

CENTRAL NERVOUS SYSTEM

MIDTERM EXAM
WAREED BATCH

إعداد :



1

All the following statements about CNS stimulants are true except?

Select one:

- a. Amphetamines produce psychostimulation.
- b. Cannabis main active ingredient is delta-9-tetrahydrocannabinol.
- c. Modafinil is a wake promoting agent for narcolepsy and work shift sleep disorder.
- d. Cocaine inhibits noradrenaline & dopamine reuptake in brain.
- e. LSD blocks phencyclidine receptors in brain.

2

Which of the following is false about anti-epileptic drugs?

Select one:

- a. Carbamazepine blocks voltage dependent sodium channels in the inactivated state.
- b. Vigabatrin and valproate increase brain GABA level by inhibiting its catabolism.
- c. Levetiracetam blocks NMDA glutamate receptors.
- d. Ethosuximide blocks T-type calcium channels in thalamic neurons.
- e. Topiramate enhances endogenous GABA activity after binding to GABA-A receptors.

3

Ketamine: Which one of the following is false?

Select one:

- a. It produces analgesia with hypnosis; however, the eyes remain open.
- b. It is derived from phencyclidine and block NMDA glutamate receptors .
- c. It increases blood pressure as well as intracranial and intraocular pressures.
- d. It may produce delirium and hallucinations on recovery.
- e. It increases respiratory rate and lowers PaCO₂.

4

Pain sensation?

Select one:

- a. Is evoked by strong stimulation of specific receptors
- b. Produces reactions that increase transmission of pain impulses
- c. Arises from small-encapsulated receptors
- d. Occurs when the stimulus causes damage of the sensory receptors
- e. Always accompanied by referred pain.

5

All the following are true except?

Select one:

- a. Carbidopa increases the availability of levodopa to the CNS
- b. Concomitant administration of levodopa and monoamine reductase (MAO) inhibitors
- c. Selegiline decreases metabolism of dopamine and increases dopamine levels in brain
- d. Catechol-O-methyltransferase metabolizes levodopa to 3-O-methyldopa
- e. Rotigotine activates the dopamine receptors to in patients with advanced Parkinson's disease complicated by motor fluctuations and dyskinesias

6

All are correct regarding *N. fowleri* EXCEPT?

Select one:

- a. Causative agent of PAM.
- b. Has trophozoite, ellate and cyst forms in warm water.
- c. Best diagnosed by lumbar puncture and CSF examination.
- d. Reach the brain via blood stream.
- e. ellates can be seen in CSF.

8

Lateral Ventricles: Select the incorrect?

Select one:

- a. Communicates with the cavity of the third ventricle through the foramen of Monro
- b. Its body occupies the parietal lobe
- c. The medial wall of the body is formed by the septum pellucidum
- d. The bulb of posterior horn is formed by the forceps major
- e. Amygdaloid body share in the floor of the inferior horn

9

Which of the following matched pairs are NOT TRUE regarding NREM sleep?

Select one:

- a. First stage of sleep - Beta rhythm
- b. Second stage of sleep - Spindles and K complex
- c. Third stage - Lower frequency and high voltage Delta rhythm
- d. First stage of sleep - Last 20 to 30 minutes
- e. Most sleep- Occurs in second stage of sleep

10

An autopsy of brain biopsy revealed widespread hemorrhagic lesions involving the white matter, which of the following is mainly the leading cause?

Select one:

- a. Lobular hemorrhage.
- b. Vasculitis.
- c. Thromboemboli arise from carotid arteries.
- d. Fat emboli.
- e. Bone marrow emboli.

11

Which is correct about the caudate nucleus?

Select one:

- a. Tail forms the floor of the inferior horn of the lateral ventricle
- b. Striate branches of the middle and anterior cerebral arteries are below to the head
- c. Head forms medial wall of the anterior horn of the lateral ventricle
- d. Tail curves downward and backward
- e. Body forms roof of the central part of the lateral ventricle

12

A 21 year-old-women incurs a blow to her head from a fall. She has loss of consciousness for 5 minutes. On examination her deep tendon reflexes are diminished. A head CT scan 6 hours later shows no abnormalities. She recovers over the next week, with no neurological deficits, but cannot remember this event. Which of the following is the most likely consequence from her injury?

