

Complete 100 Neurology Questions with Multiple-Choice Options and Answers

Question 1

What is the primary source of energy for the brain under normal physiological conditions?

- a. Glucose
- b. Fatty acids
- c. Ketone bodies
- d. Amino acids

Answer: a. Glucose

Explanation: The brain primarily relies on glucose as its energy source, transported across the blood-brain barrier via glucose transporters.

Question 2

Which cranial nerve is responsible for innervating the muscles of mastication?

- a. Trigeminal (CN V)
- b. Facial (CN VII)
- c. Glossopharyngeal (CN IX)
- d. Hypoglossal (CN XII)

Answer: a. Trigeminal (CN V)

Explanation: The trigeminal nerve's mandibular branch innervates the muscles of mastication (e.g., masseter, temporalis).

Question 3

Which part of the brain is primarily responsible for coordinating voluntary movements?

- a. Cerebellum
- b. Basal ganglia
- c. Thalamus
- d. Hypothalamus

Answer: a. Cerebellum

Explanation: The cerebellum fine-tunes and coordinates voluntary movements, ensuring smooth execution.

Question 4

What is the most common cause of subarachnoid hemorrhage?

- a. Hypertension
- b. Ruptured berry aneurysm
- c. Arteriovenous malformation
- d. Trauma

Answer: b. Ruptured berry aneurysm

Explanation: Ruptured berry aneurysms, often in the circle of Willis, are the leading cause of non-traumatic subarachnoid hemorrhage.

Question 5

Which neurotransmitter is primarily associated with excitatory synapses in the CNS?

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

Answer: c. Glutamate

Explanation: Glutamate is the primary excitatory neurotransmitter in the CNS, acting on receptors like NMDA and AMPA.

Question 6

A patient presents with resting tremor, bradykinesia, and rigidity. The most likely diagnosis is:

- a. Multiple sclerosis
- b. Parkinson's disease
- c. Huntington's disease
- d. Amyotrophic lateral sclerosis

Answer: b. Parkinson's disease

Explanation: Resting tremor, bradykinesia, and rigidity are hallmark symptoms of Parkinson's disease, caused by dopamine depletion in the nigrostriatal pathway.

Question 7

Which of the following is a characteristic feature of Huntington's disease?

- a. Bradykinesia
- b. Chorea
- c. Spasticity
- d. Peripheral neuropathy

Answer: b. Chorea

Explanation: Huntington's disease is characterized by chorea (involuntary, jerky movements) due to basal ganglia dysfunction.

Question 8

The blood-brain barrier is primarily formed by:

- a. Astrocytes
- b. Microglia
- c. Endothelial cells with tight junctions
- d. Oligodendrocytes

Answer: c. Endothelial cells with tight junctions

Explanation: The blood-brain barrier is formed by endothelial cells with tight junctions, supported by astrocytes.

Question 9

Which lobe of the brain is primarily responsible for processing visual information?

- a. Frontal
- b. Parietal

- c. Temporal
- d. Occipital

Answer: d. Occipital

Explanation: The occipital lobe contains the primary visual cortex, responsible for processing visual stimuli.

Question 10

A patient with a lesion in the left Broca's area is most likely to present with:

- a. Receptive aphasia
- b. Expressive aphasia
- c. Visual agnosia
- d. Hemiparesis

Answer: b. Expressive aphasia

Explanation: Broca's area in the left frontal lobe is critical for speech production; lesions cause expressive (non-fluent) aphasia.

Question 11

Which of the following is the first-line treatment for status epilepticus?

- a. Phenytoin
- b. Lorazepam
- c. Levetiracetam
- d. Valproate

Answer: b. Lorazepam

Explanation: Lorazepam, a benzodiazepine, is the first-line treatment for status epilepticus due to its rapid onset and efficacy.

Question 12

The substantia nigra is primarily associated with which neurotransmitter?

- a. Serotonin
- b. Dopamine
- c. Acetylcholine
- d. GABA

Answer: b. Dopamine

Explanation: The substantia nigra produces dopamine, critical for motor control, and its degeneration is key in Parkinson's disease.

Question 13

Which type of stroke is most commonly associated with hypertension?

- a. Ischemic stroke
- b. Hemorrhagic stroke
- c. Subarachnoid hemorrhage
- d. Transient ischemic attack

Answer: b. Hemorrhagic stroke

Explanation: Hypertension is a major risk factor for intracerebral hemorrhagic stroke due to vessel wall damage.

