

ELECTROTHERAPY – I  
(LOW AND MEDIUM FREQUENCY CURRENT)  
MCQ QUESTIONS

**1. What is the international color code of the active, neutral and earthed wires?**

- a) red/brown is active, black/blue is neutral and yellow/green is earthed
- b) black/blue is active, red/brown is neutral and yellow/green is earthed
- c) red/brown is active, yellow/green is neutral and red/brown is earthed
- d) yellow/green is active, black/blue is neutral and red/brown is earthed

**2. Which of the following factor will cause electric shock?**

- a) fault such that an exposed part of the apparatus becomes live
- b) person makes contact with the live part
- c) the person is earthed
- d) all of the above

**3. Which of the following is/are the effects of electric shock?**

- a) ventricular fibrillation
- b) burn
- c) muscle rupture, avulsion fracture or paralysis
- d) all of the above

**4. What are the resistances of the dry and wet skin?**

- a) 10,000 - 60,000 ohm and 5,000 ohm respectively
- b) 100,000 - 600,000 ohm and 1,000 ohm respectively
- c) 10,000 - 60,000 ohm and 10,000 ohm respectively
- d) 10,00,000 - 60,00,000 ohm and 10,000 ohms respectively

**5. Sequence of operation of electrotherapy equipments is**

- a) M-mains and machine on, C-clock on, P-power on
- b) P-power on, M-mains and machine on, C-clock on
- c) C-clock on, P-power on, M-mains and machine on
- d) M-mains and machine on, P-power on C-clock on

**6. Burn in electrotherapy occurs due to**

- a) overdose
- b) inability to dissipate heat due to peripheral vascular disease
- c) loss of sensation
- d) **all of the above**

**7. Exacerbation of symptoms of symptoms following electrotherapy occurs due to**

—

- a) acute inflammation infection
- b) area of increased fluid tension I.e.g. edema, effusion
- c) hemorrhagic conditions
- d) **all of the above**

**8. Electrical activity in the cells of the body can be described as**

- a) Conduction current
- b) **Convection current**
- c) Both conduction and convection
- d) Radiation

**9. Electrical activity of body is lower than the electrical circuits because**

- a) **It is dependent on movement of ions**
- b) Pathways are shorter
- c) The mass of ion is smaller
- d) All of the above

**10. Usually various pulsed currents cause**

- a) **Changes in growth and repair in tissue**
- b) Chemical changes
- c) Stimulate excitable tissue
- d) Heating in the tissue

**11. Russian current is**

- a) **Medium frequency**
- b) Low frequency
- c) High frequency

d) None of the above

**12. The low frequency current is up to**

- a) 100Hz
- b) 50Hz
- c) 1000Hz
- d) None of the above

**13. The duration of condenser discharge depends on**

- a) Voltage
- b) Capacitance & resistance
- c) Intensity of current
- d) None

**14. A choke coil is used**

- a) To prevent the flow of high frequency current and allow the flow of low frequency current
- b) To even out the variations of intensity of current
- c) (a) & (b)
- d) None of the above

**15. Before applying any electrical modality, the therapist should reason out**

- a) Is this the best modality for the particular effect
- b) Is it safe?
- c) Whether the modality has the ability to achieve the intended effect?
- d) All of the above

**16. To prevent the occurrence of eddy currents**

- a) A laminated conductor is used
- b) A spherical conductor is used
- c) An insulator is used
- d) None of the above

**17. The essential for electromagnetic induction is**

- a) Movement of the conductor and magnetic lines of force relatively
- b) Magnetic lines of forces
- c) A conductor
- d) All of the above

**18.The unit of capacitance**

- a) Farad
- b) Volt
- c) Ampere
- d) None of the above

**19.Which therapeutic effect will differentiate between cold and heat treatments?**

- a) Relieving pain
- b) Reduction of spasticity
- c) Reduction of spasm
- d) None of above

**20.SD curve can**

- a) Distinguish between innervation & denervation
- b) Distinguish between innervated and denervated but cannot quantify the state of innervation
- c) Distinguish innervated and denervated and quantify the state of innervation
- d) None

**21.In EMG activities studied are**

- a) Insertional spontaneous
- b) Insertional & exert ional
- c) Spontaneous & exert ional
- d) Insertional spontaneous & exertional

**22.EMG reveals action potential of**

- a) Muscle
- b) Motor unit
- c) Nerve fiber

d) None of the above

**23. What is the optimal frequency for muscle contraction?**

- a) 10 – 20 Hz
- b) 20 – 30 Hz
- c) 30 – 40 Hz
- d) 40 – 60 Hz

**24. Which one among the following is true for voluntary and electrical stimulation?**

- a) Voluntary contraction stimulates type I but electrical stimulation stimulates type II fibres
- b) Voluntary stimulates type II but electrical stimulation type I
- c) There is gradual recruitment in electrical stimulation
- d) There is synchronized response in voluntary contraction

