NS
Midterm

Coronary batch

Questions collected in total:
44/45

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Anatomy

(1) All of the following are correct regarding the nervous system, EXCEPT:
(A) In the synapses the membranes of adjacent cells are in close apposition (contiguity not continuity)
(B) The number of glial cells is over that number of neurons
(C) ?
(D) Most brain tumors involve the neurons, not the neuroglia cells

(2) The human body contains _____ pairs of cranial nerves, and _____ pairs of spinal nerves:
(A) 12;31
(B) 12;33
(C) 10;31
(D) 11;30
(E) 12;35

(3) Damge of Broca's area will cause:
(A) Fluent aphasia
(B) Expressive (motor) aphasia
(C) Sensory aphasia
(D) ?

(4) All of the following is correct considering the frontal eye field area of the brain, EXCEPT:
(A) Located in the middle frontal gyrus
(B) Each FEF is responsible for moving both eyes to the ipsilateral side (it should be a contralateral movement not an ipsilateral movement)
(C) This cortical region controls the conjugate eye movements in the horizontal plane
(D) In unilateral lesion, the affected eye may deviate ipsilaterally toward the lesion

(5) The middle layer of the hippocampus contains which type of cells:
(A) Stallate cells
(B) Basket cells
(C) Pyramidal cells
(D) Fusiform cells
(E) Horizontal cells

(6) Which of the following is incorrect regarding the BBB:
(A) Contain tight junction that seals the endothelial cells together
(B) It has an continuous basement membrane
(C) Contains 2 layers of basement membrane (this statement is for the CSF blood barrier not the BBB)
(D) Areas in the hypothalamus lack BBB

(7) Blockage of which artery most likely causes lower limb paralysis but not upper limb paralysis:
(A) Middle cerebral artery
(B) Anterior choroidal artery
(C) Anterior cerebral artery
(D) Posterior choroidal artery
(E) Posterior cerebral artery

(8) Sensation from the head and face will pass through which thalamic nucleus before reaching the postcentral gyrus:
(A) Ventral posterolateral nucleus
(B) Ventral posteromedial nucleus
(C) Ventral anterior
(D) Ventral lateral

(9) Which of the following is not correct regarding the parietal lobe of the brain:
(A) It is located between the the central sulcus and the postcentral sulcus
(B) It senses and integrates sensation
(C) Angular gyrus and supramarginal gyrus are part of it
(D) ?

(10) Which of the following sinuses directly drains into the straight sinus:
(A) Superior sagittal sinus
(B) Occipital sinus
(C) Inferior sagittal sinus
(D) Transverse sinus
(E) Superior petrosal sinus

(11) The UMN lesion is caused by damage of both the pyramidal and the extrapyramidal tracts at any level from the cerebral cortex to spinal cord. All of the following will result of this type of lesion, EXCEPT:
(A) Muscle weakness or paralysis
(B) Positive Babinski's sign
(C) Hyperreflexia
(D) Muscle atrophy (this result of an LMN not UML)

(12) Lateral Medullary Syndrome (Wallenberg) is caused by an occlusion of posterior inferior cerebellar artery. All of the following structures fed by that vessel will be affected, EXCEPT:
(A) Nucleus ambiguous
(B) Vestibular nuclei
(C) Inferior cerebellar peduncle
(D) Medial lemniscus (this is affected in the medial but not the lateral syndrome)
(E) Nucleus of spinal tract of trigeminal nuclei

(13) An inadvertent damage to the conus medullaris during a lumbar puncture can be avoided by inserting the lumbar needle at which of the following levels:
(A) T12-L4
(B) L3-L4 or L4-L5
(C) L1-L2
(D) T12-L1

(14) If there is an increased ICP, regardless the pathology, which part of the cerebellum is most likely to herniate through the foramen magnum:
(A) The vermis
(B) The cerebellar hemispheres
(C) The cerebellar tonsils
(D) The flocculonodular lobe