Select one:

- a. Epidural hematoma.
- b. Atherosclerosis.
- c. Contusion.
- d. Concussion.
- e. Subdural Hematoma.

13

Which nucleus passes in all of the brain stem?

Select one:

- a. Solitary nucleus
- b. Spinal nucleus of the trigeminal nerve
- c. Vestibular nucleus
- d. Mesencephalic nucleus of the trigeminal nerve
- e. Olivary nucleus

14

Dorsal column-medial lemniscus pathway, which of the following statements best describe it?

Select one:

- a. mediates light touch and pressure
- b. mediates unconscious proprioception.
- c. receives input from Merkel tactile disks
- d. First-order neurons are located in dorsal root ganglia at all levels.
- e. Third-order neurons are located in the Posterior nucleus of the thalamus.

15

One of the following matches is WRONG?

Select one:

- a. SSRIs: Escitalopram
- b. SNRIs: Venlafaxine
- c. Atypical antidepressants: Phenezine
- d. Tricyclic antidepressants: Amitriptyline
- e. MAO inhibitors: Selegiline

16

The following side effects may be observed with halothane except?

Select one:

- a. Hypotension.
- b. Jaundice
- c. Diffusion anoxia
- d. Ventricular premature contractions.
- e. Hypercapnoea.

17

The most likely cause of recurrent meningitis in a patient with C5 complement deficiency is?

Select one:

- a. Haemophilus influenza
- b. Klebsiella pneumonia
- c. Streptococcus pneumonia
- d. Neisseria meningitidis
- e. Listeria monocytogenes

18

The spinal cord begins?

Select one:

- a. As a continuation of the upper end of medulla oblongata
- b. As a continuation of the lower end of medulla oblongata
- c. AS a continuation of the pons
- d. As a continuation of the midbrain
- e. As a continuation of the medulla oblongata

19

Child has one median eye and one cerebral hemisphere, What are the means?

Select one:

- a. Anencephaly
- b. Hydrocephaly
- c. Microcephaly
- d. Cyclopia
- e. Cranium bifidium

20

More than 70% of ATP molecules generated in brain tissue are consumed in?

Select one:

- a. synthesis of neurotransmitters from glucose
- b. the conversion of pyruvate to lactate
- c. the restoration of ionic gradients which are dissipated due to induction and excitation particularly by $\text{Na}^+/\text{Ca}^{2+}$ ATPase pump
- d. pumping ions actively against their concentration gradients by Na^+/K^+ ATPase pump
- e. the reuptake of glutamate by astrocytes

21

One of the following is Correct about central nervous system tumors?

- a. They Comprise 40% of all pediatric tumors
- b. Neuronal tumors are usually higher grade**
- c. NF2 gene on chromosome 22 is commonly mutated in ependymomas and meningiomas
- d. Rosenthal fibers are exclusively found in neoplastic lesions
- e. Molecular features are supplementary in the 2016 WHO classification of CNS tumors.

22

The cerebellum has the following except?

- a. It occupies the greater part of the middle cranial fossa**
- b. It is covered by the tentorium cerebelli
- c. It lies posterior to the 4th ventricle
- d. It is formed of a median part called the vermis and 2 cerebellar hemisphere
- e. It has 2 surfaces (Superior and inferior)

23

A patient presented to you with encephalitis, his family said they noticed psychiatric and personality changes. Lumbar puncture showed mainly lymphocytosis (500 cells/ mm³) and CT showed temporal lobe involvement, you should start treating the patient with?

- a. Sancovir
- b. Acyclovir**
- c. Lamivudine
- d. Remdesivir
- e. Ampicillin

24

All the following about morphine are true EXCEPT?

- a. Acts on M1 receptors and causes analgesia and euphoria.
- b. Acts on M2 receptors and causes respiratory depression.
- c. Should be given orally.
- d. Inhibit release of excitatory neurotransmitters.**
- e. It high efficacy.

25

A patient with headache, photophobia and projectile vomiting. Lumbar puncture showed low glucose and high protein (60mg/dl) and 2500 polymorphs (neutrophils). The likely causative organism is?