**25. In unilateral nerve injury, when the required current intensity for stimulation is 10-20 times of opposite side normal muscle then what might be the condition?**

- a) Neurapraxia
- b) Axonotemesis of few nerve fibers
- c) Axonotemesis of all most all nerve fibers
- d) Neurotemesis

**26. The physiological changes that occur during bio-feedback is due to**

- a) Unknown pathway
- b) known pathway
- c) Both
- d) None of the above

**27. What is the normal difference in current intensity between the two sides?**

- a) < 2 mA
- b) < 4 mA
- c) < 6 mA
- d) < 8 mA

**28. Rheobase is**

- a) Maximum tolerable current for a nerve impulse at long duration
- b) Minimum current for a nerve impulse at short duration
- c) Minimum current for a nerve impulse at long duration
- d) None of the above

**29. What might be the strength of current required to stimulate a muscle with pulse of 10ms duration**

- a) Same as required for 30 ms pulse
- b) Same as required for 1 ms pulse
- c) Twice as 30 m sec pulse
- d) Half of 1 ms pulse

**30. Benefit of Russian current over faradic stimulation is**

- a) Better pain relieving effect
- b) Covers larger stimulation area
- c) Stimulation of deep muscles
- d) Better facilitator of healing

**31. In the pre-mode application of IFT**

- a) Electrode placement is not easy
- b) Under the electrode current is more
- c) Difficult to accurately reach the affected area
- d) Strong contraction cannot be achieved

**32. Which is a normal spontaneous activity?**

- a) Fibrillation
- b) Positive sharp wave
- c) End phase spike
- d) None of the above

**33. Chronaxie for denervated muscle is**

- a) < 1 ms
- b) < 10 ms
- c) 10 ms

d) 1 ms

**34. Which electrodes are used for more accurate EMG?**

- a) Surface electrodes
- b) Needle electrode
- c) Both
- d) None

**35. Which is a better electrotherapy modality for stress incontinence?**

- a) TENS
- b) Faradic Stimulation
- c) IFT
- d) I.D.C

**36. Skin impedance is**

- a) High for shorter pulse duration
- b) High for longer pulse duration
- c) Not affected by pulse duration
- d) High for high frequency current

**37. Which among the following is correct for SD curve plotting**

- a) Constant current machine more comfortable
- b) Constant voltage machine is more comfortable
- c) Constant current comfortable & less accurate
- d) Constant voltage comfortable and less accurate

**38. Rhythmic 1 – 100 Hz interferential current may be helpful for**

- a) Muscle contraction
- b) Pain relief
- c) Reduction of edema
- d) None of the above

**39. Beyond the conduction block in case of neuropraxia what should be the difference of current between two sides?**

- a) < 2 mA
- b) < 4 mA
- c) < 6 mA
- d) < 8 mA

**40. Galvanic current is \_\_\_\_.**

- a) An alternating current
- b) A direct current
- c) Interrupted current
- d) Modified current

**41. A Beta fibers stimulated by**

- a) High TENS
- b) Low TENS
- c) Both
- d) None of the above

**42. Long duration current can have a pulse duration of**

- a) >1msec
- b) >1m sec
- c) 100 m sec
- d) 1 sec

**43. Which of the followings is an absolute contraindication for electrical stimulation**

- a) Pace maker.
- b) Insensitive skin.
- c) Unconscious patient.
- d) Ischemic heart disease.

**44. Faradic current when applied**

- a) Recruit type I fibre followed by type II
- b) Recruit type II followed by type I
- c) Recruit type I alone
- d) Recruit type II alone



**45. All electromagnetic radiations have**

- a) Same velocity
- b) Same wavelength
- c) Same frequency
- d) None of the above

**46. Due to acetylcholine hyperactivity-----**

- a) The rheobase of innervated tissue is less
- b) The rheobase of innervated tissue is less
- c) For innervated and denervated tissue it is same
- d) None of the above

**47. Electric pulse which will stimulate a nerve**

- a) Rapid rising & duration less than 1ms
- b) Slow rising & duration less than 1ms
- c) Rapid rising & duration less than 100 ms
- d) None of the above

**48. The appropriate current to know tendon rupture-----**

- a) Faradic current
- b) TENS
- c) Galvanic current
- d) None of the above

**49. Short duration currents have duration of**

- a) < 1 m sec
- b) < 1 mu sec
- c) < 10 m sec
- d) < 10 mu sec

**50. The motor point of a muscle is found at**

- a) Proximal 2/3rd and distal one third of muscle belly
- b) Proximal 1/4th with distal 3/4th of muscle belly

