

CENTRAL NERVOUS SYSTEM

FINAL EXAM
WAREED BATCH

إعداد :



1

Halothane and sevoflurane inhalation anaesthetics: Which one of the following is false?

- a. Sevoflurane is chemically unstable; it decomposes on contact with lime water.
- b. Sevoflurane produce faster induction of anaesthesia than halothane.
- c. Sevoflurane has pleasant smell, and produces less respiratory depression
- d. Halothane causes higher incidence of ventricular arrhythmia.
- e. **Metabolism of sevoflurane in liver produces large amount of fluoride radicals.**

2

One of the following is not correct?

- a. the uncoupling between O₂ and glucose in brain tissue indicates that not all glucose taken up will be consumed in aerobic respiration for energy generation
- b. circulating lactate can be used as energy substrates in brain
- c. **neuronal cells can form lactate from pyruvate in reversible reaction catalysed by lactate dehydrogenase**
- d. Astrocytes store small amount of glucose as glycogen
- e. GLuT 1 55KDa isoform is localized on endothelial cells of blood brain barrier

3

Enkephalin blocks pain transmission by?

- a. Blocking the response of pain receptors to painful stimuli
- b. Slowing down transmission of pain impulses through synapses in the pain pathway
- c. Inhibiting the response of the cerebral cortical somatic sensory area to pain signals
- d. **Blocking Ca⁺⁺ channels in the pre-synaptic central terminals of pain sensory fibers**
- e. Blocking Ca⁺⁺ channels in the post-synaptic central terminals of pain sensory fibers

4

Regarding olanzapine, all the following are facts EXCEPT?

- a. It is the antipsychotic number one in sales. .
- b. It is good for controlling mood symptoms.
- c. It exhibits multireceptor action.
- d. **Side effects: weight loss and agitation.**
- e. It is available in wafer.

5

The prophylaxis for pregnant women who has been in contact with a Neisseria meningitis case is?

- a. **Ceftriaxone**
- b. Ciprofloxacin
- c. Acyclovir
- d. Ampicillin
- e, Cefaclor

6

All of the following histopathologic features can upgrade meningioma WHO grade to atypical meningioma (grade II) except?

- a. Increased mitotic rate
- b. Prominent nucleoli
- c. Bone extension
- d. Brain invasion
- e. Necrosis

7

The junction between two communicating neurons is

- a. Synapse
- b. Neuromuscular junction
- c. Dendrite
- d. Axon
- e. Receptor

8

The cavernous sinuses: Select the incorrect?

- a. Situated in the middle cranial fossa
- b. Have numerous trabeculae cross their interior
- c. Superior petrosal sinus drains the cavernous sinus into the straight sinus
- d. Inferior petrosal sinus drains the cavernous sinus into the internal jugular vein
- e. Extends from the superior orbital fissure in front to the apex of the petrous part of the temporal bone behind

9

All the following about naloxone and naltrexone are true EXCEPT?

- a. Naloxone is pure competitive antagonist.
- b. Naloxone given IV in opioid overdose toxicity.
- c. Naltrexone has short duration of action than naloxone.
- d. Naltrexone can be used orally.
- e. Naltrexone is useful in chronic addicts.

10

Proprioceptors include all the following types of receptors, except?

- a. Muscle spindles
- b. Pressure receptors
- c. Vestibular receptors
- d. Joint receptors
- e. Thermal receptors

11

All of the followings nuclei in the pons except?

- a. Superior vestibular nucleus
- b. Inferior vestibular nucleus
- c. Lateral vestibular nucleus
- d. Medial vestibular nucleus
- e. Special lacrimatory nucleus

12

Which of the following is NOT describing the Thalamocortical Ascending System?

