

NEUROSCIENCE QUESTIONS FOR PGY 4110 TEST 2

Choose the ONE BEST ANSWER by encircling the LETTER that corresponds to the answer

1. Which of the below mentioned opioid analgesic agent might produce anxiety, dysphoria and hallucinations
A. Fentanyl
☒ B. Pentazocine
C. Methadone
D. Morphine B
2. Mu opioid receptors are linked with
☒ A. Euphoria, analgesia, depression in respiration and physical dependence ✓
☒ B. Mydriasis, spinal analgesia, sedation and physical dependence
C. Hallucinations, dysphoria, vasomotor and respiratory stimulation ×
D. Euphoria, analgesia, physical dependence and respiratory stimulation × A
3. The drug of choice for myoclonic seizures is:
A. Phenobarbital
B. Carbamazepine
C. Phenytoin
☒ D. Clonazepam D
4. A 20-year old patient presented with early pregnancy was admitted for Medical Termination of Pregnancy in day care facility. What will be the anaesthetic induction agent of choice?
A. Thiopentone
☒ B. Ketamine B
C. Propofol
D. Diazepam
5. A young boy undergoes eye surgery under day care anaesthesia with succinyl choline and propofol and after 8 hours he starts walking and develops muscle pain. What is the likely cause?
A. Early mobilisation
B. Due to the effects of eye surgery
☒ C. Succinyl choline C
D. Propofol
6. All of the following factors influence the rate of induction of anaesthesia with an inhaled anaesthetic EXCEPT:
A. Aqueous solubility of the anaesthetic
☒ B. Patient history of malignant hyperthermia B
C. Anaesthetic concentration in inspired air
D. Pulmonary blood flow rate
7. Which of these drugs is recommended for the treatment of drug induced Parkinsonism?
☒ A. Benztropine A
B. Selegiline
C. Haloperidol
D. Levodopa

8. Which of the following produces dissociative anaesthesia?

- ☒ A. Ketamine
- B. Propofol
- C. Thiopentone
- D. Enflurane

A

9. Which one of the following local anaesthetics is most likely to cause allergic reactions?

- ☒ A. Procaine
- B. Bupivacaine
- C. Lignocaine
- D. Mepivacaine

A

10. Which one of the following anti-bacterial agents should not be used with d-tubocurarine?

- A. Norfloxacin
- ☒ B. Streptomycin
- C. Doxycycline
- D. Cefotaxime

B

11. The pathophysiologic basis for antiparkinsonism therapy is:

- A. Selective loss of dopaminergic neurones
- ☒ B. The loss of cholinergic neurones
- C. The loss of glutaminergic neurones
- D. Increased GABA activity

B

12. Thiopentone is a "short-lasting" barbiturate because

- A. It is metabolised rapidly by brain and liver
- ☒ B. It is rapidly distributed throughout the body
- C. It is administered by intravenous injection
- D. It induces tachyphylaxis

B

13. Which of the following is a dopamine-receptor agonist?

- A. Metoclopramide
- ☒ B. Bromocriptine
- C. Fluphenazine decanoate
- D. Amantidine

B

14. Phenytoin

- A. Has a wide therapeutic index
- ☒ B. Inhibits hepatic microsomal enzymes
- C. Exhibit first order elimination kinetics at high doses
- D. Exhibit zero order elimination kinetics at usual therapeutics doses

D

15. Which of the following drugs is the most selective inhibitor of noradrenaline reuptake?

- A. Fluoxetine
- ☒ B. Amitriptyline
- C. Trazodone
- D. Reboxetine

D

16. Which of the following drugs would you recommend for absence seizures?

- ☒ A. Valproate
- B. Phenobarbital
- C. Carbamazepine
- D. Gabapentin

A

17. Which of these opioid analgesics would you recommend for relieving the acute, severe pain of renal colic?

- A. Morphine
- B. Methadone
- ☒ C. Pethidine
- D. Naltrexone

C

18. Which of these drugs is effective in stopping generalised tonic-clonic status epilepticus?

- A. Valproate
- ☒ B. Lorazepam
- C. Ethosuximide
- D. Lamotrigine

B

19. Which of the following is a good choice to treat newly diagnosed generalized anxiety disorder in a patient who is a truck driver?

