contralateral half of the body only

e) Contralateral half of the head and body

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Question 4: The suprachiasmatic nucleus influences which diencephalic structure?

a) Habenula

b) Pineal gland

c) Lateral geniculate nucleus (LGN)

d) Dejerine-Roussy

e) Substantia nigra pars compacta

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Question 5: Which of the following describes a feature of the organization of the hypothalamus?

a) It contains the pineal gland

b) It is divided from front to back into four regions of nuclei: preoptic, anterior, middle, and posterior

c) It is divided into lateral, medial, and anterior nuclei by the internal medullary lamina

d) It contains the subthalamic nucleus

e) The lateral group of nuclei is divided into dorsal and ventral tiers

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Question 6: Which hypothalamic structure provides a major input to the anterior thalamic nucleus?

a) Anterior

b) Mammillary body

c) Interthalamic adhesion

d) Massa intermedia

e) Tuberomammillary

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Question 7: What is the function of the intralaminar thalamic nuclei?

a) Association relay

b) Motor relay

c) Corticolimbic relay

d) Corticothalamic relay

e) Increasing arousal

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Question 8: Which of the thalamic nuclear groups is related to prefrontal association cortex?

a) Medial

b) Preoptic

c) Anterior

d) Lateral

e) Supraoptic

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Question 9: Where is the reticular nucleus of the thalamus?

a) Within the internal medullary lamina of the thalamus

b) In the central core region of the specific thalamic relay nuclei

c) In the brainstem tegmentum from medulla to midbrain

d) Overlying the external medullary lamina on the lateral surface of the thalamus

e) Spread diffusely throughout the thalamus

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Question 10: The ventral posterolateral, ventral posteromedial, medial geniculate, and lateral geniculate nuclei of the thalamus are characterized by which?

a) Specific inputs and projecting to sensory areas of cortex

b) Specific inputs and projecting to limbic areas of cortex

c) Integrating different cortical areas

d) Switching thalamocortical neurons between tonic and burst modes

e) Specific inputs and projecting to motor areas of cortex

Lecture #05 Diencephalon

Question 11: Which hypothalamic region facilitates body heat conservation?

a) Posterior

b) Tuberomammillary

c) Supraoptic

d) Lateral

e) Ventromedial

Lecture #05 Diencephalon

Question 12: The sensory relay nuclei of the thalamus that project to primary sensory areas of the cortex are which?

a) Ventral posterolateral, ventral posteromedial, medial geniculate, and lateral geniculate

b) Anterior and lateral dorsal

c) Ventral anterior and ventral lateral

d) Reticular, intralaminar, and midline

e) Dorsomedial, lateral posterior, and pulvinar

Lecture #05 Diencephalon

Question 13: Which of the following describes the organization of the hypothalamus?

a) The lateral group of nuclei is divided into dorsal and ventral tiers

b) It contains the subthalamic nucleus

c) It consists of the habenular nuclei and pineal gland

d) It is divided from medial to lateral into periventricular, medial, and lateral zones

e) It is divided into lateral, medial, and anterior nuclei by the internal medullary lamina

Lecture #05 Diencephalon

Question 14: The fornix passes through the hypothalamus to synapse where?

a) Medial dorsal nucleus (dorsomedial nucleus) of the thalamus

b) Anterior nucleus of the thalamus

c) Amygdala

d) Mammillary body

e) Cingulate gyrus

Lecture #05 Diencephalon

Question 15: Which structures comprise the epithalamus?

a) Ventral posteromedial nucleus, ventral posterolateral nucleus

b) Habenula, pineal gland

c) Suprachiasmatic nucleus, medial geniculate nucleus, lateral geniculate nucleus

d) Suprachiasmatic nucleus, pineal gland

e) Septal nuclei, stria medullaris thalami

Lecture #05 Diencephalon

Question 16: According to the review article by Janig et al. 2006, what is the proposed order of the four medial to lateral functional zones of the hypothalamus?

a) Medial, intermediate, tuberomammillary, lateral

b) Appetitive, thermoregulatory, osmotic regulatory, reproductive

c) Neuroendocrine, circadian, visceral motor, behavioral control

d) Periventricular, intermediate, tuberomammillary, lateral

e) Periventricular, medial, tuberomammillary, lateral

Lecture #05 Diencephalon

Question 17: Which is a major nucleus of the subthalamus?

a) Suprachiasmatic nucleus

b) Tuber cinereum

c) Subthalamic nucleus

d) Pineal gland

e) Adenohypophysis

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Question 18: Where is the massa intermedia?

a) Adjacent to the intralaminar nuclei

b) Between the left and right thalamus

c) Under the cerebral aqueduct

d) Adjacent to the reticular nucleus

e) Between the diencephalon and mesencephalon

Lecture #05 Diencephalon

Question 19: A lesion restricted to the ventral posterolateral (VPL) thalamic nucleus results initially in loss of sensation from which?

a) Contralateral half of the head and body

b) Contralateral half of the body

c) Contralateral half of the head

d) Ipsilateral half of the head and body

e) Ipsilateral half of the body

Lecture #05 Diencephalon

Question 20: Destruction of which hypothalamic nucleus most directly disrupts sleep cycles?

a) Supraoptic

b) Reticular

c) Suprachiasmatic

d) Tuberomammillary

e) Subthalamic

Lecture #05 Diencephalon

Question 21: Which of the thalamic nuclear groups is related to cingulate cortex?

a) Anterior

b) Medial

c) Preoptic

d) Lateral

e) Supraoptic

Lecture #05 Diencephalon

Question 22: Thalamic syndrome includes emotional instability, dysesthesia, and what else?

a) Intractable pain

b) Ipsilateral sensory loss in the body and usually the head

c) Bilateral loss of pain and temperature sensitivity

d) Anterograde amnesia

e) Retrograde amnesia