A-type: Select the one most appropriate answer

(   )1, Which one of the following statements about Machado-Joseph disease (MJD) is wrong?
   A, It belongs to a group of trinucleotide repeat diseases
   B, There is a tendency of increasing CAG repeat length in offsprings of the affected
   C, Degeneration of inferior olivary nucleus is a common neuropathological finding
   D, The pattern of inheritance is autosomal dominant
   E, The neuropathy of MJD is an axonal or neuronal type.

(   )2, Which condition is associated with Guillain-Barré Syndrome:
   A, Campylobacter jejuni
   B, Cytomegalovirus (CMV)
   C, Epstein-Barr virus (EBV)
   D, Human Immune Deficiency virus (HIV)
   E, All of above

(   )3. Which one is NOT correct about thyrotoxicosis with periodic paralysis?
   A, Occurs mainly in young adult males.
   C, The paralytic disorder is related to the severity of the hyperthyroidism.
   D, Clinically, the attacks of paralysis are much the same as those of familial hypokalemic type except for a greater liability to cardiac irregularity.
   E, Respiratory muscles are often spared.
4. Which one is the most common neurologic manifestation of polyarteritis nodosa?
   A, Peripheral neuropathy
   B, Seizure
   C, Stroke
   D, Meningitis
   E, Vision loss

5. The frequent causes of mononeuropathy multiplex may be seen in following diseases, **EXCEPT**:
   A, Diabetes mellitus
   B, Periarteritis nodosa
   C, Sarcoidsis
   D, Temporal arteritis
   E, Rheumatoid arteritis

6. The following statements of Posterior Interosseus Neuropathy (PIN) are true **EXCEPT**:
   A, Weakness of extensor of the index finger and thumb
   B, May be related to cases in which there's swelling or hemorrhage of supinator muscle
   C, Occurs commonly in lead poisoning
   D, Accompanied by sensory deficit over the dorsum of the thumb and index finger
   E, May occur idiopathically

7. The electrophysiological hallmark of axonal degeneration is:
   A, Severe conduction block
   B, Abnormal temporal dispersion
   C, Diminution of the amplitude of the compound muscle action potential and sensory nerve action potential
   D, Marked slowing in the nerve conduction velocities
   E, Prolonged (>150% of normal limits) F wave latency
8. Which one is **NOT** characteristic feature of H-reflex response?
   A. Suppressed by supramaximal stimulation
   B. May exceed M-response in amplitude
   C. Constant latency
   D. Variable morphology
   E. Optimal with submaximal stimulation

9. Which one is most important among many physiological factors that will affect nerve conduction velocity?
   A. Sex
   B. Height
   C. Weight
   D. Race
   E. Temperature

10. Which sign would not appear in patients of “botulism”?
    A. Weakness of jaw muscles
    B. Extraocular movements paresis
    C. Mydriasis, sluggish or no pupil light reflex
    D. Clouding of consciousness
    E. Decreased saliva production, constipation and urine retention

11. Which of the following myopathies is inherited in an autosomal dominant fashion?
    A. Miyoshi myopathy
    B. Oculopharyngeal muscular dystrophy
    C. Nonaka myopathy
    D. Acid maltase deficiency
    E. Limb girdle muscular dystrophy type 2B
12. Which of the following statements distinguishes facioscapulohumeral dystrophy from most other muscular dystrophies?
   A. Onset in the first decade
   B. Asymmetry of weakness
   C. Sparing of foot dorsiflexors
   D. Early loss of muscle stretch reflexes
   E. Frequent ophthalmoplegia

13. Which of the following diseases is NOT a distal myopathy?
   A. Hereditary inclusion body myopathy
   B. Miyoshi’s myopathy
   C. Welander’s myopathy
   D. Myotonic Dystrophy
   E. Emery-Dreifuss Dystrophy

14. Which of the following NCV or EMG findings would NOT be expected in patients with amyotrophic lateral sclerosis (ALS)?
   A. Fibrillations potentials and positive sharp waves in the tongue muscles.
   B. Reduced compound muscle action potential (CMAP) amplitude.
   C. Normal sensory nerve action potential (SNAP) amplitude.
   D. Normal F-wave latency.
   E. Conduction block.

15. Which of the following statements concerning temporal lobe epilepsy is NOT true?
   A. The most frequent and severe form of epilepsy
   B. Usually refractory to drug therapy
   C. Mesial temporal sclerosis on neuroimaging
   D. Associated with sclerosis of the CA1 and CA3 in hippocampus
   E. Frequently with secondarily generalized seizure
16. Features that increase the risk of subsequent epilepsy in patients with febrile convulsion
   A, Focal seizure
   B, Prolonged seizure (More than 15 minutes)
   C, Residual neurologic abnormality
   D, More than one seizure in the same day
   E, All of above

17. Which anticonvulsant has the lowest protein-bound fraction?
   A, Phenytoin
   B, Gabapentin
   C, Lamotrigine
   D, Carbamazepine
   E, Valproate

18. Which one of the following statements about “periodic leg movements of sleep” (PLMS) is NOT true?
   A, Consists of dorsiflexion of the foot, extension of the big toe, and often flexion of the leg at the knee and hip.
   B, Occurred primarily in REM sleep
   C, These movements are remarkably periodic, with 20-40 second intervals.
   D, PLMS are initiated by sleep or drowsiness.
   E, Treatment with dopaminergic agonist is generally effective.