Question 14

Which structure connects the third ventricle to the fourth ventricle?

- a. Foramen of Monro
- b. Cerebral aqueduct
- c. Foramen of Luschka
- d. Foramen of Magendie

Answer: b. Cerebral aqueduct

Explanation: The cerebral aqueduct (of Sylvius) connects the third ventricle to the fourth ventricle, allowing CSF flow.

Question 15

A patient with nystagmus, intention tremor, and dysarthria likely has a lesion in:

- a. Basal ganglia
- b. Cerebellum
- c. Thalamus
- d. Frontal lobe

Answer: b. Cerebellum

Explanation: Nystagmus, intention tremor, and dysarthria are classic signs of cerebellar dysfunction.

Question 16

Which of the following is a common side effect of levodopa in Parkinson's disease?

- a. Seizures
- b. Dyskinesias
- c. Peripheral neuropathy
- d. Agranulocytosis

Answer: b. Dyskinesias

Explanation: Levodopa commonly causes dyskinesias (involuntary movements) as a side effect in Parkinson's treatment.

Question 17

The primary motor cortex is located in which Brodmann area?

- a. Area 4
- b. Area 6
- c. Area 8
- d. Area 44

Answer: a. Area 4

Explanation: The primary motor cortex, responsible for voluntary movement, is located in Brodmann area 4 (precentral gyrus).

Question 18

Which condition is associated with Lewy bodies in the brain?

- a. Alzheimer's disease
- b. Parkinson's disease
- c. Multiple sclerosis
- d. Frontotemporal dementia

Answer: b. Parkinson's disease

Explanation: Lewy bodies, aggregates of alpha-synuclein, are a hallmark of Parkinson's disease and dementia with Lewy bodies.

Question 19

Which vitamin deficiency is associated with Wernicke's encephalopathy?

- a. Vitamin B1 (thiamine)
- b. Vitamin B6 (pyridoxine)
- c. Vitamin B12 (cobalamin)
- d. Vitamin D

Answer: a. Vitamin B1 (thiamine)

Explanation: Wernicke's encephalopathy, seen in alcoholics, is caused by thiamine deficiency, leading to confusion, ataxia, and ophthalmoplegia.

Question 20

Which of the following is a hallmark of myasthenia gravis?

- a. Muscle rigidity
- b. Fatigable muscle weakness
- c. Spasticity
- d. Involuntary movements

Answer: b. Fatigable muscle weakness

Explanation: Myasthenia gravis is characterized by fatigable muscle weakness due to autoantibodies against acetylcholine receptors.

Question 21

The Glasgow Coma Scale assesses which three functions?

- a. Eye opening, verbal response, motor response
- b. Pupil response, speech, balance
- c. Reflexes, sensation, coordination
- d. Memory, orientation, attention

Answer: a. Eye opening, verbal response, motor response

Explanation: The Glasgow Coma Scale evaluates eye opening, verbal response, and motor response to assess consciousness.

Question 22

Which imaging modality is most sensitive for detecting acute ischemic stroke?

- a. CT scan
- b. MRI with diffusion-weighted imaging
- c. X-ray
- d. Ultrasound

Answer: b. MRI with diffusion-weighted imaging

Explanation: Diffusion-weighted MRI is highly sensitive for detecting acute ischemic stroke within minutes of onset.

Question 23

Which of the following is a common trigger for migraine headaches?

- a. Hypoglycemia
- b. Stress
- c. Hyponatremia

d. Hyperkalemia

Answer: b. Stress

Explanation: Stress is a well-known trigger for migraines, alongside factors like hormonal changes and certain foods.

Question 24

The corticospinal tract primarily controls:

- a. Sensory perception
- b. Voluntary motor function
- c. Autonomic functions
- d. Visual processing

Answer: b. Voluntary motor function

Explanation: The corticospinal tract conveys voluntary motor commands from the cortex to spinal motor neurons.

Question 25

Which of the following is a characteristic feature of Creutzfeldt-Jakob disease?

- a. Rapidly progressive dementia
- b. Peripheral neuropathy
- c. Chronic headache
- d. Seizures only

Answer: a. Rapidly progressive dementia

Explanation: Creutzfeldt-Jakob disease is a prion disease causing rapidly progressive dementia, myoclonus, and neurological decline.

Question 26

Which nerve is compressed in carpal tunnel syndrome?

- a. Ulnar nerve
- b. Median nerve
- c. Radial nerve
- d. Musculocutaneous nerve

Answer: b. Median nerve

Explanation: Carpal tunnel syndrome involves compression of the median nerve, causing hand numbness and weakness.