- a. During drowsiness or sleep the inputs still going to the thalamus but not to the cortex
- b. The double process of excitation in Ach nicotinic and inhibition in Ach muscarinic receptors of the thalamic nuclei is the maximum activity of projection to the cortex during wakefulness
- c. Antihistamine would eliminate inhibition inputs coming from tuberomammillary nuclei depress the activity of the thalamus and the patient becomes drowsy
- d. Serotonin excites the interneuron and inhibit the thalamic projection neuron end up with decreasing the excitability of projection neurons
- e. The function of the thalamus is only processing the inputs before sending to the cortical network

13

Which of the following sentence is NOT true regarding REM sleep?

- a. Every hour and a half there is a period of REM sleep
- b. Rapid eye movement sleep correlates with current dreams
- c. Wakefulness stage
- d. Muscle atonia Except for the eye and respiratory muscles
- e. Most of the recalled dreams and changes in body temperature happen in longer REM in last period of REM sleep

14

One of the following pairs between the central nervous system tumor and its WHO grade is wrongly matched?

- a. Atypical meningiomas: WHO grade II
- b. Ependymoma: WHO grade II
- c. Medulloblastoma: WHO grade IV
- d. Pilocytic Astrocytoma: WHO grade II
- e. Oligodendroglioma: WHO grade II



15

All of the following are areas of the frontal lobe except?

- a. Exner area
- b. Motor area
- c. Wernicke's area
- d. Broca's area
- e. Areas of 6&8

16

Gracile and cuneate tracts carry?

- a. Pain sensation
- b. Temperature sensation
- c. Fine (light) touch
- d. Motor pathway
- e. Extra pyramidal pathway

17

Which of the following is correct regarding vascular disease of the central nervous system?

- a. The most sensitive neurons to transient global ischemia is the pyramidal cells of the hippocampus CA2 neurons.
- b. Subarachnoid hemorrhage caused mainly by hypertension.
- c. There is little if any collateral flow for deep white matter which supplied by deep penetrating vessels.
- d. Double watershed area is between the anterior and the middle meningeal artery distributions.
- e. Pyramidal neurons in the cerebellum produce a pattern called pseudolaminar necrosis resulting from ischemia.

18) The neurotransmitter that simulate morphine in its actions is?

- a. Acetyl choline
- b. Endorphin
- c. Leptin
- d. Dopamine
- e. Substance P

19

Neurotransmitters may be excitatory or inhibitory. The main excitatory neurotransmitter of the central nervous system is?

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

20

Inhibition of pain signals by tactile stimulation of a skin surface involves which of the following selections?

- a. Type A alpha fibers in peripheral nerves
- b. Type A beta fibers in peripheral nerves
- c. Type A delta fibers in peripheral nerves
- d. Type C fibers in peripheral nerves
- e. Autonomic sympathetic afferent fibers

21

All following about antidepressants are TRUE EXCEPT?

- a. Atypical antidepressants adverse effect: suicidal thoughts in teenagers
- b. SNRIs have no activity at muscarinic and histaminic receptors
- c. Tricyclic antidepressants block alpha-adrenergic, histamine and muscarinic receptors
- d. MAO inhibitors adverse effects: orthostatic hypotension and dry mouth
- e. Serotonin syndrome manifestations: muscle rigidity and confusion

22

Selective serotonin reuptake inhibitors, one is FALSE?

- a. Have little blocking activity at muscarinic, alpha-adrenergic, and histaminic receptors
- b. Safe in overdose
- c. Half-life 16-36 hours
- d. It takes 4 weeks to produce significant improvement in mood
- e. Adverse effects: delayed ejaculation

23

Child has only base of the skull, What are the means?

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

24

The pain and temperature sensation is carried through?

- a. Medial lemniscus
- b. Spinal lemniscus
- c. lateral lemniscus
- d. Dorsal lemniscus
- e. facial lemniscus

25

Which of the following pairs are NOT CORRECT?

- a. Locus coeruleus - Epinephrine
- b. Dorsal raphe nucleus - 5-HT
- c. Pedunculopontine nucleus - Acetylcholine
- d. Ventral tegmentum area - Dopamine
- e. Reticular activating system — At the level of brain stem

26

Concerning withdrawal of alcohol, all the following are symptoms of delirium tremens EXCEPT?