19. Which is NOT correct for mechanism of action of antiepileptic drugs.
   A, Inhibition of Na⁺-dependent action potential in a frequency-dependent manner.
   B, Inhibition of voltage gated Ca²⁺ channel.
   C, Decrease of glutamate release.
   D, Potentiation of GABA receptor function.
   E, Increasing T-type Ca²⁺ channels in thalamus neurons.
20. The EEG showed high-amplitude theta and delta waves with interspersed K-complexes and sleep spindles. The delta waves make up about 40% of the EEG. Based on the EEG finding, which sleep stage is most likely?
   A. Non-rapid eye movement (NREM) stage 1
   B. NREM stage 2
   C. NREM stage 3
   D. NREM stage 4
   E. Rapid eye movement (REM) stage

21. Which surgical procedure would be the choice of treatment for medical intractable seizures in patients with Sturge-Weber syndrome?
   A. Corpus callosotomy
   B. Hemispherectomy
   C. Nonlesional cortical resection
   D. Lesionectomy
   E. Multiple subpial transactions

22. Which is the gene defect in Unverricht-Lundborg Disease?
   A. Voltage-gated K+ channel
   B. Voltage-gated Na+ channel
   C. Nicotinic Ach receptor
   D. rasGAP-like signaling molecule
   E. Cystatin B

23. When does REM sleep begin after sleep onset in patients with narcolepsy?
   A. Usually within 10 minutes of sleep onset
   B. Usually after 20-30 minutes after sleep onset
   C. Usually after 40-50 minutes after sleep onset
   D. Usually after 85-100 minutes after sleep onset
   E. Usually after 200 minutes after sleep onset
24. Which of the following statements concerning the normal EEG of the wakeful adult is NOT true?
    A. The amplitude of the alpha rhythm often waxes and wanes.
    B. Slow alpha variants are rhythms of 3.5-6.5 Hz
    C. A breach effect usually results from a skull defect
    D. The mu rhythm is most commonly seen in younger adults, with a frequency at 13-16 Hz
    E. The frequency of beta rhythms is over 13 Hz

25. Which activation procedure most likely to induce the 3 Hz spike-and-wave discharges?
    A. Hyperventilation
    B. Sleep
    C. Photic stimulation
    D. Eye opening, closing, and mental concentration
    E. Auditory stimuli

26. Which is the best choice for treatment of alcohol (ethanol) withdrawal seizures?
    A. Phenytoin
    B. Valproate
    C. Ethosuximide
    D. Diazepam
    E. Felbamate
27. Which of the following statement concerning “cerebral autosomal dominant arteriopathy with subcortical infarcts and leucoencephalopathy (CADASIL)” is false?
A. The precise nature of vascular change is amyloid degeneration.
B. NOTCH 3 gene is involved in this disorder
C. Small arterioles (100-400 µm diameter) is the involved vessels
D. This vasculopathy leads to multiple lacunar infarcts in the preriventricular white matter, basal ganglia and pons with diffuse loss of myelin in the cerebral white matter
E. Death usually occurs in the 50s

28. Heiss and Siesjo have determined the critical threshold of cerebral blood flow, measured by xenon clearance, below which functional impairment occurs.
A. 63 mL/100gm/min
B. 53 mL/100gm/min
C. 43 mL/100gm/min
D. 33 mL/100gm/min
E. 23 mL/100gm/min

29. Following the resection of an anterior communicating artery aneurysm, a patient may exhibit each of the following condition EXCEPT
A. amnesia
B. personality change
C. akinetic mutism
D. expressive aphasia
E. urinary incontinence
(  )30. About the spontaneous intracerebral hemorrhage, which one is NOT correct:
A. The putamen is the site most frequently affected.
B. Impaired upward gaze often seen in patient with thalamic hemorrhage.
C. The symptoms of cerebellar hemorrhage usually begin abruptly with vomiting and severe ataxia and occasionally accompanied by paralysis of conjugate lateral gaze to one side.
D. Duret's hemorrhage is a primary hemorrhage in the midline of the upper brain stem.
E. The most important risk factor is hypertension.