- c) Proximal 1/3rd and distal 2/3rd of muscle belly
- d) 50% of muscle length

**51. The low frequency current is up to**

- a) 1000Hz
- b) 50Hz
- c) 100Hz
- d) None of the above

**52. The technique to stretch adhesion in a muscle is called**

- a) Faradism under pressure
- b) Faradic foot bath
- c) Faradism under tension
- d) None of the above

**53. \_\_\_\_\_ current is used for the stimulation of innervated muscles.**

- a) Faradic
- b) Faradic type
- c) Surged faradic
- d) Interrupted galvanic

**54. Pulses of TENS are usually**

- a) Uniphasic
- b) Biphasic
- c) Biphasic with even charge
- d) Biphasic even charge with equal or unequal pulse shape in both direction

**55. Accommodation pulses can stimulate**

- a) Sensory nerve
- b) Motor nerve
- c) Muscles
- d) All of the above

**56. Faradic current is \_\_\_\_**

- a) An alternating current
- b) A direct current
- c) Interrupted current
- d) Modified current

**57. The mechanism of wound healing by electrical stimulation is supposed to be due to**

- a) Skin battery
- b) Enhanced DNA and protein synthesis
- c) The migration of epithelial and connective tissue cells
- d) All of the above

**58. The chemical burn expected to occur due to passage of DC current into the body is likely to occur at**

- a) Cathode
- b) Anode
- c) Both the electrodes
- d) Where acids are formed

**59. If DC is used for pain relief the dosage varies with**

- a) Diagnosis of the condition
- b) Skin pigmentation
- c) Polarity of electrode on treatment site
- d) All of the above

**60. How much change of action potential can trigger a depolarization**

- a) >25 mv
- b) 15 – 20 mv
- c) 5 – 10 mv
- d) 10 – 15 mv

**61. Therapeutically eddy currents is used to:**

- a) Produce heat

- b) Produce nerve stimulation
- c) Apply drugs in iontophoresis
- d) None of the above

**62. In a step transformer:**

- a) The number of turns of wire in primary coil is more than the secondary
- b) Number of turns in primary and secondary is same
- c) The number of turns of wire in secondary coil is more than the secondary
- d) None of the above

**63. The types of muscle fibres mostly activated by electrical stimulation are:**

- a) Type – I fibres
- b) Type – IIa fibres
- c) Type – IIb fibers
- d) None of the above

**64. A current that produces greater muscular hypertrophy with gain in strength is:**

- a) Direct current
- b) Faradic current
- c) Russian current
- d) Diadynamic current

**65. A person suffers from a peripheral vascular disorder of the lower limb; he also suffers osteoarthritis of knee. Which is the best electrotherapy modality of choice?**

- a) Iontophoresis
- b) Interferential therapy
- c) TENS
- d) None of the above

**66. To stretch adherent scar, the ion selected for iontophoresis is:**

- a) Magnesium
- b) Copper
- c) Chloride
- d) Zinc

**67. When the charges flow through the conductor it is known as:**

- a) Static electricity
- b) **Current electricity**
- c) Positive charge
- d) Negative charge

**68. Rheostat is a device used to regulate current by altering the:**

- a) Resistance of the current
- b) Potential in the part of the circuit
- c) **Resistance of the current or potential in the part of the circuit**
- d) None of the above

**69. When a constant current flows, the nerve adapts itself. The phenomenon called:**

- a) Adaption
- b) Accumulation
- c) **Accommodation**
- d) None of the above

**70. The nerve which arises in the axilla from the medial and lateral cords of brachial plexus with root values C5, C6, C7, C8 and T1.**

- a) **Median nerve**
- b) Radial nerve
- c) Ulnar nerve
- d) Axillary nerve

**71. The paralysis of long flexor tendons of index finger:**

- a) Ape thumb deformity
- b) **Pointing index finger**
- c) Opponens palsy
- d) Claw finger

**72. Vasodilatation:**

- a) Decrease in lumen ( diameter ) of the vessels
- b) Coagulation of the vessels

- c) Increase in lumen of the vessels
- d) None of the above

**73. Any localized area of body when subjected to pressure causes pain in a specific area is called as:**

- a) Motor unit
- b) Motor point
- c) Trigger point
- d) None of the above

**74. Low frequency current in the form of pulsed rectangular waveform through surface electrodes on the patient's skin to reduce pain:**

- a) Interferential therapy
- b) TENS
- c) Russian current
- d) None of the above

