

Neuroscience I System

Prepared by @Medicine is life

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1. Occipital sinus — choose the correct statement:

- a. Receives blood from the middle superficial cerebral vein
- b. Lies in the attached border of the cerebellar falx
- c. Drains into the transverse sinus
- d. Runs in the free edge of the cerebral falx
- e. Drains into the internal jugular vein

2. Rexed lamina X is located in the:

- a. Posterior horn
- b. Intermediate zone
- c. Anterior horn
- d. Commissural area

3. The pallidum projects to the cerebral cortex through:

- a. VPL of thalamus
- b. VPM of thalamus
- c. Reticular nucleus
- d. Ventral anterior nucleus
- e. DL of thalamus

4. Cranial nerves sending gustatory input:

- a. V, VII, IX, X
- b. VII, IX, X
- c. V, VII, IX, X, XI
- d. VII, IX, X, XI
- e. VII, IX, X, XI, XII

5. Role of prohormone convertases PC1 & PC2:

- a. Cleave prepropeptides
- b. Transport neuropeptides
- c. Degrade neuropeptides
- d. Synthesize neuropeptides

6. Transport of enzymes for neurotransmitter synthesis:

- a. Fast axonal transport
- b. Slow axonal transport
- c. Diffusion
- d. Vesicular transport

7. Enzyme converting dopamine → norepinephrine:

- a. Tyrosine hydroxylase
- b. Dopamine β -hydroxylase
- c. MAO
- d. COMT

8. Small-molecule neurotransmitter synthesis occurs in:

- a. Synaptic cleft
- b. Postsynaptic neuron
- c. Presynaptic terminal
- d. Liver

9. Key enzyme in GABA degradation:

- a. GDH
- b. GABA-T
- c. Glutamine synthetase
- d. Glutaminase

10. Neurotransmitter involved in learning & memory:

- a. GABA
- b. Glutamate
- c. Glycine
- d. Dopamine
- e. Serotonin

11. Precursor of serotonin:

- a. Phenylalanine
- b. Tyrosine
- c. Tryptophan
- d. Histidine

12. Enzyme responsible for ACh degradation:

- a. MAO
- b. COMT

- c. Acetylcholinesterase
- d. Dopamine β -hydroxylase

13. Axon hillock is the point of origin of:

- a. Dendrite
- b. Cell body
- c. Axon
- d. All of the above

14. Blood–brain barrier feature:

- a. Fenestrated choroid plexus capillaries
- b. Endothelium with gap junctions
- c. Endothelium with tight junctions
- d. Fenestrated brain capillaries

15. Telodendrium is the terminal of a:

- a. Dendrite
- b. Cell body
- c. Axon
- d. None of the above
- e. All of the above

16. Molecular layer is formed of axons of:

- a. Pyramidal cells
- b. Purkinje cells
- c. Golgi cells
- d. Granular cells
- e. Stellate cells

17. Choroid plexus — all true EXCEPT:

- a. Invaginated pia folds
- b. Loose connective tissue
- c. Lined by ion-transporting cuboidal cells
- d. Reabsorbs CSF

18. Rosette appearance is found in:

- a. Molecular layer
- b. Purkinje cell layer
- c. Granular layer
- d. Polymorphic layer
- e. None

19. Winterbottom's sign occurs in infection by:

- a. *T. cruzi*
- b. *T. brucei gambiense*
- c. *T. brucei rhodesiense*
- d. *Leishmania major*
- e. *Toxoplasma gondii*
- f. *Naegleria fowleri*

20. CSF Gram stain in meningitis of 8-year-old:

- a. Many leukocytes + Gram+ cocci in clusters
- b. Many leukocytes + Gram- diplococci
- c. Many leukocytes + Gram+ branching rods
- d. Many leukocytes + Gram+ bacilli
- e. Few leukocytes, ↑glucose + Gram+ diplococci
- f. None

21. Most common neonatal meningitis:

- a. *S. pneumoniae* + *N. meningitidis*
- b. *E. coli* K1 + Group B Strep
- c. Group B Strep + *Treponema*
- d. *N. meningitidis* + *Chlamydia*
- e. *H. influenzae* + *Listeria*
- f. None