(  )31. The Sneddon syndrome, which one is incorrect? consists of deep blue-red lesions of livedo reticularis and livedo racemosa in association with multiple strokes.
A. All patients have high titers of antiphospholipid antibodies.
B. Skin lesions show a noninflammatory vasculopathy with intimal thickening.
C. The pathology of the cerebrovascular occlusive disease has not been adequately studied.
D. The age of patients with strokes was 30 to 35 years.
E. The Sneddon syndrome may be a heterogeneous entity
32, A 54-year-old right-handed woman presents with a history of acute onset of double vision and left frontotemporal headache. On examination, she has mild left ptosis, an enlarged left pupil with decreased reactivity, and an abducted left eye with decreased adduction, elevation and depression. Her neck is not stiff and there is no fever. The most probable lesion is:
A, compression of 3rd cranial nerve by an intrinsic tumor
B, compression of 3rd cranial nerve by sudden expansion of a cerebral aneurysm
C, compression of 3rd cranial nerve by a ruptured cerebral aneurysm
D, infarction of the left 3rd nerve attributed to diabetes
E, left midbrain tectum infarction

33, Ideomotor apraxia of the left limbs is caused by a lesion at
A, Anterior corpus callosum
B, Left parietal lobe
C, Right parietal lobe
D, Thalamus
E, Bilateral parietal lobes

34, Which one is the correct signal change of diffusion-weighted image (DWI) and apparent diffusion coefficient (ADC) in acute cerebral infarction (within 24 hours)?
A, High signal on DWI and low signal on ADC
B, High signal on both DWI and ADC
C, Low signal on both DWI and ADC
D, Low signal on DWI and high signal on ADC
E, None of above
35. Structures in the ventromedial regions of the medulla received their blood supply from the
A, Posterior spinal and superior cerebellar arteries
B, Vertebral and anterior spinal arteries
C, Vertebral and posterior spinal arteries
D, Posterior spinal and posterior inferior cerebellar arteries
E, Posterior and anterior inferior cerebellar arteries

36. Which match is “wrong” ? ( artery and its supplied area)
A, thalamus, posterior cerebral A
B, red nucleus, posterior cerebral A
C, uncus, anterior choroidal A
D, putamen, penetrating branches of middle cerebral A
E, body of caudate, posterior cerebral A

37. Which one of the following symptom/sign or syndrome is not caused by bilateral occipital lesion?
A, Balint syndrome
B, Cortical blindness
C, Visual object agnosia
D, Anton syndrome
E, Prosopagnosia

38. Which one of the following is NOT included in the four most common locations of saccular aneurysm ?
A, Anterior communicating artery
B, Origin of the posterior communicating artery
C, At the first major bifurcation of the middle cerebral artery
D, At the bifurcation of the internal carotid into middle and anterior cerebral arteries
E, At the bifurcation of basilar artery
39. Which one of the following statements about medial pontine infarction is **NOT** true?
   A. Occur after occlusion of paramedian branches of the basilar artery.
   B. It may present ipsilateral facial weakness, ipsilateral gaze palsy, contralateral facial numbness and ataxia.
   C. Caudal lesion may cause contralateral loss of proprioception.
   D. It may present vertigo, nystagmus, and Horner syndrome.
   E. Palatal myoclonus may occur if central tegmental tract is involved.

40. Which aphasic disorder is attributed to the lesion at “arcuate fasciculus”?
   A. Anomic aphasia
   B. Conduction aphasia
   C. Motor transcortical aphasia
   D. Sensory transcortical aphasia
   E. Global aphasia

41. Which one of the following statements concerning stroke in children is correct?
   A. Vasculitis is a common cause of stroke in young children
   B. Leukemia commonly cause cerebral infarction rather than hemorrhage
   C. Cerebral aneurysms in children usually occur near the circle of Willis
   D. MELAS will not cause stroke in the children
   E. Aphasia caused by stroke in younger than 4-year-old children usually recovers without leaving permanent aphasia.
42. Carotid endarterectomy has significantly reduced the recurrent stroke in patients with carotid artery stenosis of

- A, 30 - 40%
- B, 40 - 50%
- C, 50 - 70%
- D, ≥ 70%
- E, occlusion

43. Which one of the following diseases affects large arteries?

- A: Takayasu’s disease
- B: Churg-Strauss syndrome
- C: Polyarteritis nodosa
- D: Wegener’s granulomatosis
- E: Rheumatoid arthritis

44. The only symptom that is invariably improved in all pallidotomy series on the side contralateral to the operation for Parkinson’s disease is

- A, Levodopa-induced dyskinesia.
- B, Resting tremor.
- C, Bradykinesia.
- D, Rigidity.
- E, Gait.

45. Which one of the following statement is NOT correct?

- A, Hemiballism is caused by lesion of subthalamic nucleus of Luys in opposite site
- B, Chorea refers to a forcible, rapid, jerk type movement
- C, The anatomic basis of chorea is uncertain
- D, Paroxysmal Kinesigenic choreoathetosis can cause consciousness change and abnormal EEG finding
- E, The most frequent causes of acute dystonic reaction are drugs such as phenothiazines metoclopramide
46. Which of the following statements concerning palatal tremor is false?
A. In essential form, it reflects the rhythmic activation of the tensor veli palatini muscles and imparts a repetitive audible click, which stops during sleep
B. In symptomatic form, it involves the levator veli palatini muscles, which stops during sleep
C. Oscillopsia, unilateral or bilateral cerebellar signs and involvement of muscles of other body part including the diaphragm are common in symptomatic form
D. Unilateral or bilateral inferior olivary nucleus enlargement can be seen in MR imaging study of patients with symptomatic form of palatal tremor
E. Lesion that interrupts the Mollaret triangle is one of the possible cause of this tremor