**75. SD curve shows the relationship between:**

- a) The magnitude of change of stimulus and the duration of stimulus
- b) Change of stimulation and the duration of stimulation
- c) Shape of the stimulus and magnitude of the change of stimulus
- d) None of the above

**76. An injury of ligament partial or complete is known as:**

- a) Strain
- b) Sprain
- c) Cramp
- d) None of the above

**77. A type of referred pain associated with trigger points.**

- a) Myofascial pain
- b) Referred pain
- c) Acute pain
- d) Chronic pain

**78. The study of motor unit activity is called**

- a) **Electromyography**
- b) Electroencephalography
- c) Electromyelography
- d) None of the above

**79. Quadriceps contusion is common in football and is also called**

- a) Muscle contusion
- b) Hematoma
- c) **Charley horse**
- d) None of the above

**80. Severe swelling, no pain, discoloration, no weight bearing possible, significant functional loss is seen in:**

- a) Grade 1 sprain
- b) Grade 2 sprain
- c) **Grade 3 sprain**
- d) Sprain

**81. The principles of two medium frequency currents passing through patient tissues is seen in:**

- a) TENS
- b) Russian currents
- c) **Interferential current**
- d) Rebox type current

**82. The smallest current that produces a muscle contraction if the stimulus is of infinite duration.**

- a) **Rheobase**
- b) Chronaxie
- c) Faradic and IDC
- d) None of the above

**83. Kink is seen in:**

- a) Normal innervations
- b) Complete denervation
- c) **Partial denervation**
- d) None of the above

**84. Disruption of axon and nerve sheath.**

- a) Axonotmesis
- b) **Neurotmesis**
- c) Neuropraxia
- d) None of the above

**85. Diadynamic current was introduced by,**

- a) Hoffmann
- b) **Pierre Bernard**
- c) Henry Joseph
- d) None of the above

**86. Piano playing movements of fingers with half-way between pronation and supination is a home program for**

- a) Ulnar nerve lesion
- b) Radial nerve lesion
- c) **Median nerve lesion**
- d) None of the above

**87. The arm hang by the side with shoulder in internal rotation, elbow in extension and the forearm pronated with the palm facing backwards, the so called**

- a) Erb's palsy
- b) Pointing index finger
- c) **Policeman tip position**
- d) None of the above

**88. The lower motor neuron lesion of the facial nerve and resultant paralysis of the muscles that it supplies,**

- a) Facial palsy
- b) **Bell's palsy**



- c) Bell's phenomenon
- d) None of the above

**89. Branches of facial nerve**

- a) 3
- b) 4
- c) 5
- d) 6

**90. SD curve is done only after \_\_\_\_\_ days following nerve injury.**

- a) 14
- b) 21
- c) 45
- d) None of the above

**91. The smallest particle of an element is called**

- a) The nucleus
- b) The proton
- c) The neutron
- d) An atom

**92. The electrons was discovered by,**

- a) James Chadwick
- b) J.J. Thomson
- c) Gold stein
- d) John Dalton

**93. Which is not an electrolytes**

- a) The solution of salt
- b) Acids and bases in water
- c) Alcohol
- d) Mercury

**94. Electric shock is a painful stimulation of \_\_\_\_\_ nerves.**

- a) Motor
- b) Sensory
- c) Mixed
- d) None of the above

**95. When the shock is due to connection between the live wire of the main and the earth it is called**

- a) Electric shock
- b) Earth shock
- c) Electric burn
- d) None of the above

**96. Sinusoidal currents are evenly alternating sine wave currents of \_\_\_\_\_ HZ.**

- a) 100HZ
- b) 50HZ
- c) 150HZ
- d) 50-100HZ

**97. The strength of contraction depends on,**

- a) Quantity of motor nerve activated
- b) Rate of change of current
- c) Both A and B
- d) None of the above

**98. Wallerian degeneration takes place at \_\_\_\_\_ days.**

- a) 14
- b) 21
- c) 27
- d) 7

**99. The effect and uses of TENS depends upon \_\_\_\_\_.**

- a) Gate control theory
- b) Pain modulation
- c) Both A and B
- d) None of the above

**100. Interferential currents are also known as \_\_\_\_\_ currents**

- a) **Nemec's current**
- b) Rebox – type current
- c) Russian current
- d) None of the above

**101. The smaller of the two electrodes under which greatest current density occurs or the electrode that is used to drive ions into the tissues.**

- a) **Active electrode**
- b) Passive electrode
- c) Ground electrode
- d) Needle electrode

**102. \_\_\_\_\_ is produced as a result of interference of two currents.**

- a) **Beat frequency**
- b) Low frequency
- c) Medium frequency
- d) None of the above

