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ROLL NUMBER

WRITTEN TEST FOR THE POST OF TECH ASST (NEUROLOGY) – A To B

DATE: 25/09/2024

TIME: 9.30 to 10.30 AM

DURATION: 60 MINUTES

Total Marks: 50

INSTRUCTIONS TO THE CANDIDATES

1. Write your Roll Number on the top of the Question Booklet and in the answer sheet.
2. Each question carries 1 mark.
3. There will not be any Negative Marking.
4. Write legibly the alphabet of the most appropriate answer (A, B, C or D) in the separate answer sheet provided.
5. Over-writing is not permitted.
6. Candidate should sign in the question paper and answer sheet.
7. No clarifications will be given.
8. Candidate should hand over the answer sheet to the invigilator before leaving the examination hall.

Signature of the Candidate

[Handwritten Signature]
MS 25/9/24

TECHNICAL ASSISTANT (NEUROLOGY)- I MFCP

1. The opposition to the flow of alternating current is known as
 - a. Impedance.
 - b. Voltage
 - c. Inductance.
 - d. Capacitance.
2. The central sulcus is the anterior boundary of the
 - a. Frontal lobe.
 - b. Temporal lobe.
 - c. Parietal lobe.
 - d. Occipital lobe.
3. Anterior and middle cerebral arteries are branches of which artery?
 - a. Basilar
 - b. Vertebral
 - c. Internal carotid
 - d. External carotid
4. Which pattern is most likely to be seen during prolonged recordings of a normal, awake, 60 year-olds?
 - a. OIRDA (Occipital Intermittent Rhythmic Delta Activity)
 - b. SREDA (Subclinical Rhythmic Electrographic Discharges of Adults)
 - c. FIRDA (Frontal Intermittent Rhythmic Delta Activity)
 - d. LAMBDA
5. Source and sink of EEG activity denotes which of the following?
 - a. Cortical layers III and V
 - b. Axonal action potentials
 - c. Horizontal dipoles with positivity and negativity on either side
 - d. None of the above
6. Which of the following time constants would best display delta activity?
 - a. 0.1 second
 - b. 0.3 second
 - c. 0.5 second
 - d. 1.0 second
7. A 9 mm deflection at a setting of 20 $\mu\text{V}/\text{mm}$ will have an input signal of
 - a. 3 μV .
 - b. 100 μV .
 - c. 30 μV .
 - d. 180 μV
8. Increasing the number of seconds displayed on the monitor
 - a. Increases spike duration.
 - b. Decreases spike duration.
 - c. Increases spike amplitude.
 - d. Does not change spike amplitude or duration.
9. Signals common to both inputs of a differential amplifier with like frequency, amplitude, and phase are
 - a. Amplified.
 - b. Attenuated 63%.
 - c. Canceled.
 - d. Attenuated 37%.

10. What happens when a 60 cycle sinewave when sampled at 100 Hz?
- Overlap of data
 - Digital filtering
 - Subharmonic response
 - Aliasing
11. The ability of an amplifier to reject in phase and amplify out of phase potentials is
- Common mode rejection.
 - Amplifier gain.
 - Sensitivity.
 - Phase reversal.
12. Pattern reversal visual evoked potential (PRVEP) is most suitable in the following patient type
- Comatose patients
 - Neonates
 - Those with severe visual impairment
 - Patients with suspected psychogenic blindness
13. Which of the following is NOT usually considered to have a bipolar montage configuration?
- Longitudinal
 - Transverse
 - Hatband
 - Laplacian
14. Using the International 10-20 Electrode Placements. If the distance from nasion to inion is 34 cm, what is the distance from Fz to Oz?
- 20.4 cm
 - 27.2 cm
 - 23.8 cm
 - 30.6 cm
15. When a large amount of electrolyte paste is used to hold EEG electrodes in place, the total recording area will be the
- Diameter of the EEG electrode.
 - Inner surface area of the EEG electrode.
 - Total scalp surface of the paste.
 - Inner plus outer surface area of the EEG electrode.
16. 14 and 6 Hz positive spikes are best recorded with
- Bipolar chain.
 - An average reference.
 - The contralateral ear reference.
 - Both ears connected to the reference.
17. Which of the following studies can help differentiate a cervical root avulsion from brachial plexopathy?
- Motor nerve conduction studies in upper limb
 - F-wave reflex testing in upper limb
 - Somatosensory evoked potential (SSEP) testing from the upper limb
 - Sensory nerve conduction study
18. Which of the following potentials on needle EMG has an irregular firing pattern?
- Complex repetitive discharges
 - Positive sharp waves
 - Fibrillation potentials
 - Fasciculation potentials