47. A 25-year-old gentleman has had involuntary trunk and bilateral leg jerks for 3 years. The symptom was prone to develop on lying flat and may thus hinder him from falling asleep normally. Surface electromyographic (EMG) recording revealed EMG bursts over bilateral rectus abdominis and bilateral leg muscles with burst duration lasting for longer than 200 msec. What is the most appropriate diagnosis for the patient?
A. Excessive startle response
B. Cortical myoclonus
C. Propriospinal myoclonus
D. Restless leg syndrome
E. Essential myoclonus
48. All of the following signs/symptoms may be found in patients with one of the MSA (Multiple System Atrophy) **EXCEPT:**
A. Rigidity
B. Autonomic dysfunction
C. Ataxia
D. Hoffman's sign
E. Alien limb phenomenon

49. Which one of the following is always a symptomatic dystonia?
A. Blepharospasm
B. Oromandibular dystonia
C. Torticollis
D. Hemidystonia
E. Domp-response dystonia

50. Progressive supranuclear palsy (PSP) should be differentiated from Parkinson's disease (PD) clinically. The most distinct clinical sign to differentiate PSP from PD is:
A. Vertical gaze palsy
B. Pseudobulbar palsy
C. Ataxia
D. Horizontal eye movements limitation
E. Dementia

51. Which one of the following statements about Cortical-Basal Ganglionic Degeneration is **NOT** true?
A. Asymmetric, usually unilateral onset.
B. Usually begins in the upper extremity.
C. MRI showed asymmetrical parietal atrophy.
D. Pathology showed neurofibrillary tangles and amyloid deposition.
E. Might have cortical sensation loss
52. Which one of the following descriptions about Dopa responsive dystonia is NOT correct?
   A, Onset usually before 12 years old
   B, Foot dystonia common
   C, Often progressively worsening despite treatment
   D, Marked diurnal change in symptom
   E, Normal Fluoro-L-dopa-PET findings

53. Which is effective for the treatment of restless legs syndromes?
   A, Pergolide
   B, Amphetamine
   C, Propranolol
   D, Phenytoin
   E, All of above

54. Which muscle is innervated by peroneal division of sciatic nerve?
   A, long head of biceps femoris
   B, short head of biceps femoris
   C, semimembranosus
   D, semitendinosus
   E, anterior tibialis muscles

55. Which one of the following symptoms is NOT associated with peripheral facial palsy?
   A, loss of taste
   B, Hyperacusis
   C, Facial asymmetry
   D, Ptosis
   E, Bell’s phenomenon
56. When a patient has focal weakness of peripheral nerve origin, which finding should you seek for in nerve conduction study?
   A. Temporal dispersion
   B. Polyphasic wave
   C. Conduction slowing
   D. Conduction block
   E. Axonal reflex

57. Which one of the following findings in EMG study may suggest myopathy?
   A. Fibrillation
   B. Short duration small amplitude MUAP
   C. Early recruitment pattern
   D. Full interference
   E. All of above

58. Which one of the following statements is NOT correct?
   A. The CT scan measures the x-ray attenuation coefficients of the tissues in the head.
   B. The MRI scan measures the radio-frequency (RF) energy that was emitted by resonated protons.
   C. The EEG measures the voltage difference between the two recording electrodes.
   D. The EP recording measures the current difference between the recording electrodes and the stimulator.
   E. The NCV study measures the conduction velocity of the fastest conducting fibers.
59. Which one of the following statements about VEP is correct?
   A, Pattern-shift VEP (PSVEP) is more stable than flash induced VEP.
   B, The visual acuity has no effect on the result of VEP.
   C, In doing PSVEP, the bigger the check size the larger the amplitude of P100 will be.
   D, VEP can be used to differentiate the lesion of the retina or the optic nerve.
   E, The generator of P100 is probably in the temporal lobe.

60. Which one of the following statements about SSEP is correct?
   A, The SSEP is generated by using electric stimulation on the small unmyelinated nerve fibers.
   B, All SSEP components are near field potentials.
   C, It is very sensitive in demyelinating diseases, such as MS.
   D, In Median SSEP, the cortical N20 is more prominent on the parasagittal region.
   E, In Tibial SSEP, the cortical P40 is more prominent on the parietal region.