Question 27

Which of the following is used to treat acute migraine attacks?

- a. Beta-blockers
- b. Triptans
- c. Anticonvulsants
- d. Antidepressants

Answer: b. Triptans

Explanation: Triptans (e.g., sumatriptan) are first-line for acute migraine attacks, targeting serotonin receptors.

Question 28

The neurotransmitter deficit in Alzheimer's disease is primarily:

- a. Dopamine

- b. Acetylcholine
- c. Serotonin
- d. Glutamate

Answer: b. Acetylcholine

Explanation: Alzheimer's disease involves a significant reduction in acetylcholine due to cholinergic neuron loss.

Question 29

Which of the following is a risk factor for ischemic stroke?

- a. Hypothyroidism
- b. Atrial fibrillation
- c. Hypocalcemia
- d. Hyperglycemia

Answer: b. Atrial fibrillation

Explanation: Atrial fibrillation increases stroke risk by promoting thromboembolism.

Question 30

Which structure is primarily affected in Wernicke-Korsakoff syndrome?

- a. Mamillary bodies
- b. Basal ganglia
- c. Cerebellum
- d. Frontal cortex

Answer: a. Mamillary bodies

Explanation: Wernicke-Korsakoff syndrome, due to thiamine deficiency, primarily affects the mamillary bodies and thalamus.

Question 31

Which of the following regions of the nervous system is typically spared in ALS?

- a. Anterior horn cells
- b. Corticospinal tract
- c. Sensory neurons in the dorsal root ganglia
- d. Hypoglossal nucleus

Answer: c. Sensory neurons in the dorsal root ganglia

Explanation: Amyotrophic lateral sclerosis (ALS) primarily affects motor neurons, including anterior horn cells, corticospinal tract, and motor nuclei like the hypoglossal nucleus. Sensory neurons in the dorsal root ganglia are typically spared, as ALS does not significantly involve sensory pathways.

Question 32

Which of the following is the most common demyelinating disease of the CNS?

- a. Progressive multifocal leukoencephalopathy (PML)
- b. Multiple sclerosis (MS)
- c. Neuromyelitis optica (NMO)
- d. Acute disseminated encephalomyelitis (ADEM)

Answer: b. Multiple sclerosis (MS)

Explanation: Multiple sclerosis (MS) is the most common demyelinating disease of the central nervous system, characterized by immune-mediated demyelination and axonal damage.

Question 33

Progressive multifocal leukoencephalopathy (PML) is caused by which viral infection?

- a. Herpes simplex virus (HSV)
- b. JC virus
- c. Epstein-Barr virus (EBV)
- d. Cytomegalovirus (CMV)

Answer: b. JC virus

Explanation: Progressive multifocal leukoencephalopathy (PML) is caused by the JC virus, a polyomavirus that infects oligodendrocytes in immunocompromised individuals, leading to demyelination.

Question 34

Which of the following is the characteristic histopathological finding in multiple sclerosis (MS)?

- a. Inflammatory demyelination with perivascular lymphocytic infiltration
- b. Widespread neuronal loss in the cerebral cortex
- c. Tau protein accumulation
- d. Amyloid plaques and neurofibrillary tangles

Answer: a. Inflammatory demyelination with perivascular lymphocytic infiltration

Explanation: The hallmark of multiple sclerosis (MS) is inflammatory demyelination with perivascular lymphocytic infiltration, seen in plaques within the central nervous system.

Question 35

5 yr old child with OCD, the drug of choice is:

- a. Escitalopram
- b. Duloxetine
- c. Fluvoxamine
- d. Moxapin

Answer: c. Fluvoxamine

Explanation: Fluvoxamine is FDA-approved for OCD in children as young as 8, and its use is supported in younger children under specialist guidance.

Question 36

Narrow-spectrum AEDs mostly work for specific types of seizures. All are broad spectrum except:

- a. Felbamate
- b. Levetiracetam
- c. Primidone
- d. Clonazepam

Answer: d. Clonazepam

Explanation: Clonazepam is primarily narrow-spectrum, used for absence and myoclonic seizures, while felbamate, levetiracetam, and primidone are broad-spectrum AEDs.

Question 37

A 28-year-old alcoholic man after binge drinking, medication to decrease withdrawal seizure risk:

- a. Alcohol

- b. Clonazepam
- c. Lorazepam
- d. Oxazepam
- e. Tramadol

Answer: c. Lorazepam

Explanation: Lorazepam is preferred for alcohol withdrawal seizures due to its short half-life and safety in liver dysfunction.