19. The low-frequency filter setting should be set at 0.5 Hz while performing which of the following tests?
- Slow repetitive stimulation at 3 Hz
 - Fast repetitive stimulation at 50 Hz
 - Sympathetic skin response
 - Blink or facial studies
20. Which of the following features is highly suggestive of an acquired demyelinating polyneuropathy?
- Prolonged distal latency
 - Severely reduced conduction velocity
 - Conduction block & Abnormal temporal dispersion
 - Severely reduced motor or sensory amplitude
21. Decreased limb temperature may cause the following electrodiagnostic changes on motor nerve conduction studies: (Most Suitable answer)
- Increased motor amplitudes
 - Prolonged distal latencies
 - Slowed nerve conduction velocities
 - All of the above
22. Supra maximal stimulus is
- The current strength on which amplitude is maximum
 - The minimum current strength on which pain is least
 - The maximum possible current
 - The current strength increased to an additional 25 % from the current strength on which amplitude is maximum
23. Giant somatosensory evoked potential (SSEP) can be seen in which of the following conditions
- DMD
 - MTS
 - Progressive myoclonic epilepsy
 - RBD
24. What would be the GCS of a suspected brain death case?
- 0
 - 1
 - 2
 - 3
25. What is inability to see anything
- Anopia
 - Ataxia
 - Aphasia
 - Amnesia
26. In the visual field charting of a patient who has undergone Right ATL+AH, the most suitable report shows:
- Right hemianopia
 - Left superior quadrant anopia
 - Left hemianopia
 - Right superior quadrant anopia
27. A patient had sweat artifact, after all the remedies are taken what are settings change is recommended
- Decrease HFF
 - Increase LFF
 - Increase sensitivity
 - Use Notch filter
28. A patient has left temporal spikes, which of the following montage is not acceptable to localize
- Earlobe montage
 - Average ref
 - Cz- reference
 - Longitudinal

29. All of the following signals are needed to score sleep stages on a polysomnogram (PSG) *except*
- EEG
 - Electrooculogram (EOG)
 - EMG
 - Thermistor
30. Sawtooth waves are characteristics of which stage of sleep
- N1
 - N2
 - N3
 - REM
31. The resting membrane potential of a neuron is typically
- 10 mV
 - 70 mV
 - 0
 - +55 mV
32. What is the maximum recommended electrode impedance for recording EEG?
- 500 ohms
 - 1000 ohms
 - 5000 ohms
 - 50000 ohms
33. In median nerve conduction wrist stimulation showed onset latency of 3.5ms and elbow showed onset latency of 8.5ms, distance between the wrist and elbow is 250cm. then what will be conduction velocity of median nerve
- 71m/s
 - 50m/s
 - 29 m/s
 - 40 m/s
34. Which of the following features of the motor unit potential should be taken into consideration before analyzing individual motor units?
- Rise time
 - Duration of motor unit potential
 - Number of phases or turns
 - Amplitude of motor unit potential
35. The conduction velocity of an action potential is *least* likely to be affected by which of the following?
- Axon diameter
 - Axon temperature
 - Distance between nodes of Ranvier
 - Number of surrounding axons
36. Which of the following changes seen during hyperventilation (HV) is considered abnormal?
- Diffuse polymorphic delta activity in children
 - Bifrontal delta activity in adults
 - Bitemporal delta activity in adults
 - Unilateral focal slowing in adults
37. Subclinical rhythmic electrographic discharge in adults (SREDA) has all of the following characteristics *except*
- It has been correlated with seizures
 - It could present as rhythmic sharply contoured activity with evolution
 - It can last 1-2 minutes
 - It is typically in the theta frequency range
38. What EEG pattern is expected in neonates starting at 29 weeks of conceptional age?
- Tracé discontinu
 - Tracé alternant
 - Burst suppression
 - Isoelectric
39. What structure is the source of Wave I of the brainstem auditory evoked potential (BAEP)?
- Organ of corti
 - Hair cells
 - Cochlear nerve
 - Cochlear nucleus

40. The P100 waveform latency is increased by which of the following?
- Low contrast; low luminance
 - Low contrast; high luminance
 - High contrast; low luminance
 - High contrast; high luminance
41. What is the gold standard for measuring airflow?
- Pneumotachograph
 - Thermistor
 - Nasal pressure transducer
 - Respiratory inductance plethysmograph
42. To score an epoch as REM, changes in which of the following are required?
- EMG only
 - EMG and EEG
 - EMG or electrooculogram (EOG)
 - EMG, EEG, and EOG
43. Submaximal stimulation is used in which of the following nerve conduction studies?
- Motor nerve conduction and F-wave responses
 - All sensory studies
 - H-reflex study
 - All nerve conduction studies are always performed with supramaximal stimulation and submaximal stimulation should never be used
44. Infected body parts are to be disposed into which colour bin
- Black
 - Green
 - Yellow
 - Red
45. Abductor pollicis brevis is innervated by the median nerve. The motor fibres for this innervation come from which of the following cervical roots?
- C6, C7, C8
 - C7, C8
 - C5, C6, C7
 - C8, T1
46. Which of the following fibres have the slowest conduction velocity?
- A α
 - A β
 - A δ
 - C
47. In which of the following clinical condition acute ECoG is clearly helpful
- MTLE HS
 - Hemimegalencephaly
 - Frontal DNET
 - Hypothalamic Hamartoma
48. Right temporal PLEDs are features which of the following
- Anoxic encephalopathy
 - SSPE
 - Herpes Simplex encephalitis
 - SAH
49. Which of the following is NOT true about narcolepsy
- SOREMs
 - Cataplexy
 - Nightmare
 - RLS
50. Stereo EEG electrodes have to be implanted under the guidance of which?
- Fluoroscopy
 - Stereotaxy
 - MRI
 - DTI

Name of category: TA Neurology

ANSWER KEY

1	A	21	D	41	C
2	C	22	D	42	D
3	C	23	C	43	C
4	B	24	D	44	D
5	C	25	A	45	D
6	D	26	B	46	D
7	D	27	B	47	C
8	B	28	A	48	C
9	C	29	D	49	D
10	D	30	D	50	B
11	A	31	B		
12	D	32	C		
13	D	33	B		
14	A	34	A		
15	C	35	D		
16	C	36	D		
17	D	37	A		
18	D	38	A		
19	C	39	C		
20	C	40	A		

Key:-
Mr. 29/9/24