61. Diagnostic ultrasound frequency range is
   A, 2 to 10 mHz
   B, 2 to 10 kHz
   C, 2 to 10 MHz
   D, 3 to 15 kHz
   E, none of the above

62. Two different colors in the same vessel indicate
   A, flow reversal
   B, sector scan
   C, vessel curvature
   D, aliasing
   E, any of the above
63. Which one of the following findings about papilledema is false?
   A. Acute visual loss in acute papilledema
   B. Elevation of the disc
   C. Blurring of the disc margin
   D. Loss of venous pulsations
   E. Peripapillary hemorrhages in some instances

64. Downbeating nystagmus localizes the lesion to which one of the following?
   A. Thalamus
   B. Cervicomedullary junction
   C. Edinger-Westphal nucleus
   D. Lateral geniculate body
   E. Cerebellar vermis

65. In brainstem auditory evoked potentials (BAEP) study, abnormal delayed wave V with normal wave I, and III suggests:
   A. Acoustic nerve lesion
   B. Cerebellopontine angle lesion
   C. Pontine lesion
   D. Midbrain lesion
   E. None of the above

66. Which one of the following drugs can be used to distinguish postganglionic Horner's syndrome from pre-ganglionic or central lesion?
   A. Cocaine
   B. Atropine
   C. Hydroxyamphetamine
   D. Pilocarpine
   E. Timolol
67. Which branch of the extracarotid artery is frequently a source of collateral flow?
   A. Superior thyroidal a.
   B. Facial a.
   C. Frontal a.
   D. Superficial temporal a.
   E. Ophthalmic a.

68. About subclavian steal syndrome, choose the best answer.
   A. Reversal of blood flow in the vertebral artery ipsilateral to a distal subclavian artery stenosis.
   B. Reversal of blood flow in the vertebral artery contralateral to a distal subclavian artery stenosis.
   C. A benign hemodynamic phenomenon with rare neurological deficits.
   D. SSS was found more frequently on the right side.
   E. Systolic brachial blood pressure differences can be found in all cases.

69. A 23-year-old male patient had saliva drooling and difficulty in speaking for 4 months. Slowing in motion was developed in recent 2 months. By tracing the history, he was found to have liver functional impairment since 1 year ago, which is irrelevant to hepatitis. Which of the following could be the most appropriated examination that could be crucial for making the diagnosis?
   A. Blood test for autoantibody
   B. Cardiac echo
   C. Chest X-ray
   D. Eye examination
   E. Encephalography

70. With the information gathered above (question #69), which of the following specimen could be helpful to confirm the diagnosis in this 23
A 71-year-old patient?
A, cerebrospinal fluid (CSF)
B, 24-hour urine copper level
C, muscle biopsy
D, saliva
E, 24-hour urine zinc level

( )71, Jaw jerk and snout reflex can help localization. A pathologically brisk jaw jerk and snout reflex in a patient who has hyperreflexia in the arms and legs and Babinski signs would suggest a level of dysfunction:
A, at the cerebral hemisphere
B, above the thalamus
C, above the pons
D, below the pons
E, at the cervical cord

( )72, A 60-year-old male patient who cannot perceive the identity of object held in his right hand (astereognosis). Which brain lesion is most likely associated with this sign?
A, right frontal lobe lesion
B, left frontal lobe lesion
C, right parietal lobe lesion
D, left parietal lobe lesion
E, left temporal lobe lesion

( )73, Which statement is “wrong” about Hutchinson pupil?
A, ptosis
B, ophthalmoplegia
C, mechanism: strangulation of nerve between herniating tissue and medial petroclinoid ligament
D, mechanism: more often due to downward pressure and entrapment of nerve between posterior cerebral and superior cerebellar arteries
E, pupil dilatation

( ) 74, Diffuse background slowing in EEG in the waking state would be expected in all of the following EXCEPT:
A, Dementia
B, Normal aging
C, Encephalitis
D, Metabolic encephalopathy
E, All of the above

( ) 75, The Visual evoked potential (VEP) study shows the following P100 latencies:
   Right eye: 98 ms
   Left eye: 119 ms
From these data which conclusion could be made?
A, Lesion of the right optic nerve.
B, Lesion of the left optic nerve.
C, Lesion of the right optic tract.
D, Lesion of the left optic tract.
E, Conclusion cannot be made on the basis of these data.

( ) 76. Increased tibial P37 latency with normal tibial lumbo-pelvis segment latency and normal median P14 and N20 latency suggests which
localization?
A, Lesion of the spinal cord between the cauda equina and the cervical spine.
B, Lesion of the spinal cord at or above the mid cervical spine.
C, Lesion above the caudal medulla.
D, Lesion between the tibial nerve and cauda equina.
E, None of these.

(   )77, Which one of the following usually does not have abnormal jitter of single fiber EMG?
A, myasthenia gravis
B, myasthenic syndrome
C, motor neuron disease
D, peripheral neuropathy
E, steroid myopathy

(   )78, In nerve conduction studies, physiologic phase cancellation usually affects:
A, Compound muscle action potential (CMAP) more than sensory nerve action potential (SNAP)
B, SNAP more than CMAP
C, CMAP and SNAP about equally
D, only CMAP
E, only SNAP

(   )79, The contraindications for the ergot-derived dopamine agonists did not include
A, Recent, unstable coronary artery disease.
B, Severe peripheral arterial disease or malignant hypertension.
C, Active peptic ulcer.
D, Past history of severe psychiatric disease or symptoms.
E, Patients who need to drive a car for a job or activities of daily living.