Question 38

6 yr old with Lennox-Gastaut epilepsy on felbamate 600mg/8hr, uncontrolled seizures, best action is:

- a. Stop felbamate now and start clonazepam
- b. Increase dose of felbamate to 600 every 2 weeks
- c. No action should be done
- d. Start clobazam now and titrate slowly, at the same time de-escalate felbamate
- e. Let felbamate as the same, and add combination with tiagabine

Answer: d. Start clobazam now and titrate slowly, at the same time de-escalate felbamate

Explanation: Clobazam is effective for Lennox-Gastaut; reducing felbamate minimizes side effects.

Question 39

22yr old male with depression, on citalopram 10mg/24hr for 6 weeks, poor response, best action:

- a. Increase dose of citalopram to 20mg/24hr
- b. Stop citalopram and add venlafaxine
- c. Decrease dose of citalopram to 5 mg/24hr and add aripiprazole
- d. No need for intervention

Answer: a. Increase dose of citalopram to 20mg/24hr

Explanation: Optimizing the citalopram dose is the first step for inadequate response.

Question 40

A 26-year-old man with tremors, tachycardia, diaphoresis during public speaking, how does propranolol help?

- a. CNS sedation
- b. CNS stimulation
- c. Patients with anxiety usually have comorbid heart disease
- d. Propranolol is not used to treat anxiety

Answer: None of the options fully explain; correct mechanism is reducing peripheral sympathetic symptoms

Explanation: Propranolol, a beta-blocker, reduces physical symptoms of anxiety (tremors, tachycardia) by blocking beta-adrenergic receptors.

Question 41

Which of GABA-ergics can block GABA reuptake in the synapses?

- a. Vigabatrin
- b. Benzodiazepines
- c. Gabapentin
- d. Iagabene (likely tiagabine)

e. Phenobarbital

Answer: d. lagabene (likely tiagabine)

Explanation: Tiagabine inhibits GABA reuptake; others have different mechanisms.

Question 42

25yr old female with schizoaffective disorder, drug of choice approved for treatment is:

- a. Risperidone and its metabolite paliperidone
- b. No evidence that quetiapine is effective
- c. Paliperidone the only approved treatment
- d. Risperidone is the only approved treatment
- e. Aripiprazole is the drug of choice

Answer: c. Paliperidone the only approved treatment

Explanation: Paliperidone is FDA-approved for schizoaffective disorder.

Question 43

Focal seizures may progress to become bilateral tonic-clonic seizures if inappropriate AEDs:

- a. TRUE
- b. FALSE

Answer: a. TRUE

Explanation: Ineffective AEDs can allow focal seizures to generalize.

Question 44

22-year-old man with schizophrenia, which symptom will clozapine help most?

- a. Attention deficit
- b. Delusions
- c. Flat affect
- d. Lack of motivation
- e. Poverty of speech

Answer: b. Delusions

Explanation: Clozapine is most effective for positive symptoms like delusions.

Question 45

21-year-old male with difficulty falling asleep, which hypnotic mimics an endogenous hormone?

- a. Diazepam
- b. Lorazepam
- c. Phenobarbital
- d. Ramelteon
- e. Zolpidem

Answer: d. Ramelteon

Explanation: Ramelteon mimics melatonin, promoting sleep onset.

Question 46

55yr old female with insomnia, doxepin 150mg failed, promethazine 25mg caused seizure and QT prolongation, all false except:

- a. Doxepin was a good choice for her sleep disorder
- b. Doxepin dose was too high, abrupt stop caused convulsion

- c. Promethazine is the cause of QT prolongation and seizure
- d. Washing out period should be between doxepin and promethazine
- e. Zaleplon is the drug of choice not doxepin

Answer: c. Promethazine is the cause of QT prolongation and seizure

Explanation: Promethazine can lower seizure threshold and prolong QT.

Question 47

83-year-old with Alzheimer's, drug class to treat:

- a. Cholinesterase stimulants
- b. Cholinesterase inhibitors
- c. Dopamine agonists
- d. Muscarinic receptor inhibitors
- e. NMDA glutamate receptor agonists

Answer: b. Cholinesterase inhibitors

Explanation: Cholinesterase inhibitors (e.g., donepezil) improve cognition in early Alzheimer's.