- a. Disorientation.
- b. Sleep disorders.
- c. Confusion.
- d. Hallucinations.
- e. Decreased blood pressure.

27

How many nerves arise from the spinal cord?

- a. 31
- b. 33
- c. 62
- d. 63
- e. 30

28

A patient from India with subacute meningitis and decreased level of consciousness, the CSF showed 300 cells mainly 7 lymphocytes, decreased sugars and increased protein, chest x ray showed cavitation; the likely causative organism is?

- a. Mycobacterium tuberculosis
- b. Enterovirus
- c. H. influenza
- d. Klebsiella pneumonia
- e. Mumps

29

Lissaur tract----- ?

- a. Part of pain and temperature
- b. Relay in main sensory nucleus
- c. Continue as ventral spinothalamic tract
- d. Part of proprioceptive sensation
- e. Continue in the brain stem as lateral Lemniscus

30

The following adverse effects match except?

- a. Phenytoin: Hypertrophy of the gums.
- b. Carbamazepine: worsening of petit mal and myoclonic epilepsy.
- c. Vigabatrin: constriction of visual field.
- d. Topiramate: myopia and glaucoma**
- e. Sodium valproate: impaired cognition in children.

31

Concerning acute cognitive impairment in alcoholic person, all the following are correct EXCEPT?

- a. Memory impairment.
- b. Attention impairment.
- c. Alcoholic myopia.
- d. Impaired judgment of his abilities.
- e. Curved P300.**

32

Anterolateral sulcus gives exit to?

- a. The 5th cranial nerve
- b. The 7th cranial nerve
- c. The 12th cranial nerve**
- d. The 10th cranial nerve
- e. The 9th cranial nerve

33

Which of the following matched pairs are NOT TRUE?

- a. Mania and depression- Imbalance Ach
- b. Papez circuit- Establishing the emotional significance of memory for the purpose of life
- c. Damage Papez circuit- Alzheimer's disease
- d. Fornix- Major output tract of the hippocampus in Papez circuit
- e. Schizophrenia- Caused by decreased dopamine**

34

A 58-year-old female presented with a 1-week history of worsening left-sided upper and lower extremity weakness, described as an inability to hold objects in her left hand and frequent falls. Brain MRI demonstrated a 3 x 3 cm right frontoparietal dural based mass. The mass is surgically removed and microscopic examination shows elongated cells forming tight clusters and whorls. What is the most likely diagnosis?

- a. Pilocytic Astrocytoma
- b. Ependymoma
- c. Tuberculoma
- d. Metastasis
- e. Meningioma**

35

The third ventricle: Which is incorrect?

- a. The tela choroidea situated above the roof of the ventricle
- b. Body of the fornix in its roof
- c. Pineal gland in its posterior wall
- d. Lower part of its lateral wall is the thalamus
- e. Posteriorly communicates with the fourth ventricle through the cerebral aqueduct (of Sylvius)

36

Zolpidem: Which one of the following is false?

- a. It has low incidence of dependence.
- b. It is not helpful for jet-lag insomnia.
- c. It does not bind to BDZ receptors when the GABA-A receptor contains alpha2-subunits.
- d. It has skeletal muscle relaxing and anticonvulsant action.
- e. It is a hypnotic that does not produce hangover or rebound insomnia after sleep.

37

Which of the following matched pairs are NOT TRUE?

- a. Acetylcholine - Secreted during REM sleep
- b. Dopamine - Secreted during Wakefulness
- c. Histamine - Secreted during REM sleep
- d. Adenosine - Secreted during the night
- e. Glutamate - Secreted during wakefulness

38

All the following are true except?