(   )80, The structure which is responsible for the sense of linear acceleration of the head:

A, Semicircular canals
B, Utricule and saccule
C, Cochlear
D, Retina
E, All of the above

(   )81, A 70-year-old patient presents with sudden severe vertigo and disequilibrium. The symptoms are progressively severe and the neurologic examination reveals Horner's syndrome, dysarthria, hemi-sensory deficit, and unilateral ataxia. What is the most likely diagnosis?

A, vestibular neuritis (or neuronitis)
B, benign paroxysmal positional vertigo
C, vertebrobasilar insufficiency
D, cerebello-pontine angle tumor
E, Meniere's disease

(   )82, During an excitatory postsynaptic potential (EPSP)

A, Na⁺ enters the cell.
B, $\text{Na}^+$ leaves the cell.
C, $\text{K}^+$ enters the cell.
D, $\text{Cl}^-$ leaves the cell.
E, $\text{K}^+$ leaves the cell.

(   )83, Which one of the following structures plays an important role in the maintenance of vigilance and responsiveness to unexpected environmental stimuli
A, locus ceruleus
B, raphe nucleus
C, substantia nigra
D, red nucleus
E, tubero mammillary nucleus

(   )84, The largest groups of serotonergic neurons in the brain are found in
A, basal forebrain
B, locus ceruleus
C, substantia nigra
D, raphe nuclei
E, tuberomammillary nucleus

(   )85, Which one of the following condition is not associated with syringomyelia
A, Type I Chiari malformation
B, Human T-lymphocyte virus-1 (HTLV-1)
C, Obstructive lesion of foramen magnum
D, Spinal cord tumors
E, Trauma

(   )86, Which condition would not result in reduction of glucose level in cerebrospinal fluid?
A, Bacterial meningitis
B, Herpes simplex encephalitis
C, Sarcoidosis of the CNS
D, Traumatic puncture
E, Subarachnoid hemorrhage

87. What disease has circulating autoantibodies that are reactive with glutamic acid decarboxylase?
A, Isaacs syndrome
B, Stiff-man syndrome
C, Polymyositis
D, ALS
E, Transverse myelitis

88. The patient had apneustic breathing. Which one of the following is the most likely damaged structure?
A, Forebrain damage
B, Hypothalamus
C, Midbrain
D, Lower pontine tegmentum
E, Medulla

89. Which neural lesion correlates to subcortical aphasia?
A, Left prefrontal
B, Left posterior temporal
C, Inferior to Wernicke's area
D, Left basal ganglia
E, Left inferior temporal

90. Which statement is "wrong" about Balint syndrome?
A, visual inattention mainly to the central part of visual field
B, optic ataxia  
C, simultanagnosia  
D, usually bilateral vascular border zones lesion of parieto-occipital regions  
E, disturbed spatial perception and representation

( )91, Lesion affecting the dominant hemisphere and the posterior corpus callosum simultaneously may cause  
A, Anton syndrome  
B, Alexia without agraphia  
C, Alexia with aphasia  
D, Anomia  
E, Prosopagnosia

( )92, Which one of the following is a characteristic finding of monoclonal gammopathy of undetermined significance?  
A, Organomegaly, or lymphadenopathy  
B, Common light chain “k”  
C, Urine light chains  
D, Skeletal lesions  
E, Abnormal complete blood cell count

( )93, Which one of the following statements describing Vogt-Koyanagi-Harada syndrome is NOT correct?  
A, Evidence of uveitis and nervous system involvement  
B, Headache is a common complaint  
C, Poliosis, alopecia, and vitiligo may be seen in such patients  
D, IVIG is the choice of therapy  
E, The neurologic symptoms are caused by an inflammatory adhesive arachnoiditis

( )94, Which is/are possible mechanism(s) that leptomeningeal carcinomatosis produce neurological deficits?
A, Invasion of cranial and spinal nerve roots
B, Blockage of cerebrospinal fluid pathways
C, Production of ischemic intraparenchymal lesions
D, Competition between neoplasm and neural parenchyma for essential metabolites
E, All of the above

( ) 95, Which one of the following is NOT true regarding normal pressure hydrocephalus?
A, A potentially treatable dementia
B, Shunt operation has little complication
C, Gait disturbance is an early feature
D, Presence of vascular lesion is an unfavorable sign for shunt operation
E, CSF drainage is a good indicator for determining shunt operation

( ) 96, Early delayed radiation encephalopathy is caused by
A, Cytotoxic edema
B, Vascular change
C, Immunological mechanism
D, Demyelination
E, Blood-brain barrier damage with increased intracranial pressure

( ) 97, Which chromosome encodes the prion protein?
A, Chromosome 18
B, Chromosome 19
C, Chromosome 20
D, Chromosome 21
E, Chromosome 22