Question 48

72-year-old with Alzheimer's, neurotransmitter change characteristic:

- a. Decreased acetylcholine
- b. Decreased dopamine
- c. Decreased norepinephrine
- d. Increased acetylcholine
- e. Increased dopamine

Answer: a. Decreased acetylcholine

Explanation: Alzheimer's involves reduced acetylcholine due to cholinergic neuron loss.

Question 49

55-year-old with schizophrenia on fluphenazine, lip/tongue puckering, next step:

- a. Add another neuroleptic to help fluphenazine
- b. Ask about illicit drug use
- c. Consider discontinuing her medication
- d. Increase the dose of fluphenazine
- e. No change is necessary

Answer: c. Consider discontinuing her medication

Explanation: Symptoms suggest tardive dyskinesia; discontinuing or switching is appropriate.

Question 50

Regarding benzodiazepines, all true except:

- a. Hypnotics decrease latency to sleep onset and increase stage II non-REM sleep
- b. Triazolam is effective for sleep onset issues
- c. Temazepam is useful for frequent awakenings
- d. Flurazepam is frequently used due to its extended half-life (120hr), with no hangover
- e. Nonbenzodiazepine agents are preferred due to reduced tolerance/abuse

Answer: d. Flurazepam is frequently used due to its extended half-life (120hr), with no hangover

Explanation: Flurazepam's long half-life causes hangover effects, making it less used.

Question 51

Characteristic EEG sign of absence epilepsy:

- a. Slow waves activity without spikes
- b. Focal 3 Hz spike-and-waves activity
- c. Generalized 3 Hz spike-and-slow waves activity
- d. Focal spikes
- e. Generalized spikes

Answer: c. Generalized 3 Hz spike-and-slow waves activity

Explanation: Absence epilepsy shows generalized 3 Hz spike-and-slow wave discharges.

Question 52

True statement about amygdala in Alzheimer's with bilateral degeneration:

- a. Central part regulates emotional response to smell and food
- b. Contains subiculum part
- c. Outputs go via posterior nucleus of thalamus in emotional learning
- d. Basolateral amygdala regulates visceral responses
- e. Lesions can lead to lack of emotional responses & docility

Answer: e. Lesions can lead to lack of emotional responses & docility

Explanation: Amygdala lesions cause reduced emotional responses and docility.

Question 53

Sphingomyelins in brain tissue composed of:

- a. Glycerol, fatty acids, phosphoric acid, and choline
- b. Glycerol, sphingosine, choline, and fatty acids
- c. Sphingosine, phosphoric acid, glycerol, and inositol
- d. Sphingosine, fatty acids, phosphoric acid, and choline

Answer: d. Sphingosine, fatty acids, phosphoric acid, and choline

Explanation: Sphingomyelins are sphingolipids with these components.

Question 54

Dopamine D2 receptor family inhibit adenylyl cyclase to stimulate:

- a. Depolarization
- b. Hyperpolarization
- c. K current
- d. All of them

Answer: b. Hyperpolarization

Explanation: D2 receptors activate potassium channels, causing hyperpolarization.

Question 55

Enzyme catalyzing glutamate to GABA conversion:

- a. Glutamic acid decarboxylase
- b. Glutaminase
- c. Glutamine synthetase
- d. Adenyl cyclase

Answer: a. Glutamic acid decarboxylase

Explanation: GAD converts glutamate to GABA.

Question 56

37-year-old with loss of awareness, lip-smacking, dropping objects, cause:

- a. Tonic seizures "Grand mal epilepsy"
- b. Absence seizures
- c. Simple partial seizures
- d. Temporal lobe epilepsy
- e. Myoclonic seizures

Answer: d. Temporal lobe epilepsy

Explanation: Symptoms suggest focal seizures with impaired awareness, typical of temporal lobe epilepsy.

Question 57

Metabolic disease due to Hexosaminidase A deficiency:

- a. Fabry's disease
- b. Niemann-Pick disease
- c. Gaucher's disease
- d. Tay-Sachs disease

Answer: d. Tay-Sachs disease

Explanation: Hexosaminidase A deficiency causes GM2 ganglioside accumulation in Tay-Sachs.

Question 58

Dopaminergic pathway responsible for motor function:

- a. Mesolimbic pathway
- b. Mesocortical pathway
- c. Nigrostriatal pathway
- d. Tuberoinfundibular pathway

Answer: c. Nigrostriatal pathway

Explanation: The nigrostriatal pathway controls motor function.