- a. Benztropine, trihexyphenidyl, procyclidine and biperiden are antimuscarinic agents
- b. Amantadine has several effects including Inhibiting N-methyl-D-aspartate type of glutamate receptors
- c. Rotigotine has duration of action longer than that of levodopa and therefore less effective in patients exhibiting fluctuations in their response to levodopa
- d. Antimuscarinic agents interfere with gastrointestinal peristalsis and are contraindicated in patients with glaucoma, prostatic hyperplasia, or pyloric stenosis.
- e. Stalevo is an excellent combination of drugs for the management of Parkinson disease

39

All of the following are correct regarding Cryptococcus neoformans EXCEPT?

- a. Yeast cells multiply by budding.
- b. Found in pigeons faeces.
- c. Causes meningitis.
- d. Infection is transmitted from person to person.
- e. Infection occurs by inhalation of air born spores

40

Regarding the Fissures of cerebellum. Which one is false?

- a. Great number of horizontal fissures on the inferior and superior surfaces
- b. Primary fissure is a V-shaped fissure on the superior surface
- c. Secondary (postero-lateral) fissure on the inferior surface
- d. Secondary fissure separates the folliculo-nodular lobe (infront) from the posterior lobe of the cerebellum
- e. Primary fissure separates the anterior lobe from the posterior lobe

41

The motor nuclei of the facial nerve are situated in the ----- ?

- a. Floor of the third ventricle
- b. Cerebellum
- c. Midbrain
- d. Pons
- e. Medulla oblongata

42

All are correct regarding amoebic meningitis EXCEPT?

- a. The incubation period of *N. fowleri* between 1-14 days after exposure.
- b. The PAM has two stages with death occurs after the first or the second stage of disease.
- c. Trophozoite and ellate form of *N. fowleri* are found in CSF.
- d. *Acanthamoeba* probably reaches the brain by hematogenous dissemination.
- e. The clinical course of *Acanthamoeba* is more prolonged than that of *Naegleria* and occasionally ends in spontaneous recovery.

43

The area of the muscles of the hand is supplied by?

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

44

Diazepam : Which one of the following is true?

- a. causes hangover in low sedative doses.
- b. prolongs REM sleep and slow-wave sleep.
- c. **is effective i.v. for stopping convulsions of status epilepticus.**
- d. can cause respiratory depression if given orally in large therapeutic doses.
- e. Its absorption is slow and erratic after oral administration.

45

The following statements concern the hypothalamus are false EXCEPT?

- a. It lies below the thalamus in the tectum of the midbrain
- b. It is not related to the limbic system
- c. The hypophyseal portal system carries the releasing hormones and the release-inhibiting hormones to the secretory cells of the anterior lobe of the hypophysis
- d. **Have no somatic and visceral afferents**
- e. The lateral boundary of the hypothalamus is formed by the external capsule

46

Basket cells are present in the... layer of cerebellar cortex?

- a. **Molecular**
- b. Pyramidal
- c. Granular
- d. Pleomorphic.
- e. Purkinje cell layer

47

All of the following are parts of the corpus callosum except?

- a. Splenium
- b. Rostrum
- c. Genu
- d. Body
- e. **Lamina terminalis**

48

Isocitrate Dehydrogenase Mutations (IDH1 and IDH2) are commonly observed in all of these central nervous system tumors except?

- a. Anaplastic astrocytomas.
- b. Diffuse astrocytoma
- c. Oligodendrogliomas
- d. Secondary Glioblastoma
- e. **Primary Glioblastoma.**

49

The filum terminal is?

- a. The part of arachnoid matter
- b. The part of pia matter
- c. The part of dura matter
- d. The lower part of the spinal cord
- e. One of the contents of the cauda equina in adult only

50

Broca's area is a specialized portion of motor cortex. Which condition best describes the deficit resulting from damage to Broca's area?

- a. Spastic paralysis of the same side hand
- b. Paralysis of the muscles of the larynx and pharynx
- c. Inability to use two hands to grasp an object
- d. Inability to direct the two eyes to the contralateral side
- e. Inability to speak whole words correctly

51

Clastrum presents?