**103. The technique which is used to accurately measure, process and feedback some reinforcing information via auditory or visual signals by electronic device.**

- a) EMG
- b) **Bio- feedback**
- c) EMG bio- feedback
- d) None of the above

**104. Process or act of neutralizing the cell membrane's resting potential is called**

- a) Repolarization
- b) **Depolarization**
- c) Resting state
- d) None of the above

**105. Medium frequency currents are currents whose frequency falls between the ranges of**

- a) 1000 to 10000HZ
- b) 1000 to 1100HZ
- c) 1000 to 15000HZ
- d) None of the above

**106. The vessel in which the electrolysis is carried is called**

- a) Voltmeter
- b) Ammeter
- c) Mill ammeter
- d) Milliamperemeter

**107. Two cells by virtue of which each opposes any change in the strength of current flowing through the other by developing an induced EMF it is called**

- a) Self induction
- b) Mutual induction
- c) Both A and B
- d) None of the above

**108. An electric device which is used for changing the AC voltage.**

- a) A condenser
- b) A transformer
- c) A capacitor
- d) None of the above

**109. Cuts and lacerations over the neck of fibula causes injury to \_\_\_\_\_ nerve**

- a) Sciatic nerve
- b) Popliteal nerve
- c) Lateral popliteal nerve
- d) Common peroneal nerve

**110. Which muscle is supplied by axillary or circumflex nerve (root value C5)**

- a) Biceps
- b) Deltoid
- c) Triceps

d) Pectoralis major

**111. The fuse in a power circuit should break**

- a) neutral wire
- b) live wire
- c) both live and neutral wire
- d) none of the above

**112. The switches in the apparatus should break**

- a) the neutral wire
- b) the live wire
- c) both live and neutral wire
- d) none of the above

**113. Rectification of a circuit is achieved using**

- a) diode valve
- b) rheostat
- c) transformer
- d) capacitor

**114. The low frequency currents have a frequency of**

- a) 50 hz
- b) 100 -150 hz
- c) 1-100 hz
- d) none of the above

**115. A current that produces greater muscular hypertrophy with gain in strength is**

- a) direct current
- b) faradic current
- c) russian current
- d) diadynamic current

**116. The minimum resistance of skin is around**

- a) 1000 micron

- b) 3200 micron
- c) 5000 micron
- d) none of the above

**117. The state of decreased excitability of a nerve the anode is termed as**

- a) an electronus
- b) catelectonus
- c) depolarization
- d) repolarization

**118. The shape of the curve in strength duration curve indicates**

- a) the site of lesion
- b) onset
- c) proportions of denervation
- d) all of the above

**119. When a healthy innervated muscle is stimulated with an electric current, we stimulate the**

- a) the neurolemma of the axon
- b) the sarcolemma of the muscle
- c) the neuromuscular junction
- d) all the above

**120. Conventional tens is**

- a) high intensity, low frequency stimulation
- b) low intensity, low frequency stimulation
- c) high intensity, high frequency stimulation
- d) high frequency, low intensity stimulation

**121. Which one or the following has an aesthetic effect**

- a) high voltage pulsed current
- b) continuous galvanic current
- c) diadynamic current
- d) russian currents

**122. To stretch adherent scar, the ion selected for iontophoresis is**

- a) magnesium
- b) copper
- c) chloride
- d) zinc

**123. Which of the ions delivered through iontopores is can be used in the treatment of calcific deposits**

- a) zinc
- b) hyaluronidase
- c) chloride
- d) acetate

**124. In case of diffuse area of pathology, the ift mode selected is**

- a) scanning mode
- b) frequency sweep mode
- c) quadripolar mode
- d) none of the above

**125. In order to produce muscle contraction the frequency of ift current selected is**

- a) 1-10 hz
- b) 1-100hz
- c) 80-150hz
- d) none of the above

**126. A capacitor is a device for**

- a) storing an electrical charge
- b) stepping up voltage
- c) producing magnetic field
- d) none of the above

**127. Which of the following situations would be contraindicated when using tens**

- a) use over an arthritic joint

- b) use during labor and delivery
- c) use over a pregnant uterus
- d) use to diminish phantom limb sensation

**128. A patient ambulates outside rehabilitation hospital as a part of a therapy session. the therapist monitors the patient closely during the session due to extreme heat and humidity what is the primary mode of heat loss during exercise**

- a) conduction
- b) convection
- c) evaporation
- d) radiation

**129. Which of the following statements regarding effects of direct current is false**

- a) it causes excitation of peripheral nerves
- b) it causes alteration in protein synthesis
- c) it causes smooth muscle contraction
- d) it causes change in thermal and chemical balance of tissues