- A. Alprazolam
- B. Triazolam
- ☒ C. Buspirone
- D. Trazodone

C

20. Which of the following is a potential adverse effect of clozapine?

- A. Cholestatic jaundice
- B. QT prolongation
- C. Galactorrhoea
- ☒ D. Agranulocytosis

D

21. Concerning local anaesthetics

- A. Amide local anaesthetics are more likely to cause allergic reactions compared to ester anaesthetics
- ☒ B. Amide local anaesthetics are metabolized in the liver
- C. Ester type local anaesthetics include lignocaine
- D. Bupivacaine is a short acting local anaesthetic

B

22. Which of the following is least likely to be associated with carbamazepine?

- ☒ A. Nephrotoxicity
- B. Cognitive dysfunction
- C. Leucopenia ✓
- D. Diplopia

A

23. Halothane is being phased out because of

- ☒ A. Hepatitis
- B. Pulmonary fibrosis
- C. Cardiac toxicity
- D. Renal failure

A

24. Which of the following anaesthetics would be most suitable in a patient with poor cardiovascular function

- A. Halothane
- B. Propofol
- ☒ C. Ketamine
- D. Thiopentone

sympathetic activity

C

25. Which of the following is least likely to produce extrapyramidal effects?
A. Haloperidol
☒ B. Clozapine
C. Thioridazine
D. Droperidol
26. The antidepressant amitriptyline has all the following effects except
A. Anti-muscarinic
B. Sedative
☒ C. Hypertension
D. Arrhythmias
27. The most significant toxicity of sumatriptan relate to
A. Liver
B. Kidney
☒ C. Heart
D. Central nervous system
28. Sumatriptan relieves migraine by
A. Analgesia
B. Sedation
☒ C. Constriction of cranial vessels
D. All of the above
29. Which channel is opened by benzodiazepines in the CNS?
A. Sodium channel
B. Potassium channel
☒ C. Chloride channel
D. Calcium channel
30. What is flumazenil?
A. GABA receptor agonist
☒ B. GABA receptor antagonist
C. Endorphin antagonist
D. Serotonin antagonist
31. The hypertensive crisis due to monoamine oxidase inhibitors is best treated by
A. Propranolol
☒ B. Phentolamine
C. Verapamil
D. Frusemide
32. Which of the following can precipitate lithium toxicity when used concurrently?
A. Phenytoin
☒ B. Frusemide
C. Theophylline
D. Morphine
33. Phenytoin metabolism is inhibited by
A. Phenobarbitone
B. Carbamazepine
C. Ethosuximide
☒ D. Valproate

34. GABA transaminase is inhibited by

- A. Valproate
- B. Carbamazepine
- C. Phenytoin
- ☒ D. Phenobarbitone

35. Which of the following is least useful in the management of bipolar disorder?

- A. Valproate
- ☒ B. Lorazepam
- C. Lithium
- D. Carbamazepine

36. Which of these drugs is least useful in Parkinsonism?

- ☒ A. Metoclopramide
- B. Bromocriptine
- C. Amantadine
- D. Selegiline

37. The extrapyramidal adverse effect of anti-psychotics which does not improve with centrally acting anti-muscarinics is