Question 59

Neurotransmitters in Parkinson's disease patients:

- a. Increased GABA and decreased glutamate
- b. Decrease GABA and increase glutamate
- c. Decrease GABA and glutamate
- d. Increase GABA and glutamate

Answer: b. Decrease GABA and increase glutamate

Explanation: Parkinson's involves increased glutamate and altered GABA in basal ganglia circuits.

Question 60

Structure related to subcortical limbic system and basal nuclei:

- a. Cingulate gyrus
- b. Fornix
- c. Hippocampus
- d. Septal nuclei
- e. Amygdala

Answer: d. Septal nuclei

Explanation: Septal nuclei link limbic and basal nuclei functions.

Question 61

Structure part of the subcortical limbic system:

- a. Uncus
- b. Subcallosal area
- c. Cingulate gyrus
- d. Amygdala
- e. Parahippocampal gyrus

Answer: d. Amygdala

Explanation: The amygdala is a key subcortical limbic structure.

Question 62

Cutaneous receptor unencapsulated and fast adapting:

- a. Meissner's corpuscles
- b. Pacinian corpuscles
- c. Ruffini's end organs
- d. Merkel's complex
- e. Hair follicle endings

Answer: e. Hair follicle endings

Explanation: Hair follicle endings are unencapsulated and fast-adapting.

Question 63

Functional modality of auditory sensation:

- a. Special somatic afferent
- b. General visceral afferent
- c. Special visceral afferent fibers
- d. General somatic afferent
- e. General visceral afferent

Answer: a. Special somatic afferent

Explanation: Auditory sensation is a special somatic afferent modality.

Question 64

Receptor that is a teleceptor:

- a. Taste receptors
- b. Photoreceptors
- c. Pain receptors
- d. Touch receptors
- e. Muscle stretch

Answer: b. Photoreceptors

Explanation: Photoreceptors detect distant light stimuli.

Question 65

Structure responsible for generating a plan for movement:

- a. Supplementary motor area
- b. Primary motor cortex
- c. Angular gyrus
- d. Postcentral gyrus
- e. All of the above

Answer: a. Supplementary motor area

Explanation: The supplementary motor area plans complex movements.

Question 66

Glutamate NMDA receptor blocked to inhibit over-depolarization by:

- a. Na⁺
- b. K⁺
- c. Mg⁺⁺
- d. Ca⁺⁺

Answer: c. Mg⁺⁺

Explanation: Magnesium ions block NMDA receptors at resting potential.

Question 67

Damage to which structure results in inability to form long-term memories?

- a. Hippocampus
- b. Amygdala
- c. Cingulate gyrus
- d. Hypothalamus
- e. Ventral tegmental area

Answer: a. Hippocampus

Explanation: The hippocampus is critical for long-term memory formation.

Question 68

Frontal eye conjugate center is located in:

- a. Area 4
- b. Area 44
- c. Area 45
- d. Area 8
- e. Area 11

Answer: d. Area 8

Explanation: The frontal eye field is in Brodmann area 8.

Question 69

Concerning hydatid cyst disease, all correct except:

- a. The disease occurs primarily in tropical Africa
- b. The disease is caused by Echinococcus granulosus
- c. The parasite's adult form lives in dogs' intestines
- d. The cysts occur primarily in the liver
- e. None of the above

Answer: a. The disease occurs primarily in tropical Africa

Explanation: Hydatid disease is more common in Mediterranean, Middle East, and South America.

Question 70

Virus causing encephalitis with high mortality and severe sequelae:

- a. Echoviruses
- b. HSV-2 virus
- c. Coxsackie viruses

- d. HSV-1 virus
- e. WEE virus
- f. EEE virus

Answer: f. EEE virus

Explanation: Eastern Equine Encephalitis virus has a high mortality rate (30–70%).

Question 71

Virus with echovirus and coxsackie causing aseptic meningitis:

- a. Mumps virus
- b. Measles virus
- c. Marburg virus
- d. CMV virus
- e. Dengue virus
- f. West Nile virus

Answer: a. Mumps virus

Explanation: Mumps is a common cause of aseptic meningitis.

Question 72

Concerning Arboviruses, all correct except:

- a. Pathogenesis of dengue hemorrhagic shock syndrome is associated with heterotypic anamnestic response
- b. Wild birds are the reservoir for encephalitis viruses but not for yellow fever virus
- c. There is a live, attenuated vaccine for yellow fever
- d. Mosquitoes are the main mode of transmission for encephalitis and yellow fever viruses
- e. None of the answers can be excepted

Answer: b. Wild birds are the reservoir for encephalitis viruses but not for yellow fever virus

Explanation: Yellow fever virus uses primates as reservoirs, not birds.