**130. The medium frequency currents have a frequency of**

- a) 1-1000 hz
- b) above 1000 hz
- c) above 1000 hz and below 10,000hz
- d) none of the above

**131. The rate of conduction of impulses through the a a fiber is**

- a) 15m/s
- b) 5m/s
- c) 1m/s
- d) m/sec

**132. A current that produces greater muscular hypertrophy with gain in strength is**

- a) direct current
- b) faradic current
- c) Russian current



d) diadynamic current

**133. The smallest current that produces a muscle contraction when the stimulus is of infinite duration is**

- a) chronaxie
- b) **rheobase**
- c) micro current
- d) pulse duration

**134. The resting membrane potential of a nerve cell is**

- a) **-70 mv**
- b) -50 mv
- c) -120 mv
- d) 1 mv

**135. The constant current stimulator is**

- a) **more accurate**
- b) more comfortable
- c) accurate as well as comfortable
- d) none of the above

**136. The device used to regulate current is**

- a) semiconductor
- b) triode valve
- c) **rheostat**
- d) capacitor

**137. The amount of heat produced during treatment with an electric current increases if**

- a) **skin impedance is high**
- b) the treatment time is of a short interval
- c) the total current is not high
- d) none of the above

**138. Which of the following is a true sentence**

- a) after a severe shock there is a paralysis of the respiratory muscles
- b) **hot drinks should be avoided following a shock**
- c) after a severe shock there is a rise in blood pressure
- d) shocks are more severe with direct currents

**139. The device that measures electrical resistance is**

- a) **ohmmeter**
- b) potentiometer
- c) voltmeter
- d) transformer

**140. As the temperature of the conductor increases the resistance to flow of electron**

- a) doubles
- b) **decreases**
- c) remains the same
- d) increases

**141. Emf of a cell can be measured by**

- a) wheatstone bridge
- b) **potentiometer**
- c) voltmeter
- d) ammeter

**142. The instrument used to measure current intensity is**

- a) wheatstone bridge
- b) potentiometer
- c) voltmeter
- d) **ammeter**

**143. At the neuromuscular junction the chemical released is**

- a) calcium
- b) prostaglandin

- c) **acetylcholine**
- d) adrenaline

**144. The myelinated nerve fibers usually have diameter above**

- a) **2 micro m**
- b) 5 micro m
- c) 7 micron m
- d) 3 micron m

**145. Wallerian degeneration is completed by**

- a) 20 days
- b) **14 days**
- c) 7 days
- d) 1 month

**146. The mean dielectric constant value of body tissues is**

- a) 50
- b) 70
- c) **80**
- d) none of the above

**147. In a step transformer**

- a) the number of turns of wire in primary coil is more than the secondary
- b) number of turns of wire in primary and secondary is same
- c) **the number of turns of wire in secondary coil is more than primary**
- d) none of the above

**148. Lenz law deal with**

- a) inductance of the conductor
- b) rate of change of magnetic field
- c) **direction of the induced emf**
- d) direction of current flow

**149. Joules law expresses the relation between**

- a) current, voltage and time
- b) **current, resistance and time**
- c) current, power and resistance
- d) current, emf and time

**150. High inductance can be incorporated into a conducting coil by**

- a) using many turns of wire
- b) placing the turns closer
- c) winding the coil into a soft iron core
- d) **all of the above**

**151. The dielectric constant of which of following is right**

- a) fatty tissue
- b) skin
- c) bones
- d) **muscles**

**152. Which of the following statements regarding didynamic current is false**

- a) it is sine wave at a frequency of 100 hz
- b) it is either full wave or half wave rectified
- c) **it is a biphasic pulsed current**
- d) it is a unidirectional current flow with long pulse duration

**153. The term russian current applies to stimulators**

- a) which produces an asymmetric monophasic pulse from
- b) which have a ramp up and ramp down mode
- c) **which modulate a continuous sine wave**
- d) which produces sine wave with full wave rectification

**154. In monopolar technique the dispersive electrode**

- a) **minimizes current density**
- b) maximizes current density
- c) increases the resistance
- d) increase the intensity

**155. A therapist applies an electrical stimulation unit to a patient rehabilitating from a**

- a) low volt
- b) high volt
- c) russian
- d) **interferential**

**156. A physical therapist treats a patient using tens. which condition would not be considered contraindication for tens**

- a) placement over carotid sinus
- b) placement over a pregnant
- c) **use on a patient with a cardiac pacemaker**
- d) use during labor and delivery

**157. Energy required to change the state of a substance is**

- a) kinetic energy
- b) potential energy
- c) **latent heat**
- d) chemical energy

**158. A choke coil is used in a circuit**

- a) to supply uniform current flow
- b) to allow the flow of low frequency , and prevent the flow of high frequency currents
- c) **both a and b**
- d) none of the above

**159. Transmission of heat due to convection primarily takes place in**

- a) solids
- b) **fluids**
- c) metals
- d) atoms

**160. The law that tells about the direct relationship of the metabolic rate to increase in tissue temperature is**

- a) joules law
- b) van't hoff's law
- c) grotthus law
- d) eddy's law

**161. GERMANIUM IS AN EXAMPLE OF**

- a. Conductor
- b. Non conductor
- c. Pure semi conductor
- d. None of the above.