Select one:

- a. Herpes simplex virus 1
- b. Herpes simplex virus 2
- c. Mumps virus
- d. Enterovirus
- e. Streptococcus pneumonia**

26

The prophylaxis for close contacts of H. influenza meningitis case is?

- a. Rifampicin
- b. Gentamycin
- c. Acyclovir
- d. Ampicillin
- e. Cefaclor

27

In the spinal cord, motor neuron cell bodies are located in
Select one:

- a. Lamina I.
- b. Lamina II.
- c. Lamina V.
- d. Lamina IX
- e. Lamina X

28

One of the following pairs between the central nervous system tumor and its distinctive histologic feature is wrongly matched?

- a. Primary Central Nervous System Lymphoma: Perivascular Accentuation
- b. Ependymoma: Cellular whorls
- c. Oligodendroglioma: Fried egg appearance
- d. Medulloblastoma: Homer Wright Rosettes
- e. Pilocytic Astrocytoma: Hairlike processes

29

Which of the followings nuclei are motor?

- a. Nucleus ambiguus
- b. Dorsal nucleus of the vagus
- c. Solitary nucleus
- d. Inferior vestibular nucleus
- e. Spinal nucleus of trigeminal

30

Proprioceptive sensations include all the following, except?

- a. Position sense
- b. Equilibrium sense
- c. Movement sense
- d. Kinesthetic sense
- e. Muscle tension.

31

Arachnoid Mater: Which is correct ?

- a. It is closely adherent to the dura mater
- b. It is separated from the pia mater by a potential space filled by a film of fluid
- c. Descend into the deepest sulci
- d. The subarachnoid space below it contain the choroidal plexuses
- e. If widely separated from the pia mater will form subarachnoid cisternae

32

All the following are true except?

Select one:

- a. Haloperidol and pramipexole antagonize the dopamine receptors and causes secondary parkinsonism
- b. Levodopa is a metabolic precursor of dopamine restoring dopaminergic system by enhancing synthesis of dopamine
- c. levodopa is actively transported into CNS and is converted to dopamine in brain
- d. Carbidopa diminishes metabolism of levodopa in gastrointestinal tract and peripheral tissues; thus, it increases availability of levodopa to CNS
- e. Levodopa has short half-life causing fluctuations in plasma concentration and may produce — fluctuations in motor response

33

Which one of the following is false about isoflurane?

- a. It has a pleasant smell.
- b. It has lower blood solubility than halothane
- c. It lowers blood pressure due to lowering of total peripheral resistance.
- d. It can be used with CO₂ absorption system (lime water) in the semiclosed method
- e. It depresses respiration insignificantly.

34

All of the followings are nuclei of trigeminal except?

Select one:

- a. Spinal nucleus
- b. Main sensory nucleus
- c. Mesencephalic nucleus
- d. Solitary nucleus
- e. Motor nucleus to muscles of mastication

35

Visceral pain is usually felt?

- a. Deeply in the diseased viscera
- b. In deep tissues close to the diseased viscera
- c. In skin areas that just overlie the diseased viscera
- d. In skin areas remote from the diseased viscera
- e. In skin area Showing phenomenon of hyperalgesia

36

Which of the following matched pairs are NOT TRUE?

- a. Motivation - Nucleus Accumbens and Septal nuclei
- b. Kluver Bucy syndrome - Mellow
- c. Rabies - Destruction somatic neuron in the amygdala
- d. Benzodiazepines- Calming effect like alcohol
- e. Mania - Increase Serotonin and Norepinephrine

37

Which one of the following statements about sedative hypnotics is false?

- a. Ramelteon needs few weeks to calm down patients with generalized anxiety disorder.
- b. Alprazolam acts quickly to terminate acute panic attacks.
- c. Diazepam acts shorter after a single dose than after repeated use for few days.
- d. Alkalinization of urine can enhance renal elimination of Phenobarbital.
- e. Buspirone produces its action by acting as partial agonist at 5-HT 1A receptors.

38

Regarding FASD, all the following are found in fetus EXCEPT

- a. Small head circumference.
- b. Small eye opening.
- c. thick upper lip
- d. Small midface.
- e. Skin folds at corner of eye.