22. LP results in suspected meningitis (fever, confusion):

- a. ↑ Glucose
- b. ↑ RBCs + blood
- c. ↓ Protein
- d. ↑ Protein
- e. None

23. Best stain to visualize *Cryptococcus* capsule:

- a. Gram
- b. Giemsa
- c. Negative stain
- d. Fluorescent stain
- e. Acid-fast
- f. Silver stain

24. Encephalitis is usually due to direct viral invasion:

- a. True
- b. False

25. Necrotic zone in glioblastoma is called:

- a. Palisading necrosis
- b. Pseudopalisading necrosis
- c. Pseudorosette
- d. True rosette

26. Cerebral infarction is characterized by:

- a. Liquefaction and cavity
- b. Macrophage/lymphocyte infiltration
- c. Nuclear shrinkage within 2 days
- d. a & b
- e. All

27. Homer Wright rosettes are seen in:

- a. Medulloblastoma
- b. Meningioma
- c. Astrocytoma
- d. None

28. Gliomas include all except:

- a. Astrocytoma
- b. Glioblastoma
- c. Oligodendroglioma
- d. Medulloblastoma

29. Global brain ischemia — NOT true:

- a. May have good prognosis
- b. Caused by septic shock
- c. May lead to brain death
- d. Caused by cerebral thrombosis
- e. None

30. Communication between ICA and cavernous sinus:

- a. Arteriovenous aneurysm
- b. Mycotic aneurysm
- c. Fusiform aneurysm
- d. Congenital aneurysm

31. Astrocytomas common in cerebellum:

- a. Diffuse
- b. Anaplastic
- c. Pilocytic
- d. Glioblastoma

32. Viruses causing encephalitis EXCEPT:

- a. Herpes zoster
- b. Rabies
- c. Poliomyelitis
- d. EBV
- e. Herpes simplex

33. Child with cerebellar tumor: small round blue cells + rosettes:

- a. Anaplastic astrocytoma
- b. Glioblastoma
- c. Ependymoma
- d. Neuroblastoma
- e. Medulloblastoma

34. CPA tumor with Antoni A/B areas:

- a. Neuroblastoma
- b. Schwannoma
- c. Ganglioneuroma
- d. Ganglioneuroblastoma
- e. Neurofibroma

35. Multiformative tumors include all EXCEPT:

- a. Colloid cyst
- b. Dermoid cyst
- c. Medulloblastoma
- d. Craniopharyngioma

36. Butterfly-shaped lesion indicates:

- a. Medulloblastoma
- b. Benign meningioma
- c. Glioblastoma multiforme
- d. Pilocytic astrocytoma

37. Brain abscess — all true EXCEPT:

- a. Liquefactive necrosis

- b. Neutrophilic infiltration
- c. Thick meninges
- d. None

38. Brain tumor staging depends on:

- a. Mitosis
- b. Necrosis
- c. Proliferation
- d. Spread
- e. All

39. CSF in TB meningitis DOES NOT show:

- a. ↑ Protein
- b. Few bacilli
- c. Turbid fluid
- d. Normal glucose

40. Tumor showing palisading:

- a. Schwannoma
- b. Neurofibroma
- c. Neurofibromatosis
- d. Astrocytoma

41. 20 mg IV morphine = oral:

- a. 30 mg
- b. 20 mg
- c. 60 mg
- d. 10 mg

42. Nitrous oxide — all true EXCEPT:

- a. Laughing gas
- b. Potent anesthetic
- c. Used 30–50% with oxygen
- d. Does not depress respiration

43. Dextromethorphan — all true EXCEPT:

- a. Synthetic cough suppressant
- b. Little analgesic effect
- c. Low abuse potential
- d. NOT preferred over codeine

44. Ketamine — all true EXCEPT:

- a. NMDA antagonist
- b. Induces dissociation
- c. ↑ BP & CO
- d. Potent bronchoconstrictor

45. Fentanyl — all true EXCEPT:

- a. Related to pethidine
- b. 100× potency of morphine
- c. Not used for anesthesia
- d. Highly lipophilic & rapid onset

46. Opioid receptors — all true EXCEPT:

- a. μ , κ , δ receptors
- b. Each receptor has specificity
- c. Analgesia mainly via μ
- d. Enkephalins selective for δ centrally

47. 10 mg IV morphine = oral:

- a. 30 mg
- b. 20 mg
- c. 60 mg
- d. 10 mg

48. Halothane — all true EXCEPT:

- a. Dilates cerebral vessels
- b. ↑ CBF → ↑ ICP
- c. 60% eliminated by liver
- d. Relaxes skeletal muscle