**162. Latent heat to convert 1 gm of ice at 0 degree Celsius to 1 gm of wate at 0 degree Celsius.**

- a. 386 joules
- b. 336 joules
- c. 363 joules
- d. 368 joules

**163. Electric lines of force invented by**

- a. Joule
- b. Coulomb
- c. Michael Faraday
- d. George simon ohm

**164. Capacitor is a device to**

- a. Regulate current
- b. Alter flow of current
- c. Restrict high voltage
- d. Store charges

**165. Ionotophoresis works on the principle of**

- a. Le duc's principle
- b. Ohm's law
- c. Joule's law
- d. Faraday's law

**166. Transformer works on the principle of**

- a. Self induction
- b. Mutual induction
- c. Thermal induction
- d. None of the above

**167. Which of the statement about auto transformer is wrong**

- a. Huge step up transformer
- b. Small step up transformer
- c. Does not render earth free current
- d. Works on the principle of electromagnetic induction

**168. Magnetostriction is associated with**

- a. Choke
- b. Transformer
- c. Triode valve
- d. Metal valve rectifier

**169. Low frequency current frequency ranges between**

- a. 1 to 100 Hz
- b. 100 to 1000 Hz
- c. 100 to 10000 Hz
- d. 1 to 1000 Hz

**170. Diadynamic currents was introduced by**

- a. Michael faraday
- b. Le duc
- c. Benjamin franklin
- d. Pierre Bernard

**171. Phenomenon of nerve adapting itself is known as**

- a. Stimulation
- b. Contraction
- c. Accommodation
- d. Inhibition

**172. Which statement about sinusoidal currents is true**

- a. Low intensity long duration current
- b. High intensity short duration current
- c. Short duration direct current
- d. Evenly alternating current

**173. Which nerve is the musician's nerve**

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

**174. Cock up splint used for**

- a. Erb's palsy
- b. Foot drop
- c. Wrist drop
- d. Opponen's palsy

**175. Carpal tunnel syndrome associated with**

- a. Common peroneal nerve
- b. Median nerve
- c. Radial nerve
- d. Ulnar nerve

**176. Ionotophoresis is based on the principle of**

- a. Le duc's principle
- b. Lenz law
- c. Faradays law
- d. Electromagnetic induction

**177. Metal rectifier converts**

- a. DC current to AC current
- b. AC current to DC current



- c. Low frequency to high frequency currents
- d. High frequency to low frequency currents

**178. Smart Bristow coil produces**

- a. Galvanic current
- b. Sinusoidal current
- c. Russian current
- d. Faradic current

**179. Deltoid inhibition is given with**

- a. a galvanic current
- b. Russian current
- c. modified direct current
- d. faradic current

**180. Smoothing circuit includes**

- a. Choke
- b. Condenser
- c. Both a & b
- d. None of the above

**181. Therapeutically eddy current is used to**

- a. Produce heat
- b. Produce nerve stimulation
- c. Apply drugs
- d. None of the above

**182. Current which is used for reducing oedema**

- a. Galvanic current
- b. Electrotonus
- c. Faradic type current
- d. Faradism under pressure

**183. Contra-indications for galvanic current**

- a. Thrombosis
- b. Cardiac pacemaker
- c. Dermatological conditions
- d. All of the above

**184. Types of muscle fiber mostly activated by electrical stimulation are**

- a. Type I fibers
- b. Type IIa fibers
- c. Type IIb fibers
- d. None of the above

**185. Frequency Of faradic current**

- a. 100-150Hz
- b. 50-100Hz
- c. 70-100Hz
- d. 100-130Hz

**186. The duration of condenser discharge depends on ----**

- a. Capacitance & resistance
- b. Intensity of current
- c. Voltage
- d. None

**187. \_\_\_\_\_ current is used for the stimulation of innervated muscles.**

- a. Faradic
- b. Faradic type
- c. Surged faradic
- d. Interrupted galvanic

**188. Short duration currents have duration of**

- a. < 1 m sec
- b. < 1 mu sec
- c. < 10 m sec

d. < 10 mu sec

**189. Faradic current is \_\_\_\_**

- a. An alternating current
- b. A direct current
- c. Interrupted current
- d. Modified current