( ) 98, Antianxiety drugs and antipsychotics share which side effects?
A, Physical dependence
B, Sedation
C, Extrapyramidal symptoms
D, Antiemetic action
E, Muscle relaxant activity

(   )99, Regarding intraepidermal nerve fiber density (IENFD), choose the correct response:
A, IENFD is much lower in the distal leg of patient with motor neuropathy than sensory neuropathy
B, IENFD can be assessed by immunostaining of skin sections with protein gene product 9.5
C, Conventional IENFD is less sensitive than Ocular IENFD
D, Normal human skin has abundant epidermal nerve fibers, but few subepidermal and dermal nerve fibers
E, IENFD is a good indicator for pure sensory neuropathy but not other forms of neuropathy

(   )100, The five cell-types of the cerebellum cortex are all inhibitory except which?
A, Purkinje cells
B, Stellate cells
C, Basket cells
D, Golgi cells
E, Granule cells

(   )101, Primary olfactory cortex
A, area 33 of Brodmann
B, area 34 of Brodmann
C, area 35 of Brodmann
D, area 36 of Brodmann
E, area 37 of Brodmann

(   )102, The phenomenon of “passive movement of limbs encounter a fluctuating resistance” in the advanced stages of dementia is called:
A, Bulldog reflex
B, Grasping
C, Gegenhalten
D, Palmomental reflex
E, Snout reflex

( ) 103, The threshold of CAG repeat length for development of Huntington’s disease is around
A, 20.
B, 30.
C, 40.
D, 50.
E, 60.

( ) 104, Which one of the following statements concerning Wilson’s disease is false?
A, In rapid advancing form, cavitation in the lenticular nuclei is frank in pathologic study
B, In more chronic form, there are only shrinkage and a light-brown discoloration of the lenticular nuclei in pathologic study
C, Alzheimer type I cells can be found in cerebral cortex, basal ganglia, brainstem nuclei, and cerebellum
D, Subcortical demyelination can be found in some cases
E, Nerve cell loss in substantial nigra and dentate nuclei are usually apparent

( ) 105, Which prion disease runs a relative chronic course (mean duration, 5 year)?
A, Creutzfeldt-Jakob disease (CJD)
B, Kuru
C, Fatal familial insomnia
D, Gerstmann-Straussler-Scheinker syndrome
E, New variant CJD

( ) 106, The following diseases contain extra copies of trinucleotide repeats CAG, EXCEPT:
A, Huntington’s chorea
B, Kennedy syndrome
C, Spinocerebellar ataxia-1 (SCA-1)
D, Friedreich ataxia
E, Dentatorubral-pallidoluysian atrophy

( ) 107, Which protein metabolism abnormalities is not related to Alzheimer’s disease:
A, Amyloidopathies
B, Tauopathies
C, Synucleinopathies
D, Prion protein disorders
E, Abnormalities of beta-secretase and gamma-secretase

( ) 108, Persistent vegetative state is defined as a vegetative state for at least
A, Two weeks
B, One month
C, Three months
D, Six months
E, One year

( ) 109, Several members of a large family are affected by the onset of decreasing mental function and motor coordination when they reach
middle age. Their movements are marked by choreoathetosis. Genetic testing reveals increased trinucleotide CAG repeats. Which of the following structures is most likely to appear grossly abnormal at autopsy of the affected persons:

A, Caudate nucleus
B, Midbrain
C, Temporal lobe
D, Locus ceruleus
E, Dorsal root ganglion

( )

110, A 73-year-old male has exhibited problems remembering things for several months, and he is noted to confabulate. He dies as a consequence of a hepatocellular carcinoma. At autopsy, his brain demonstrates bilaterally small mammillary bodies that show brown discoloration. Microscopically, there is gliosis and vascular proliferation and hemosiderin deposition. These findings are most typical for:

A, Multiple sclerosis
B, Parkinson's disease
C, Amyotrophic lateral sclerosis
D, Wernicke-Korsakoff syndrome
E, Huntington's disease
111. Which one of the following symptoms is NOT common in Pick disease or frontotemporal dementia?

A, Early depression
B, Sexual disinhibition
C, Visuospatial disorientation
D, Memory loss
E, Nonfluent aphasia

112. Which one of the following is NOT a major clinical feature of dementia with Lewy bodies?

A, progressive cognitive decline
B, fluctuating cognition with variations in attention
C, parkinsonism in the early stage
D, severe amnesia in the early stage
E, visual hallucination

113. Friedreich ataxia is characterized by the following EXCEPT

A, Pes cavus and kyphoscoliosis may precede the neurological symptoms
B, Tabetocerebellar ataxia with positive Babinski’s sign, but tendon reflexes are abolished
C, Overexpression of Ataxin-1
D, Unstable GAA repeated sequence at intron
E, Autosomal recessive of inheritance

