CENTRAL NERVOUS SYSTEM

1. All of the following reflexes are monosynaptic *except:*

a) The knee jerk
b) The biceps jerk
c) The triceps jerk
d) The abdominal reflex
e) The supinator reflex

2. The following is true regarding the muscle spindle*:*

a) Acts as a receptor for only monosynaptic reflexes
b) Has gamma nerve fibers as afferents
c) Has Beta B fibers as efferents
d) Is stimulated by touching the muscle fibers
e) Acts as a receptor for pressure stimuli

3. Medullary postural reflexes include*:*

a) The positive supporting reaction
b) The placing reaction
c) The tonic neck reflex
d) The stretch reflex
e) The hopping reaction

4. The following is true about the basal ganglia*:*

a) Control balance
b) Control equilibrium
c) Control conjugate eye movement
d) Initiate movement
e) In disease, power is lost

5. Concerning cerebellar disorders:

a) Tone increases
b) Reflexes are exaggerated
c) The gait becomes wide-base
d) Consciousness is lost
e) Sever memory loss might follow

6. Pain sensation:

a) Is not a good sign
b) It's a perception occurs in the hypothalamic nuclei
c) Fast pain is carried by the C-Fibers
d) Referred pain is usually from somatic to visceral receptors
e) Its receptors are free nerve endings

7. The following is true about the frontal lobe*:*

a) Controls gait
b) Is the centre for intelligence
c) Is the centre for memory
d) Is one of the centers for sensation of smell
e) Controls all human emotions

8. The following is true about receptors:

a) Pain receptors are rapidly adaptive
b) Pressure receptors are slowly adaptive
c) Touch receptors are non-adaptive
d) Might be stimulated by chemical changes
e) Their stimulation generates an action potential

9. Concerning vision:

a) The cons are responsible for scotopic vision
b) The intraocular pressure ranges between 15-25 mmHg
c) Myopia is corrected by glasses having concave lenses
d) The cortex is the center for the light reflex
e) The association visual area is responsible for the primary perception of the visual pathway

10. Regarding the visual pathway:

a) Optic nerve lesions cause homonomous hemianopia
b) Optic chiasm lesions result in complete blindness of one eye
c) Is tested by visual evoked potentials
d) Test retinal lesions
e) Maybe of help in diagnosing temporal lobe lesions

11. Concerning hearing sensation:

a) The receptors are found in the middle ear
b) The center is located in the parietal lobe
c) Conductive deafness might follow hair cell destruction
d) Nerve deafness is diagnosed by obtaining audiometry curves of intensity more than 20 decibels
e) The normal hearing frequency ranges between 500-6000 Hz

12. Which of the following statements is true?

a) Rhythm of theta in the EEG ranges between 1-3 C/S
b) Alpha activity normally appears after the age of 4 years
c) Recall from sensory memory centers takes only a few seconds
d) Rapid eye movement sleep lasts for 30 minutes
e) Dopamine is one of the neurotransmitters for sleep

13. All of the following are motor areas in the brain, *except*:

a) The promotor area
b) The association motor area
c) The temporal motor area
d) The occipital motor area
e) The frontal motor area

14. Gamma efferent discharge is NOT controlled by:

a) Extreme change of behavior
b) Anxiety
c) Scratching of the skin
d) Extrapyrimidal descending tracts
e) Descending reticulocspinal tracts

15. All of the following are medullary postural reflexes, *except*:

a) The optical righting reflex
b) The tonic labyrinthine reflex
c) The tonic neck reflex
d) When the head moves to one side
e) When the head moves up

16. Sensation of pain:

a) Is carried by the posterior column tracts
b) Is carried by the lateral spinothalamic tract
c) Is carried by the 9^{th} cranial nerve
d) Perception only occurs in the sensory cortex
e) The sharp pain is carried by the slow C-Fiber

17. The following are pyramidal signs *except*:

a) Hypertonia
b) Hyprflexion
c) Upgoing big toe
d) Absence of the abdominal reflexes
e) Wasting

18. Concerning pain sensation*:*

a) Pain impulses are transmitted only by myelinated fibers
b) Its perception occurs in the cortex
c) Referral of pain is from visceral to somatic structures
d) Antero-lateral cordotomy offers long lasting relief of pain
e) Allodynia is caused by cytokines and growth factors

19. Ipsilateral cervical cord compression at C6/C7 level causes*:*

a) Absence of the triceps reflex on the same side
b) Hyperalgesia below C6/C7
c) Loss of vibration sense over the contra-lateral side of the lesion
d) Sluggish knee jerk bilaterally
e) Up going big toe on the same side of the lesion

20. Receptive aphasia*:*

a) Is due to a lesion in the frontal lobe
b) Is due to a lesion in the Sylvian fissure
c) Is differentiated from motor aphasia by the fact that patients do not obey commands
d) The cause may be infarction involving the parietal lobe
e) Carries a good prognosis if compared to Brocha's aphasia

21. Which of the following is a mid brain postural reflex*:*

a) The stretch reflex
b) The tonic neck reflex
c) The hopping reaction
d) The positive supporting reaction
e) The body on body righting reflex

22. The following are signs of cerebellar dysfunction:

a) Hypertonia
b) Tremors at rest
c) Dysphasia
d) Hyperflexia
e) Muscle weakness

23. The spinothalamic tract:

a) Transmit sensation of pressure
b) Transmit sensation of temperature
c) Terminates in the thalamus
d) Its integrity is tested by the tuning fork
e) Its lesion results in dissociated loss of pain