Question 73

Intermediate host of Plasmodium falciparum:

- a. Human
- b. Glossina
- c. Tsetse fly
- d. Sandfly
- e. Monkey

Answer: None listed; correct answer is female Anopheles mosquito

Explanation: The mosquito is the intermediate host; humans are definitive hosts.

Question 74

Parasite resembling malaria, carried by Lyme disease tick, observed in:

- a. Vaginal secretions
- b. Duodenal contents
- c. Blood
- d. Biopsied muscle
- e. Sputum
- f. CSF

Answer: c. Blood

Explanation: Babesia, resembling malaria, is seen in blood smears.

Question 75

Trimester with most severe congenital Toxoplasma outcomes:

- a. First trimester
- b. Second trimester
- c. Third trimester
- d. First & second trimester
- e. All three periods are approximately the same

Answer: a. First trimester

Explanation: First trimester infections cause severe fetal damage.

Question 76

Sexual stage of malaria in mosquito order:

- a. Sporozoite, gametocyte, ookinete, oocyst
- b. Gametocyte, sporozoite, oocyst, ookinetes
- c. Gametocyte, ookinete, oocyst, sporozoite
- d. Trophozoite, merozoites, gametocyte, sporozoite
- e. Gametocyte, ookinetes, oocyst, merozoite

Answer: c. Gametocyte, ookinete, oocyst, sporozoite

Explanation: This is the correct sequence in the mosquito.

Question 77

Aseptic meningitis in poliomyelitis occurs in:

- a. Abortive poliomyelitis
- b. Non-paralytic poliomyelitis
- c. Paralytic poliomyelitis
- d. Inapparent poliomyelitis
- e. Aseptic meningitis never happened in poliomyelitis infections

Answer: b. Non-paralytic poliomyelitis

Explanation: Non-paralytic polio involves aseptic meningitis.

Question 78

Trophozoite of Babesia microti similar to Plasmodium ring form:

- a. True
- b. False

Answer: a. True

Explanation: Babesia trophozoites resemble Plasmodium ring forms.

Question 79

Concerning yellow fever, all correct except:

- a. Yellow fever virus is transmitted by Aedes aegypti mosquito in urban form
- b. Infection causes significant damage to hepatocytes
- c. Monkeys in the jungle are the major reservoir
- d. There is no effective antiviral therapy against yellow fever virus
- e. None of the answers can be excepted

Answer: e. None of the answers can be excepted (assuming all are correct)

Explanation: All statements (a–d) are true; e is the default exception.

Question 80

In Gaucher's disease, accumulation of gangliosides leads to mental retardation and hepatomegaly:

- a. TRUE
- b. FALSE

Answer: b. FALSE

Explanation: Gaucher's involves glucocerebroside accumulation, not gangliosides.

Question 81

Deficiency in hexosaminidase A leads to accumulation of:

- a. GM1
- b. GM2
- c. GM3
- d. GD1a

Answer: b. GM2

Explanation: GM2 ganglioside accumulates in Tay-Sachs disease.

Question 82

Ganglioside synthesized by adding N-acetylgalactosamine to GM3:

- a. GM1
- b. GM2
- c. GD3
- d. GT1b

Answer: b. GM2

Explanation: GM3 plus GalNAc forms GM2.

Question 83

Enzyme catalyzing first step in sphingolipid biosynthesis:

- a. Ceramidase
- b. Serine palmitoyltransferase (SPT)
- c. Galactosylceramide synthase
- d. Sphingomyelinase

Answer: b. Serine palmitoyltransferase (SPT)

Explanation: SPT initiates sphingolipid synthesis.

Question 84

Sulfatides synthesized by sulfation of:

- a. Glucosylceramide
- b. Galactocerebroside
- c. Lactosylceramide
- d. Ceramide

Answer: b. Galactocerebroside

Explanation: Sulfatides are sulfated galactocerebroside.

Question 85

Galactocerebrosides primarily function in signaling with minimal membrane impact:

- a. TRUE
- b. FALSE

Answer: b. FALSE

Explanation: Galactocerebrosides are critical for myelin membrane structure.

Question 86

Patient with hepatosplenomegaly, bone pain, deficient glucocerebrosidase:

- a. Tay-Sachs disease
- b. Gaucher's disease
- c. Niemann-Pick disease
- d. Krabbe disease

Answer: b. Gaucher's disease

Explanation: Glucocerebrosidase deficiency causes Gaucher's disease.