(15) If a cyst that protrudes from the back at the lumbar region contains the normal spinal cord or cauda equina within the meningeal sac, which extends through the vertebral arch defect. the spinal cord or nerve roots adhere to the inner wall of the sac. Then thiscase is called:
(A) Spina bifida with meningocele
(B) Spina bifida with meningomyelocele
(C) Spina bifida with myeloschisis
(D) Spina Bifida occulta

(16) Anencephaly (Meroencephaly) is one of the congenital anomalies of the brain. This congenital anomaly is due to:
(A) Due to failure of closure of the rostral neuropore of the neural tube during the 4th week
(B) Due to failure of closure of the caudal neuropore of the neural tube during the 4th week
(C) ?
(D) ?

(17) All of the following are correct regarding the dorsal column tract, EXCEPT:
(A) Fibers of Fasciculus Gracilis is from the lower limbs
(B) Fibers of Fasciculus Cuneatus is from the upper limbs
(C) They form the motor decussation at the brain stem (it should be a sensory decussation (called the medial lemniscus) not motor decussation (called pyramidal decussation))
(D) They carry discriminative touch, proprioception, vibratory sense, and conscious muscle joint sense

Pharmacology

(18) All of the following increase the blood pressure, EXCEPT:
(A) Citalopram
(B) Venlafaxine
(C) Amitriptyline
(D) Selegiline
(E) Bupropion

(19) TCA has been used to control bed-wetting in children, due to which effect of the following:
(A) Antimuscarinic
(B) Antiadrenergic
(C) Antihistaminic
(D) ?

Note: For question (18), it is basically that all options, increases NE, which rises the blood pressure, except (A) since it increases serotonin only. Option (C) it causes postural hypotension as a side effect but causes increased blood pressure since it increases NE.

Biochemistry

(20) Catecholamines are degraded by which of the following enzymes:
(A) Monoamine oxidase (MAO)
(B) Tyrosine hydroxylase
(C) Phenylethanolamine N-methyltransferase
(D) Dopamine β-hydroxylase
(E) Choline acetyltransferase

(21) Which of the following neurotransmitter is considered as both an excitatory and inhibitory depending on its function: تم إعتماد الإجابتين، خيار ب و خيار ج
(A) Serotonin
(B) Dopamine
(C) Acetylcholine
(D) Glutamate
(E) GABA

(22) Which of the following defective proteins/genes found in parkinson disease:
(A) ?
(B) Tau(τ) -protein
(C) β-amyloid protein
(D) α-Synuclein

Microbiology

(23) The classic triad found in the bacteria (pyogenic) meningitis is which of the following:
(A) Fever, headache, and nuchal rigidity
(B) Fever, headache, abdominal altered mental status
(C) Headache, coma, and lethargy
(D) Headache, fever, and seizures
(E) Fever, headache, encephalopathy

(24) The most common fungal meningitis pathogen is:
(A) Coccidioides immitis
(B) Cryptococcus neoformans
(C) Histoplasma capsulatum
(D) Blastomyces dermatitides

(25) The most common fungal meningitis pathogen is:
(A) Arboviruses
(B) Enteroviruses
(C) CMV
(D) HIV

(26) Which of the following does not support the growth of C. botulinum spores if they contaminate food: (past paper question)
(A) Acidic conditions provided by foods such as canned fruit
(B) Alkaline conditions provided by vegetables such as mushrooms
(C) Any of the above
(D) Alkaline conditions provided by vegetables such as green beans
(E) Alkaline conditions provided by fish

Pathology

(27) A case about a boy who got hit on the head, with findings like biconvex bleed on the CT that do not cross suture lines, lucid interval (several hours) then neurological deterioration, asking which artery is most affected or which type of bleed is it:
Middle meningeal artery, epidural bleed