- a. Lateral to the insula
- b. Medial to the insula
- c. Lateral to the internal capsule
- d. Adherent to the lentiform nucleus
- e. Lateral to the globus pallidus

52

Which of following sentences is incorrect regarding the Hypertensive cerebrovascular diseases?

- a. Massive intraparenchymal hemorrhage one of the complications of the Hypertension.
- b. Lenticular nucleus is the most common area affected by lacunar infarcts.
- c. The main mechanism of massive hemorrhage in hypertension is hyaline atherosclerosis.
- d. Ganglionic hemorrhages mainly caused by hypertension.
- e. Slit hemorrhages area caused by hypertension.

53

The tract of nerve fibers which connects the cerebral hemispheres is

- a. Corpus luteum
- b. Corpus callosum**
- c. Corpora quadrigemina
- d. Cerebral aqueduct
- e. Grey commissure

54

Which of the followings parasympathetic nuclei of the facial nerve ?

- a. Inferior salivary nucleus
- b. Superior salivary nucleus**
- c. Edinger westphal nucleus
- d. Solitary nucleus
- e. Mesencephalic nucleus

55

Intermittent Claudications is?

- a. Visceral pain.
- b. Deep pain.**
- c. Cutaneous hyperalgesia.
- d. Colicky pain.
- e. Secondary hyperalgesia.

56

Reaction to pain includes all the following, except?

- a. Increased heart rate
- b. Depression
- c. Withdrawal reflexes
- d. Stoppage of impulse discharge from nociceptors in chronic painful conditions**
- e. In sever type of pain, Bradycardia occurs

57

What is the motor speech area?

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

58

The end of the spinal cord is?

- a. Cylindrical in shape
- b. Triangular in shape
- c. Tapering in shape
- d. Pyriform in shape
- e. Oval in shape

59

Primary cutaneous hyperalgesia?

- a. Develops in the normal skin region around the area of flare
- b. Is an abnormal condition in the skin in which painful stimuli become more severe
- c. Is due to changes in threshold of pain receptors
- d. Is associated with throbbing type of pain
- e. Accompanied with normal skin color

60

Which is wrong about amygdaloid body?

- a. Its function is emotional behavior
- b, Its afferent comes from olfactory tract
- c. It is part of the limbic system
- d. It is situated close to the uncus
- e. Its efferent ends in the epithalamus

61

The following are useful for classical petit mal epilepsy except?

- a. Clonazepam.
- b. Valproate.
- c. Ethosuximide.
- d. Levetiracetam.
- e. Tiagabine.

62

Which cranial nerve exits from the posterior of the brain stem?

- a. The oculomotor nerve
- b. The vestibular nerve
- c. The facial nerve
- d. The cochlear nerve
- e. The trochlear

63

The following have active hepatic metabolite except?

- a. Alprazolam.
- b. Lorazepam.**
- c. Diazepam.
- d. Chlordiazepoxide.
- e. Flurazepam.

64

Which of the following matched pairs regarding Wake- up theory of thalamus is NOT TRUE?

- a. The Burst strong activation of the cortex --- Switches the burst firing mode to tonic in the thalamic projections
- b. Tonic mode in the thalamus - Convey the information to the cortex more accurately
- c. Tonic firing mode - Analyzed by the cortex in more details
- d. Burst mode of the thalamic nuclei - Stimulate the cortex directing cortex to new stimulus
- e. Burst firing mode - Changes linearly with the strength of the input which means the stronger the input the greater the firing**

65

Which midbrain cells are involved in general light reflexes?

- a. Red nucleus
- b. Superior colliculus**
- c. Inferior colliculus
- d. Substantia nigra
- e. Medial geniculate body

66

Are multipolar and conduct impulses out of the brain or spinal cord ?