Question 87

Substance accumulated in Gaucher's due to β -glucocerebrosidase deficiency:

- a. Sphingomyelin
- b. Gangliosides
- c. Cerebrosides
- d. Sulfatides

Answer: c. Cerebrosides

Explanation: Glucocerebrosides (cerebrosides) accumulate in Gaucher's.

Question 88

Immune response contributing to Guillain-Barré Syndrome pathogenesis:

- a. Overproduction of inhibitory neurotransmitters like serotonin
- b. Activation of Th1 cells and secretion of pro-inflammatory cytokines
- c. Binding of IgE antibodies to nicotinic acetylcholine receptors
- d. Excessive release of catecholamines leading to vasoconstriction

Answer: b. Activation of Th1 cells and secretion of pro-inflammatory cytokines

Explanation: Th1 cells drive inflammation in GBS.

Question 89

30-year-old woman with myasthenia gravis, anti-MuSK positive, immunological target:

- a. GABAergic neurotransmitters in the spinal cord
- b. N-methyl-D-aspartate (NMDA) receptors in the brain
- c. Voltage-gated calcium channels in motor neurons
- d. Acetylcholine receptors at the neuromuscular junction

Answer: d. Acetylcholine receptors at the neuromuscular junction

Explanation: MG targets acetylcholine receptors, including in anti-MuSK cases.

Question 90

28-year-old woman with multiple sclerosis, central immune cells in inflammation:

- a. Helper T cells (Th cells)
- b. Cytotoxic T cells

- c. Regulatory T cells (Tregs)
- d. Natural killer (NK) cells

Answer: a. Helper T cells (Th cells)

Explanation: Th1 and Th17 cells drive MS pathogenesis.

Question 91

Not a product of sphingomyelin catabolism:

- a. Ceramide
- b. Phosphocholine
- c. Glucose
- d. Sphingosine

Answer: c. Glucose

Explanation: Sphingomyelin catabolism produces ceramide, phosphocholine, and sphingosine, not glucose.

Question 92

Light reflex center is located in the:

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

Answer: d. Pretectal region

Explanation: The pretectal nucleus mediates the pupillary light reflex.

Question 93

Main efferent connections of the hypothalamus carried by:

- a. Fornix
- b. Thalamus
- c. Subthalamus
- d. Anterior commissure
- e. Posterior commissure

Answer: a. Fornix

Explanation: The fornix is a major hypothalamic efferent pathway.

Question 94

Mainly excitatory to extensor alpha motoneurons:

- a. Corticobulbar tract
- b. Corticotectal tract
- c. Spinothalamic tract
- d. Fasciculus gracilis
- e. Reticulospinal tract

Answer: e. Reticulospinal tract

Explanation: The reticulospinal tract facilitates extensor motoneurons.

Question 95

Truncal ataxia seen in lesions of:

- a. VPL of the thalamus

- b. Medial longitudinal fasciculus (MLF)
- c. Vermis
- d. Pons
- e. Spinal cord

Answer: c. Vermis

Explanation: The cerebellar vermis coordinates axial movements.

Question 96

Contains anterior cerebral and anterior communicating arteries:

- a. Carotid cistern
- b. Prepontine cistern
- c. Quadrigeminal cistern
- d. Lamina terminalis cistern
- e. Supramarginal gyrus

Answer: d. Lamina terminalis cistern

Explanation: This cistern houses these arteries.

Question 97

Nerve with fibers to three sensory nuclei in the pons:

- a. Trigeminal
- b. Abducens
- c. Facial
- d. Vestibulocochlear
- e. Glossopharyngeal

Answer: a. Trigeminal

Explanation: The trigeminal nerve projects to three sensory nuclei.

Question 98

Cranial nerves sending gustatory input to the brainstem:

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

Answer: b. VII, IX, X

Explanation: Facial, glossopharyngeal, and vagus nerves carry taste.

Question 99

Cavernous sinus:

- 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

Answer: e. Drains into the internal jugular vein

Explanation: The cavernous sinus drains via the inferior petrosal sinus to the jugular vein.

Question 100

Fibers from acoustic striae join after decussating:

- a. Medial lemniscus
- b. Trigeminal lemniscus
- c. Lateral lemniscus
- d. Posterior lemniscus
- e. Anterior lemniscus

Answer: c. Lateral lemniscus

Explanation: Auditory fibers join the lateral lemniscus to reach the inferior colliculus.