- A. Akathisia
- B. Dystonia
- ☒ C. Tardive dyskinesia
- D. Parkinsonism

38. Priapism occurs as a side effect of

- ☒ A. Trazodone
- B. Mianserin
- C. Imipramine
- D. Doxepin

39. All the following drugs are hepatotoxic EXCEPT

- ☒ A. Valproate ✓
- B. Isoflurane
- C. Halothane
- ☒ D. Chlorpromazine

40. Which of the following drugs should be avoided in patients on monoamine oxidase inhibitors?

- A. Nitrous oxide
- B. Pethidine
- C. Amphetamine
- ☒ D. Phenylephrine

41. Which of these drugs is least useful in improving cognitive dysfunction in patients with Alzheimer's disease?

- A. Memantine
- ☒ B. Tacrine
- C. Donepezil
- D. Benztropine

42. Which of these drugs is least likely to cause physical dependence?
☒ A. Delta-9 tetrahydrocannabinol
B. Cocaine
C. Morphine
D. Chlormethiazole
43. Which of these drugs is least likely to cause malignant hyperthermia?
☒ A. Nitrous oxide
B. Halothane
C. Succinylcholine
D. Isoflurane
44. Which of these drugs is most beneficial in the management of ethanol withdrawal syndrome?
☒ A. Valproate
☒ B. Chlormethiazole
C. Buspirone
D. Zolpidem
45. Which of these drugs is most beneficial in managing the motor disorder associated with Huntington's chorea?
A. Selegiline
B. Haloperidol
C. Amantadine
☒ D. Bromocriptine
46. Which of these statements is not true about cannabis?
☒ A. Is emetogenic
B. Lowers blood pressure
C. Has low addictive potential
D. Lowers intraocular pressure
47. Which of these drugs is least likely to cause seizures?
A. Lithium
B. Amitriptyline
☒ C. Chlormethiazole
D. Tramadol
48. The drug of choice for malignant hyperthermia is
A. D-tubocurarine
B. Suxamethonium
C. Baclofen
☒ D. Dantrolene
49. Baclofen
☒ A. Site of action is mostly in the spinal cord
B. Site of action is mostly in the motor cortex
C. Inhibits calcium release from sarcoplasmic reticulum
D. Inhibits acetyl choline release at the neuromuscular junction
50. Which of these drugs is least likely to be useful in the management of cluster headache?
A. Lithium
B. Dexamethasone
C. Topiramate
☒ D.

A

A

B

D

A

C

D

A

D

D. Nifedipine

51 Premotor cortex project to brainstem is concerned with all **except**:

- ans →
- a) Posture control
 - ☒ b) Fine movement
 - ☒ c) Provides partly to corticospinal output
 - d) Partly corticobulbar output
 - e) All of the above

52 Babinski's sign is produced by damage to :

- ☒ a) Lateral corticospinal tract
- b) Medial corticospinal tract
- c) Anterior corticospinal tract
- d) None of the above
- e) All of the above

53 After falling down a flight of stairs, a young woman is found to have a partial loss of voluntary movement on her right side and loss of temperature with pain on the left side below mid thoracic level. The lesion probably is transaction at :

- a) Lumbar spinal cord
- b) Pons-right side
- c) Thoracic spinal cord-left
- ☒ d) Right half of thoracic spinal cord
- e) None of the above

54 Interruption of motor pathways in the internal capsule on one side of the body causes ;

- ☒ a) Spastic paralysis on opposite side of the body
- b) Spastic paralysis on same side of the body
- c) Loss of touch and pressure
- d) None of the above
- e) All of the above

55. The primary motor cortex:

- (a) Receives no sensory input
- ☒ (b) Is active in the adjustment of motor activity to current sensory input
- (c) Is not necessary for fine motor movement
- (d) Gives rise to the extrapyramidal tract
- (e) Is localized only in the frontal lobe

56. The pyramidal tract:

- (a) Is composed solely of axons from pyramidal cells
- (b) Is a crossed pathway
- (c) Projects solely to the thalamus
- (d) Originates from several areas of the cortex including area 4, frontal lobe, and the parietal lobe
- ☒ (e) B and D are correct