24. Bitemporal hemianopia is caused by*:*

a) Optic nerve lesions
b) Optic tract lesions
c) Pituitary tumors
d) Occipital lobe lesions
e) None of the above

25. Which of the following reflexes is polysynaptic:

a) The knee jerk
b) The ankle jerk
c) The abdominal reflex
d) The supinator reflex
e) The triceps jerk

26. Postion sense:

a) Is tested by the tuning fork
b) Is transmitted to the brain through the lateral spinothalamic tract
c) Is defective in pyramidal tract lesions
d) Is defective in sensory ataxia
e) Its center lies in the pre-central gyrus

27. Which of the following is a basal ganglia function:

a) Effective control of skillful movement
b) Initiation of movements
c) Control of equilibrium
d) Motor control of speech
e) Coordination of pyramidal corticospinal activity

28. Concerning color blindness:

a) Is due to diseased rods
b) Is an autosomal dominant disorder
c) Is a female disease
d) Affects one color
e) Is transmitted by the x chromosome

29. The fastest conduction of impulses occurs in nerves of type:

a) C
b) A alpha
c) A beta
d) A delta
e) B

30. The dorsal column tracts are concerned with:

a) Crude touch
b) Temperature sensation
c) Fast pain
d) Sense of vibration
e) Sexual sensations

31. The localization of sensation is a function of:

a) Adequate stimulus
b) Primary sensory cortex
c) Specific receptors
d) Medullary centers
e) Hypothalamus

32. The intensity (strength) of a stimulus is coded by:

a) The receptor specificity
b) The voltage of the generator potentials
c) The amplitude of the action potential
d) Stimulation of columns of cells in the sensory cortex
e) The frequency of impulses

33. Adaptation to sensory modalities:

a) Can be explained by receptor fatigue
b) Occurs at the same rate in different receptors
c) Is due to inactivation if Na^+ channels
d) Is due to release of inhibitory transmitter
e) Is defined as decreased firing of receptors when a stimulus is increased

34. Pyramidal diseases is characterized by:

a) Tremor
b) Muscle wasting
c) Muscle weakness
d) Hypotonia
e) Presence of the abdominal reflexes

35. Lower motor neuron disease is characterized by:

a) Muscle wasting
b) Hypertonia
c) Hyperflexia
d) Clonus
e) Disturbance of coordination

36. Signs of cerebellar dysfunction include:

a) Increase muscle tone
b) Past pointing
c) Shuffling gait
d) Resting tremor
e) Muscle weakness

37. The climbing fibers of the cerebellum:

a) Terminate directly in the deep cerebellar nuclei
b) Inhibits the purkinje cell layer
c) Excite directly the deep cerebellar nuclei
d) Stimulate the granular cell layer
e) None of the above

38. The following is true about fast pain:

a) Is carried by type C fibers
b) Is dull in nature
c) Is due to activity in the A and B myelinated fibers
d) Is transmitted in dorsal column tracts
e) Is sharp and localized in nature

39. Concerning sensation vision:

a) The rods are specialized for daylight vision
b) The cones are specialized only for colour vision
c) Hypermeteropia is corrected by using bioconcave lens
d) Parasympathetic inhibition dilates the eye pupil
e) Lesions in the pituitary fossa cause complete loss of vision in one eye

40. The following is true about the frontal lobe of the brain:

a) Has centers for control of taste sensation
b) It controls behaviour
c) Has major control centers for control of upper & lower limb activity
d) If destroyed the subject develops marked loss of memory
e) Is the center for control of vision

41. Concerning the electroencephalogram (EEG):

a) Alpha waves are best seen over the temporal areas
b) Beta waves have a slow frequency
c) Theta waves range from 4-7 cycles per second
d) The EEG is 100% diagnostic in epilepsy
e) Generalized slow waves are signs of epilepsy

42. Concerning control of posture:

a) The hopping reaction is controlled in the midbrain
b) The tonic neck reflexes are controlled in the spinal cord
c) The optical righting reflex is controlled in the cerebral cortex
d) The stretch reflex is controlled in the medulla
e) The positive supporting reaction is controlled in the midbrain

43. The following is true about the vestibular system:

a) Controls muscle tone
b) The semicircular canals are stimulated by linear acceleration movement
c) The utricle hair cells are stimulated by rotational movement
d) If damaged results in vertigo
e) The saccule hair cells stimulated by vertical sudden change of direction

44. A 70 year old man suddenly developed loss of consciousness and right sided upper and lower limb weakness. On clinical examination, the following is true:

a) Power is completely lost over both sides
b) Reflexes are exaggerated over both sides
c) Sensations are lost over both sides
d) The abdominal reflexes are absent
e) Upgoing big toe is elicited on the right side

45. A 75 year old man gradually presented with left sided tremor especially at rest, and poverty of movement and a festinant gait. On clinical examination of this patient the following is true:

a) Hypotonia
b) The patient exhibits a mask face
c) Power is severly affected
d) Reflexes are absent
e) All sensory modalities are lost

46. Impulses generated in the taste buds of the tongue reach the cerebral cortex via the:

a) Thalamus
b) Internal capsule
c) Trochlear nerve
d) Hypoglossal nerve
e) Dorsal roots of the first cervical spinal nerve