- a. Motor neurons**
- b. Sensory neurons
- c. Interneurons
- d. Microglia
- e. Neuroglia cells

67

The splenium of the corpus callosum is supplied by?

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

69

Loss the ability to do successively rapid alternating movements is called?

- a. Dysmetria.
- b. Asynergia.
- c. Asthenia.
- d. **Adiadochokinesia.**
- e. Nystagmus

70

Which nucleus presents in the medulla and pons?

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

71

Petechial non-blanching skin rash is an alarming sign seen in meningitis caused by?

- a. **Neisseria meningitidis**
- b. E.Coli
- c. Listeria monocytogenes
- d. Klebsiella pneumonia
- e. S. aureus

72

CNS stimulants: One of the following is false?

- a. **LSD produces its "trip" due to its antagonist action on brain NMDA receptors.**
- b. Cannabis can impair memory after chronic daily heavy use.
- c. Khat contains cathinone that has amphetamine-like stimulant action on brain.
- d. Doxapram is given IV as analeptic, and has a high therapeutic index.
- e. Phencyclidine produces detachment from environment, agitation, & hallucinations.

73

The pyramidal tract?

- a. **Most fibres cross at medulla oblongata**
- b. Most fibres cross at pons
- c. Does not cross
- d. Ipsilateral cross
- e. Most fibres cross at spinal cord

74

Regarding the dural venous sinuses: Which is correct ?

- a. Have muscular tissue and no valves
- b. The superior sagittal sinus continuous with the left transverse sinus
- c. Ultimately drains into the external jugular veins in the neck
- d. **The inferior sagittal sinus share the formation of the straight sinus**
- e. The transverse sinuses occupies the free margin of the tentorium cerebelli

75

Lumbar puncture, which of the following tubes is not needed for diagnosis?

- a. Tube 1 for protein and Glucose
- b. Tube 2 for bacterial Gram stain and Culture
- c. **Tube 3 to measure the late complement deficiency**
- d. Tube 4 for cell count and differential
- e. Tube 5 to store (PCR, viral studies if available, or for repeat cell count if needed)

76

Carbamazepine: Which one of the following is false?

- a. It induces hepatic microsomal enzymes which shortens its own half-life
- b. It is useful for chronic control of both grand mal and partial epilepsy.
- c. It is first choice drug for treatment of trigeminal neuralgia in adults.
- d. It can cause dizziness and diplopia as side effects at beginning of its use.
- e. **It inhibits repetitive neuronal firing by increasing brain GABA level.**

77

All the following are true about Levodopa except?

- a. Levodopa is a metabolic precursor of dopamine
- b. Levodopa causes motor control fluctuations
- c. Levodopa crosses the blood-brain barrier
- d. **It is carboxylated to dopamine in the periphery**
- e. It causes nausea, vomiting, cardiac arrhythmias, and hypotension

78

One of the following is false about nitrous oxide gas?

- a. It has very low blood solubility so quickly saturates pulmonary blood.

b, It has very low potency.

- c. It is irritant to respiratory mucous membranes and is flammable.

- d. It is contra-indicated in patients with pneumothorax or emphysematous bullae.

- e. It is pre-mixed with oxygen in "Entonox" cylinders to be used for analgesia in obstetrics or surgical emergencies.

79

Which one of the following is false about propofol i.v.?

- a. It has short duration of action due to its rapid large capacity metabolism by liver.
- b. It produces hypotension, and caution is needed with its use in patients with shock.
- c. It has anti-emetic action.
- d. It is irritant to veins or extravascular tissues.
- e. **It has no analgesic activity and does not relax skeletal muscles.**

80

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

- a. Primary Brain thrombosis: The carotid bifurcation
- b. Cerebral Amyloid Angiopathy: Leptomeningeal and cerebral cortical arteioles
- c. Berry aneurysm: Anterior communicating artery
- d. **Lacunar infarcts: Lenticular nucleus**
- e. Intraparenchymal hemorrhage: Thalamus.