49. Benzodiazepines — all true EXCEPT:

- a. Used with anesthetics
- b. Most common is tapentadol
- c. Facilitate amnesia & sedation
- d. Minimal CV depression

50. Propofol — all true EXCEPT:

- a. IV sedative/hypnotic
- b. Replaced thiopental
- c. Supplied as lipid emulsion
- d. PK altered in mild liver/kidney failure

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51. Competitive antagonist at μ , κ , δ :

- a. Morphine
- b. Naloxone
- c. Naltrexone
- d. Pethidine

52. Codeine — all true EXCEPT:

- a. Naturally occurring
- b. Weak analgesic
- c. Used for mild–moderate pain
- d. Analgesia from its conversion to morphine

53. Parasympathetic effects of facial nerve — EXCEPT:

- a. Lacrimal gland secretion
- b. Nasopharyngeal gland secretion
- c. Sublingual/submandibular secretion
- d. Vasodilation to posterior 1/3 tongue vessels

54. Placidity in animals produced by bilateral lesion of:

- a. Amygdala
- b. Caudate
- c. Lentiform nuclei
- d. Substantia nigra

55. Müller's law — all true EXCEPT:

- a. Adequate stimulus
- b. One type of sensation
- c. Sensation depends on stimulus
- d. All true

56. Tone is regulated by:

- a. Vestibulospinal
- b. Tectospinal

- c. Medial reticulospinal
- d. Rubrospinal

57. NOT a function of thalamus:

- a. Processing motor info
- b. Controlling arousal
- c. Homeostasis
- d. Relaying fine sensations

58. Ability to recognize object by touch:

- a. Stereognosis
- b. Vibration
- c. Pressure
- d. Tactile localization
- e. Tactile discrimination

59. Period after injury with reduced reflexes:

- a. Recovery stage
- b. Spinal shock
- c. Mass reflex
- d. None

60. Increase in stimulus intensity — EXCEPT:

- a. ↑ Action potential amplitude
- b. All channels open
- c. ↑ AP frequency
- d. All true

61. Complications causing failure of recovery — EXCEPT:

- a. UTI
- b. Malnutrition
- c. Renal failure
- d. Decubitus ulcer

62. Nucleus stimulating eating behavior:

- a. VPL
- b. Ventromedial
- c. Lateral
- d. Ventral anterior

63. Postganglionic neuron — NOT true:

- a. Ends on effector

- b. Usually myelinated
- c. Cell body outside CNS
- d. Longer in sympathetics

64. Brainstem nuclei receiving fibers from opposite side ONLY:

- a. Trigeminal
- b. Vagus
- c. Hypoglossal
- d. Abducent

65. Preganglionic sympathetic fibers to head/neck relay in:

- a. T1 ganglion
- b. Superior cervical ganglion
- c. Middle cervical ganglion
- d. Inferior cervical ganglion

66. Corticonuclear fibers terminate in all nuclei EXCEPT:

- a. IV
- b. VI

67. Corticospinal fibers cross at:

- a. Upper pons
- b. Lower pons
- c. Upper medulla
- d. Lower medulla

68. RMP and threshold of postsynaptic neuron:

- a. -99, -100
- b. -60, -70
- c. -90, -70
- d. -30, +100

69. Sensation passing through Clark's column:

- a. Temperature
- b. Pain
- c. Vibration
- d. Itch

70. Thalamic syndrome manifestations:

- a. Sensory ataxia
- b. Motor ataxia

- c. Involuntary movements
- d. All

71. Tonic receptors — EXCEPT:

- a. Pain
- b. Muscle spindles
- c. Baroreceptors
- d. Olfactory receptors

72. Preganglionic fibers to abdominal viscera arise from:

- a. Thoracic
- b. Lumbar
- c. Cervical
- d. a & b
- e. All

73. Mechanoreceptors — EXCEPT:

- a. Olfactory
- b. Baroreceptors
- c. Stretch receptors
- d. Proprioceptors

74. Corticospinal fibers cross at:

- a. Upper pons
- b. Lower pons
- c. Upper medulla
- d. Lower medulla

75. Unit function of nervous system:

- a. Neuron
- b. Cell body
- c. Reflex
- d. Synapse

76. Chemoreceptor — EXCEPT:

- a. Glucoreceptors
- b. Osmoreceptors
- c. Taste receptors
- d. Touch receptors

77. CSF leaves subarachnoid space via:

- a. Median aperture

- b. Foramen of Monro
- c. Lateral aperture
- d. Cerebral aqueduct
- e. Arachnoid granulations