(28) A person got bit by a dog, then findings were mentioned, suggesting a neurological condition due to that bite. Which route of the following most likely explains this condition:
(A) Direct implantation
(B) Local expansion
(C) Peripheral Nerves (the condition is best fit with rabies virus, which travels along peripheral nerves from the site of the bite to the CNS, causing encephalitis)
(D) Hematogenous Spread

(29) A case about a woman with dominant polycystic kidney disease that showed up with neurological symptoms, and said that shes suffering the “worst headache” in her life. The most likely cause of this case is:
(A) Atherosclerotic aneurysm
(B) Saccular aneurysm
(C) Mycotic aneurysm
(D) Dissecting aneurysm

(30) Collection of microglial cells surrounding and phagocytosing injured neurons:
(A) Chromatolysis
(B) Fibrosis
(C) Gliosis
(D) Neuronophagia

(31) Brainstem hemorrhages, that is diagnosed with CT or MRI in a transtentorial herniation:
(A) Epidural hemorrhage
(B) Subdural hemorrhage
(C) Subarachnoid hemorrhage
(D) Duret hemorrhage

(32) A case about a patient with an atrial fibrillation, suffering of symptoms suggesting an acute stroke. Which of the following is the reason for that stroke:
(A) Atherosclerosis blockage
(B) Pulmonary embolus
(C) Cardiac (mural) embolus
(D) ?

Physiology

(33) The respiratory quotient of cerebral tissue is _____ in normal individuals:
(A) 0.80–0.75
(B) 0.95–0.99
(C) 0.90–0.99
(D) 0.75–0.50
(E) 0.80–0.85

(34) In a normal individual, which of the following values are correct: (options are not exactly the same in the table below, but are close enough)

	Volume of CSF (ml)	Lumbar CSF pressure (mmH2O)	CSF production (ml/d)
A	90 to 200	70 to 180	550
B	100	70 to 80	500
C	90 to 150	70 to 180	550
D	150	70 to 180	500

(A) D
(B) C
(C) A
(D) B

(35) Which of the following areas is NOT part of the speech in response to hearing:
(A) Dejerine area
(B) Wernike's area
(C) Broca's area
(D) Motor cortex
(E) Brain stem

(36) Which of the following isn't related to Broca's area:
(A) Responsible for speech synthesis
(B) Responsible for planning and motor patterns
(C) Works in close association with the Wernicke language comprehension center
(D) Regulate the function of muscles of lips, tongue, and larynx
(E) Responsible for the words interpretation and determination

(37) Long term potentiation related protein:
CaM kinase II

(38) Kandel and his colleagues use large snail called "Aplysia californica" for their experiment because:
(A) It exhibits simple forms of implicit learning
(B) They have a very complex nervous system
(C) Their ganglia contain neurons that are very small
(D) They have short-fast learning memory
(E) They have a very complex nerves pathways

(39) All of the following regarding the phonological store are correct, EXCEPT:
(A) Act as an inner-ear
(B) It holds words we hear in a speech-based form
(C) It is linked to speech perception
(D) Used to rehearse verbal information

(40) Which of the following is an anabolic/orexigenic (appetite stimulant):
(A) Melanin-concentrating hormone
(B) Glucagon-like peptides 1 and 2
(C) Alpha-melatonin stimulating hormone
(D) Cocaine- and amphetamine-regulated transcript
(E) Prolactin-releasing peptide

(41) In the normal animal, the rage phenomenon is held in check mainly by inhibitory signals from the:
Ventromedial nuclei of the hypothalamus

(42) All of the following autonomic and sensory symptoms are associated with Parkinson disease, EXCEPT:
(A) Paroxysmal vascular flushing
(B) Sialorrhea
(C) Sexsual dysfunction
(D) Diaphoresis
(E) Taste impairment

(43) Regarding rigidity, which of the following is related to it:
(A) Velocity-dependent
(B) NO clonus
(C) Movement resistance in one group of muscles
(D) Hypertonia

(44) In the feed forward inhibition in the cerebellum, which of the following cells are involved:
Stellate cells & Basket cells

(45) ?