57. The stretch reflex:

- (a) The receptor organ is the extrafusal muscle fibre
- (b) It does not normally respond to very minor degrees of stretch
- (c) The muscle spindles involved in this reflex are most plentiful in the large antigravity muscles
- (d) The gamma-efferent fibres that supply the spindles are unmyelinated
- (e) None of the above

E

58. Regarding Cerebellar Cortex:

- (a) After lesions, disturbances are contralateral to the lesion
- (b) It coordinates somatic motor activity and regulates muscle tone
- (c) Sensory information received by the cerebellum is acted upon at a conscious level by this structure
- (d) Speech is rarely disrupted after cerebellar damage
- (e) All are correct

B

59. The hippocampal formation is responsible for

- a) Short term memory
- b) Retrieval of information from long term memory
- c) Working memory
- (d) Consolidation of recent memories into long term memories
- e) None of the above

D

60. Damage to the Broca's area is known as

- a) Expressive aphasia
- b) Broca's aphasia
- c) Receptive aphasia
- d) B and C are correct
- (e) A and B are correct

E

61. Autonomic ganglia refers to

- a) Axons of autonomic neurons
- b) Dendrite endings of autonomic postganglionic neurons
- (c) Cell bodies of autonomic neurons
- d) Neurotransmitters in autonomic nervous system
- e) None of the above

C

62. The cranial nerve nuclei that contain parasympathetic preganglionic neurons are

- a) Edinger-Westphal nucleus
- b) The superior salivary nuclei
- c) The inferior salivatory nuclei
- d) The dorsal motor nucleus and the nucleus ambiguus
- (e) All of the above are correct

E

63. Which of the following activity is likely to be seen in the striatum prior to initiation of movement of a limb

- a) Inhibition signals from cortex
- b) Excitatory input from the subthalamic nucleus
- c) No activity in the medium spiny neurons
- ☒ d) Tonic inhibition in the VA/VL Thalamic complex
- e) Inhibitory outflow from the motor cortex

D

64. Interruption of motor pathways in the internal capsule on one side of the body causes:

- ☒ a) Spastic paralysis on the opposite side of the body
- b) Spastic paralysis on the same side of the body
- c) Loss of touch and pressure
- d) Loss of proprioception on the same side of the body
- e) None of the above

A

65) Huntington's disease is characterized by all **except**:

- a) Selective degeneration of striatal GABAergic and cholinergic neurons projecting to the putamen
- b) Autosomal dominant disorder
- c) Uncontrolled movement of the limbs
- ☒ d) Hypokinetic movement and normal speech
- e) Damage to the medium spiny neurons in the striatum

D

66) Parkinsonism is associated with: *except*

- a) Tremors and rigidity
- b) Hypokinesia
- c) Ataxia
- d) Unstable gait
- ☒ e) Numbness in the extremities

E

67) Which of the following best describes the activity in the cerebellum?

- a) Spinocerebellum- Balance and eye movement
- ☒ b) Cerebrocerebellum- Motor execution
- c) Vestibulocerebellum- Motor planning
- d) Middle cerebellar peduncle- Afferent and efferent pathways
- e) Superior cerebellar peduncle- Multiple parallel pathways

B

68) Which match best describes the activity in the basal ganglia

- a) Chorea- Lenticular nucleus
- ☒ b) Hemiballismus- Subthalamic nucleus
- c) Parkinsonism- corticostriatal pathway
- d) Chorea- caudate nucleus

B

e) A and D are correct

69) The major source of input to the caudate nucleus is

- a) Globus pallidus
- b) Subthalamic nucleus
- c) Putamen
- ☒ d) Association areas of the cortex, like prefrontal cortex
- e) Motor and somatosensory cortex

D

70) Efferents from all of the following basal ganglia structures use inhibitory neurotransmitters **except**

- a) Caudate
- b) Putamen
- c) Globus Pallidus internal
- ☒ d) Subthalamic nucleus
- e) Substantia nigra, pars reticulata

D

End of continuous assessment test 2