114. All the following are demyelinating disorders, EXCEPT:

A, Multiple sclerosis
B, Subacute sclerosing panencephalitis
C, General paresis
D, Progressive multifocal leukoencephalopathy
E, Metachromatic leukodystrophy
115. A case with drop wrist, the needle EMG revealed denervation changes in brachioradialis, supinator, extensor digitorium communis and extensor carpi radialis muscles, but spared the triceps brachii muscle. Where is the lesion most likely to be located:
A, Brachial plexus, posterior cord
B, Cervical roots
C, Radial nerve at spiral groove
D, Anterior interosseous nerve
E, Posterior interosseous nerve

116. Which one of the following clinical features of Wernicke’s encephalopathy improves most quickly to the parenteral administration of thiamine?
A, Nystagmus
B, Truncal ataxia
C, Ophthalmoplegia
D, Confusion, delusion
E, Memory impairment

117. Parkinsonism can be caused by these agents, EXCEPT
A, Carbon disulfide
B, MTPT
C, Manganese
D, Arsenic
A, CO

118. A 71-y/o male patient with gout developed a myopathy with elevated serum CK. Which agent may respond to his disease?
A, Colchicine
B, Allopurinol
C, Probenecid
D, Sulfinpyrazone
E, Indomethacin
119. CSF Abnormalities in Neurosyphilis: choose the inappropriate answer
   A, 100 to 300 cells per cubic millimeter, mostly lymphocytes and a few plasma cells and other mononuclear cells; the counts may be lower in patients with AIDS and those with leukopenia.
   B, elevation of the total protein, from 40 to 200 mg/dL.
   C, an increase in gamma globulin (IgG), usually with oligoclonal banding.
   D, positive serologic tests.
   E, The glucose content is low.

120. Each of the following is a true statement of AIDS dementia complex (ADC) EXCEPT:
   A, the syndrome usually has a slow onset
   B, deficits in attention are usually significant
   C, behavioral changes are often prominent
   D, amnesia is usually the earliest clinical sign
   E, psychomotor slowing is usually pronounced

121. The most common cause of cerebral mycosis, a fungal infection, is:
   A, Aspergillus
   B, Candida
   C, Cryptococcus
   D, Mucor
   E, Rhizopus

122. Which one is the early neurological complication (CD4 > 200 cells/mm3) of human immunodeficiency virus?
   A, Sensory neuropathy
   B, Progressive multifocal leukoencephalopathy
   C, Demyelinating polyneuropathy (acute and chronic)
   D, Vacuolar myelopathy
   E, Cryptococcal meningitis
123. A 50-year-old man was noted by his wife to have personality changes over the last year. He was slovenly and didn't appear to take an interest in his work. He became more forgetful. On examination he had frontal release signs and memory loss. He appeared unconcerned about his illness. A 3 cm left frontal lobe mass was found by MR imaging. The mass had areas of calcification. Which of the following diagnoses is most likely to be made on microscopic examination of the mass:

A, Thrombosed berry aneurysm  
B, Oligodendroglioma  
C, Meningioma  
D, Schwannoma  
E, Organizing abscess

124. A 36-year-old female experienced rapid onset of severe headache. Her severe dizziness, headache, nausea, vomiting, and general discomfort lasted for 10 min and could only be relieved upon lying down. The persistent symptoms showed postural variation, worsening when she was in an upright position and improving when she got into a recumbent position. Neither fever nor neck rigidity could be found. Which impression is the mostly possible?

A, Intracranial hypertension  
B, Intracranial hypotension  
C, Meningitis  
D, Cervical herniated intervertebral disc (HIVD)  
E, None of above
125. Which one of the following neurotransmitter is related to migraine pathogenesis for the model of ‘trigeminovascular theory’?
A. Noradrenaline  
B. Dopamine  
C. Prostaglandins  
D. Serotonin  
E. Acetylcholine

126. Which of the following is not amines neurotransmitter?
A. Dopamin  
B. Acetylcholine  
C. Serotonin  
D. Gamma amino butyric acid (GABA)  
E. Norepinephrine

127. The most important electrophysiologic sign(s) in Guillian-Barre syndrome within the first two weeks is(are)
A. Loss of the sural sensory nerve action potential  
B. Conduction block  
C. Increased temporal dispersion  
D. Slowed conduction velocities  
E. All of the above

128. The use of phenytoin (diphenylhydantoin) in the control of seizures may be implicated by all of the following EXCEPT:
A. Hyperplasia of the gums  
B. Development of megaloblastic anemia in sensitive patients  
C. Lymphadenopathy (pseudolymphoma)  
D. Drowsiness  
E. Ataxia
( ) 129. Narcolepsy, except
   A. Cataplexy
   B. Sleep paralysis
   C. Hypnagogic hallucination
   D. Sleepiness
   E. Increased of muscle tone

( ) 130. Which of the paroxysmal dyskinesia is the most resistant to drug therapy?
   A. Paroxysmal kinesigenic dyskinesia
   B. Paroxysmal nonkinesigenic dyskinesia
   C. Paroxysmal exertion-induced dyskinesia
   D. Paroxysmal hypnogenic dyskinesia
   E. Non of the above