39

The following may be useful in treatment of myoclonic epilepsy except?

- a. Clonazepam.
- b. Oxacarbazine
- c. Levetiracetam.
- d. Lamotrigene.
- e. Topiramate.

40

Transmitters in pain control system include all the following, except?

- a. Serotonin .
- b. Acetylcholine
- c. Enkephalin
- d. Endorphins
- e. Dynorphin

41

All the following are types of schizophrenia EXCEPT?

- a. Catatonic type.
- b. Residual type.
- c. Disorganized type.
- d. Multiple personalities type.
- e. Paranoid type.

42

The followings are blood supply and drainage of cerebellum except?

- a. Superior cerebellar artery
- b. Anterior inferior cerebellar artery
- c. Posterior cerebral artery
- d. Venous drainage into the dural venous sinuses
- e. Posterior inferior cerebellar

43

All of the following nerves carry parasympathetic except?

Select one:

- a. Glossopharyngeal nerve
- b. Facial nerve
- c. Trochlear nerve.
- d. Oculomotor nerve
- e. Mandibular nerve

44

What is the Broca's area?

Select one:

- a. Area 39
- b. Area 6
- c. Area 44
- d. Area 22
- e. Area 8

45

Which of the following is NOT CONSISTENT with stretch reflex?

- a. Myotatic reflex
- b. Reciprocal inhibition
- c. Monosynaptic reflex
- d. Hypertonia and Babinski sign due to damage of corticospinal tract
- e. Slack reflex

46

All the following are incorrectly combined (Lesion: the most common location), except?

- a. Intraparenchymal hemorrhage: Thalamus.
- b. Cerebral Amyloid Angiopathy: leptomeningeal arterioles.
- c. Berry (saccular) aneurysm: Posterior communicating artery.
- d. lacunar infarcts: Caudate nucleus.
- e. Primary Brain thrombosis: Middle cerebellar artery.

47

How many ventral roots arise from the cervical enlargement?

- a.9
- b.10
- c.8
- d.32
- e.18**

48

The visual area is supplied by?

- a. Anterior cerebral artery
- b. Posterior cerebral artery**
- c. Middle cerebral artery
- d. Internal carotid artery
- e. Charcot's artery

49

At adult, the spinal cord ends at?

- a.L1/L2**
- b. L2/L3
- c.L3/L4
- d.L4/L5
- e. Tip of the coccyx

50

Which one of the following is false about benzodiazepines?

- a. They increase entry of chloride ions into neurons acted upon by GABA.
- b. They can cause skeletal muscle relaxation.
- c. They can cause psychomotor slowing.
- d. They can reduce delusions and hallucinations in psychotic patients**
- e. Use of large doses can induce sleep and cause anterograde amnesia.

51

Which of the following regarding traumatic vascular lesions of the brain is correct?

- a. The middle meningeal vein is vulnerable to injury and mostly affected in the epidural hematoma.**
- b. The subdural hematoma may expand rapidly and constitutes a neurosurgical emergency.
- c. In children, both epidural and subdural hematomas are common and associated with skull fracture.
- d. The risk of repeat bleeding in subdural hematoma is greatest in the first few days after the initial hemorrhage
- e. The most symptoms associated with subdural hematoma are nonlocalizing neurologic manifestations.

52

The following statements describe Ascending Spinal Tracts, which one is wrong?

- a. Represent functional pathways
- b. They convey sensory information from soma or viscera to higher levels of the neuraxis.
- c. Always consist of a chain of three neurons: first-, second-, and third-order neurons.
- d. May decussate before reaching their final destination.
- e. Give rise to collateral branches that serve in local spinal reflex arcs.

53

Which of the following is not a manifestation of neocerebellar syndrome?

- a. Stamping gait.
- b. Kinetic tremors.
- c. Asthenia & rebound phenomenon.
- d. Hypotonia and pendular knee jerk.
- e. Nystagmus

54 Regarding high level consumption of alcohol, all the following are true EXCEPT?

- a. shrinking brain.
- b. Decreased metabolism of glucose.
- c. Addiction
- d. Euphoria.
- e. High blood pressure.