78. Meyer's loop is part of:

- a. Optic nerve
- b. Optic chiasm
- c. Optic tract
- d. Optic radiation
- e. Visual cortex

79. Archicerebellum receives fibers from:

- a. Cuneocerebellar tract
- b. Trigemino-cerebellar
- c. Corticopontine
- d. Vestibulocerebellar
- e. Rostral spinocerebellar

80. Anterior surface of midbrain is formed by:

- a. Tectum
- b. Tegmentum
- c. Superior cerebellar peduncle
- d. Reticular formation
- e. Cerebral peduncle

81. Inferior petrosal sinus:

- a. Receives from superficial middle cerebral vein
- b. Lies in attached border of cerebellar falx
- c. Drains into transverse sinus
- d. Runs in free edge of falx
- e. Drains into internal jugular

82. Afferent limb of corneal reflex:

- a. Ophthalmic nerve
- b. Facial
- c. Maxillary
- d. Mandibular
- e. Glossopharyngeal

83. Drainage into confluence of sinuses:

- a. Straight, transverse, superior sagittal
- b. Superior sagittal, occipital, sigmoid
- c. Straight, occipital, transverse
- d. Superior sagittal, straight, occipital
- e. Sigmoid, straight, transverse

84. CNS components — EXCEPT:

- a. Cerebellum
- b. Spinal cord
- c. Spinal nerves
- d. Diencephalon

85. Internuclear ophthalmoplegia seen in:

- a. Locked-in syndrome
- b. Weber
- c. Foville
- d. Millard-Gubler
- e. Parinaud

86. Corticospinal fibers synapse with:

- a. Inferior colliculus
- b. Superior olive
- c. Olive
- d. Nucleus ambiguus
- e. Superior colliculus

87. Lumbar enlargement opposite vertebrae:

- a. L2–S3
- b. T9–L1
- c. C3–T1
- d. C5–T1

88. External spinal fissure contains:

- a. Anterior medullary artery
- b. Posterior medullary artery
- c. Anterior spinal artery
- d. Posterior spinal artery

89. Striatum formed by:

- a. Putamen + Caudate

- b. Putamen + Globus pallidus
- c. Caudate + Globus pallidus
- d. Lentiform + Thalamus
- e. Subthalamus + Caudate

90. Safe LP point:

- a. C7–T1
- b. L3–L4
- c. L1–L2
- d. T12–L1

91. Ion channel for depolarization:

- a. Voltage-gated K^+
- b. K^+ leakage
- c. Voltage-gated Na^+
- d. Na^+ leakage

92. Light reflex center:

- a. Medulla
- b. Pons
- c. Mamillary
- d. Pretectal
- e. Diencephalon

93. Opening ligand-gated Cl^- channel causes:

- a. Action potential
- b. Depolarization
- c. Repolarization
- d. Hyperpolarization
- e. EPSP

94. Vesicle giving rise to pons & cerebellum:

- a. Telencephalon
- b. Mesencephalon
- c. Metencephalon
- d. Myelencephalon

95. Testing trigeminal nerve:

- a. Open jaw against resistance
- b. Puff cheeks

- c. Close eyes
- d. Protrude tongue

96. Sulcus separating pons from midbrain:

- a. Central sulcus
- b. Superior pontine sulcus
- c. Lateral sulcus
- d. Inferior pontine sulcus

97. Mandibular arch gives all muscles EXCEPT:

- a. Muscles of mastication
- b. Muscles of face & scalp
- c. Tensor palati & tensor tympani
- d. Mylohyoid
- e. Anterior belly of digastric

98. Major relay to cerebral hemispheres:

- a. Hypothalamus
- b. Frontal lobe
- c. Midbrain
- d. Medulla
- e. Thalamus

99. Structure continuous with amygdala:

- a. Putamen
- b. Internal capsule
- c. Caudate
- d. External capsule
- e. Globus pallidus

100. Superior petrosal sinus:

- a. Receives middle superficial cerebral vein
- b. Lies in attached border of cerebellar falx
- c. Drains into transverse sinus
- d. Runs in free falx edge
- e. Drains into internal jugular

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