55 The following are adverse effects of sodium valproate when used in epilepsy except?

- a. Impaired cognition.
- b. Hepatitis.
- c. Alopecia.
- d. Increase in weight.
- e. Increased blood level of lamotrigine.

56

One of the following is a function of Endorphin?

- a. Major excitatory neurotransmitter
- b. Motivation
- c. Arousal
- d. Regulation of attention
- e. Act within pain pathways

57

The vagus nerve exits from?

- a. The anterior median fissure
- b. Upper part of the posterolateral sulcus
- c. Anterolateral sulcus
- d. Lower part of the posterolateral sulcus
- e. Middle part of the posterolateral sulcus

58

Which of the following is NOT CONSISTENT with Golgi tendon reflex?

- a. Stretch reflex
- b. Inverse myotatic reflex
- c. Autogenic inhibition
- d. Reciprocal activation
- e. Glycine hyperpolarize the contracting muscle

59

The following may be adverse effects of therapeutic doses of BDZs except?

- a. Impaired cognition and judgement.
- b. Hangover.
- c. Respiratory depression.
- d. Enhancement of CNS depressant action of ethanol.
- e. Disinhibition.

60 All of the followings are derivatives of neural crest except?

- a. Dura matter
- b. Pigment cells
- c. Otic ganglia
- d. Chromaffin cells of suprarenal medulla
- e. Schwann cells

61

One of the following is not correct regarding Blood Brain Barrier (BBB)?

- a. The endothelial cells in cerebral capillary are mostly non-fenestrated
- b. There is no paracellular diffusion due to presence of tight junctions between endothelial cells
- c. The basement membrane is continuous
- d. The astrocytic end feet play a vital role in development of BBB
- e. The pericytes have a role in the formation of tight junctions

62

Which of the followings is INCORRECT regarding fungal and amoebic meningitis?

- a. Cryptococci produce polysaccharide capsule.
- b. They use macrophages to cross the blood-brain barrier.
- c. Infections in immunologically normal people are very common.
- d. Person-to-person transmission has not been documented.
- e. If left untreated, cryptococcal meningoencephalitis may lead to brain damage, hearing loss and hydrocephalus.

64

What are the means of commissural fibers?

- a. They connecting the cerebral cortex with the lower centers
- b. They connect parts of the cerebral cortex in the same hemisphere.
- c. They incoordination of the activities of the right and left cerebral hemisphere
- d. They connect parts of cerebral cortex of one hemisphere with the same part on opposite side
- e. They connecting the lower centers with the cerebral cortex

65

All of the following are basal nuclei except?

- a. Globus pallidus
- b. Amygdaloid nucleus
- c. Tapetum
- d. Claustrum
- e. Caudate

66

Cortico-spinal tract is characterized by the following, except?

- a. It originate from area 4, 6 and sensory areas.
- b. In the internal capsule it occupies the posterior half of posterior limb.
- c. In the mid brain it occupies the middle 3/5 of basis peduncle
- d. In the lower medulla motor decussation occurs.
- e. Mainly control same side movements

67

The uncus is supplied by?

- a. Anterior cerebral artery
- b, Posterior cerebral artery
- c. Middle cerebral artery
- d. Internal carotid artery
- e. Charcot's artery

68

Parasympathetic gray column is confined to spinal cord segments?

- a. Third cervical to first thoracic
- b. Second cervical to first lumbar
- c. Ninth thoracic to first lumbar
- d. Second to fourth sacral
- e. Second to fourth lumbar

69

All following about antidepressants are TRUE EXCEPT?

- a. SSRIs have replaced the use of TCAs and MAO inhibitors
- b. SNRIs effective in treatment of neuropathic pain
- c. Imipramine is useful in treatment of bed-wetting in children
- d. MAO inhibitors use is limited because of complicated dietary restrictions
- e. MAO inhibitors and SSRIs can be co-administered together

70

Which of the following matched pairs are NOT TRUE regarding electrophysiology of the thalamus?

- a. Tonic firing mode - During Wakefulness
- b. Burst firing mode - During sleep
- c. Thalamic reticular neurons - hyperpolarizes the projection relay neurons thus the relay neurons will respond with burst mode when next stimulated
- d. Brainstem modulators receives Ach - Depolarizing the projection relay neurons thus the relay neurons will respond with tonic mode when next stimulated
- e. Low firing mode of cortical feedback - Ends up with the excitation of the cortex nucleus much greater than the inhibition in the reticular thalamic

71

The pyramidal tract arises from?

- a. Precentral gyrus
- b. Postcentral gyrus
- c. Superior temporal gyrus
- d. Postcalcarine sulcus
- e. prefrontal area

72

Which body part is represented most inferiorly within the primary motor cortex?

- a. Face
- b. Hand
- c. Neck
- d. Abdomen
- e. Lower limb

73

A 12-year-old girl presented with 6 months history of worsening headaches. Physical examination revealed an ataxic gait and an incoordination of upper and lower limbs. Brain MRI revealed a cystic mass in the right cerebellar hemisphere. Sectioning of the mass after the resection surgery showed a cystic mass with 1-cm mural nodule. Microscopically, the mass is composed of cells that are positive for glial fibrillary acidic protein (GFAP) and rich in eosinophilic granular bodies. Which of the following molecular markers is most likely to be found in the cells of this mass?

- a. BRAF mutations
- b. MYC amplification
- c. Mutations in IDH1/2
- d. 1p and 19q co-deletions.
- e. Mutations in the NF2

74

Which of the following matched pairs are NOT TRUE during circadian regulation and sleep?

- a. Suprachiasmatic nucleus - Stimulates dorsomedial hypothalamus during the daylight
- b. Paraventricular nucleus and lateral hypothalamus - Stimulates T1 and T2 and sup. Cervical ganglion increases dramatically the melatonin during the daylight
- c. Glutamate from dorsomedial hypothalamus - Would increase hypocretin from the lateral hypothalamus during the daylight

d. Tuberomammillary nucleus - Stimulated during the daylight by hypocretin

- e. Ventrolateral preoptic nucleus - Stimulated during the night by decreasing suprachiasmatic activity and dorsomedial hypothalamus

75

Thermal sensations?

- a. Are evoked by all changes in environmental temperatures
- b. Are evoked by stimulation of thermo-sensitive pain receptors
- c. Are involved in regulation of metabolic activity
- d. Are transmitted by A beta sensory fibers
- e. Are transmitted by A alpha sensory fibers**

76

Climbing fibers----- ?

Select one:

- a. Arise from inferior olive and end in molecular layer of cerebral cortex
- b. Arise from inferior olive and end in Granular layer of cerebellar cortex**
- c. Arise from clark nucleus and end in molecular layer of cerebellar cortex
- d. Arise from substantia gelatinosa and end in Polymorphic cell layer
- e. Arise from inferior olive and end in molecular layer of cerebellar cortex

77

The trapezoid body is present at the level of----- ?

- a. Lower pons.
- b. Lower medulla
- c. Upper pons.**
- d. Upper medulla.
- e. Middle pons.

78

The thin and convoluted outer layer of gray matter that covers the cerebral hemisphere is

- a. Meninges
- b. Dura
- c. Thalamus
- d. Medulla oblongata
- e. Cerebral cortex**

79

The followings are seen in the inferior surface of cerebellum except?

Select one:

- a. Tonsil
- b. Vallecule
- c. Pyramid of vermis
- d. Nodule of vermis
- e. The lingula

80

Extends in the brainstem and continues in the spinal cord as sulcomarginal tract?

Select one:

- a. Medial lemniscus
- b. Lateral lemniscus.
- c. Fasciculus proprius.
- d. Medial longitudinal bundle.
- e. Trigeminal lemniscus.

63

Align along axons and provide insulating layers of myelin in the brain and spinal cord-----?

Select one:

- a. Microglia
- b. Astrocytes
- c. Ependymal cells
- d. Oligodendrocytes
- e. Schwann cell

7

Motor area of the cerebrum?

Select one:

- a. It lies on the superolateral surface
- b. The body is erect
- c. It is supplied by inferior cerebral artery
- d. The area of the hand is larger than the foot in the hand writer
- e. It gives origin to corticocerebellar tract

إنتهى

بالتوفيق للجميع