**190. The name of the coil used to produce faradic current in past was**

- a. Choke coil
- b. Smart bristow faradic coil
- c. Induction coil
- d. None of above

**191. Nerve accommodation can be avoided by -----**

- a. Surging the current
- b. Using varying current
- c. Using a varying current that rises and falls suddenly
- d. None of the above

**192. Russian current is**

- a. Low frequency
- b. Medium frequency
- c. High frequency
- d. None of the above

**193. The electrode which can easily depolarize the membrane of a nerve is \_\_\_\_**

- a. Positively charged
- b. Negatively charged
- c. Called indifferent electrode
- d. None of the above

**194. The motor point of a muscle is found at**

- a. Proximal 2/3rd and distal one third of muscle belly

- b. Proximal 1/4th with distal 3/4th of muscle belly
- c. Proximal 1/3rd and distal 2/3rd of muscle belly
- d. 50% of muscle length

**195. Non-myelinated fiber is**

- a. A Alpha fiber
- b. A Beta fiber
- c. A Gamma fiber
- d. C fiber

**196. Galvanic current is \_\_\_\_.**

- a. An alternating current
- b. A direct current
- c. Interrupted current
- d. Modified current

**197. Due to acetylcholine hyperactivity-----**

- a. The rheobase of innervated tissue is less
- b. The rheobase of innervated tissue is less
- c. For innervated and denervated tissue it is same
- d. None of the above

**198. A Beta fibers stimulated by**

- a. High TENS
- b. Low TENS
- c. Both
- d. None of the above

**199. Nociceptors are stimulated with a current intensity**

- a. More than that stimulates sensory nerve
- b. More than that stimulate a motor nerve
- c. More than that cause tingling
- d. Less than that requires to produce a twitch

**200. All electromagnetic radiations have**

- a. Same velocity
- b. Same wavelength
- c. Same frequency
- d. None of the above

**201. What is the optimal frequency for muscle contraction?**

- a. 10 – 20 Hz
- b. 20 – 30 Hz
- c. 30 – 40 Hz
- d. 40 – 60 Hz

**202. The chemical burn expected to occur due to passage of DC current into the body is likely to occur at**

- a. Cathode
- b. Anode
- c. Both the electrodes
- d. Where acids are formed

**203. The physiological changes that occur during bio-feedback is due to**

- a. Unknown pathway
- b. known pathway
- c. Both
- d. None of the above

**204. Which is a better electrotherapy modality for stress incontinence?**

- a. TENS
- b. Faradic Stimulation
- c. IFT
- d. I.D.C

**205. Which electrodes are used for more accurate EMG?**

- a. Surface electrodes
- b. Needle electrode
- c. Both
- d. None

**206. Benefit of Russian current over faradic stimulation is**

- a. Better pain relieving effect
- b. Covers larger stimulation area
- c. Stimulation of deep muscles
- d. Better facilitator of healing

**207. The rheobase is**

- a. Unchanged in a denervated muscle
- b. Increases in a denervated muscle
- c. Decreases in a denervated muscle
- d. First increase then decrease

**208. Skin impedance is**

- a. High for shorter pulse duration
- b. High for longer pulse duration
- c. Not affected by pulse duration
- d. High for high frequency current

**209. SD curve can**

- a. Distinguish between innervation & denervation
- b. Distinguish between innervated and denervated but cannot quantify the state of innervation
- c. Distinguish innervated and denervated and quantify the state of innervation
- d. None

**210. EMG reveals action potential of**

- a. Muscle
- b. Motor unit
- c. Nerve fiber
- d. None of the above

**211. Deltoid inhibition was caused by -----**

- a. fracture

- b. dislocation
- c. ligament tear
- d. all of the above

**212. Faradiac current frequency range between -----**

- a. 10hz to 20hz
- b. 20hz to 30hz
- c. 50hz to 100hz
- d. none of these

**213. Faradiac foot bath applied in the following condition-----**

- a. plantar fasciitis
- b. metatarsalgia
- c. fracture of foot
- d. all of the above

**214. SD CURVE denotes the -----**

- a. strength duration curve
- b. strength density
- c. straight denervation curve
- d. none of these

**215. TENS are of following types-----**

- a. high,low ,medium
- b. high,low,burst tens
- c. short and long
- d. none

**216. Potentiometer also known as -----**

- a. potential difference
- b. potential divider
- c. valve potential
- d. none

**217. The fuse in a power circuit should break -----**

- a. the neutral wire
- b. the live wire
- c. both live and neutral wire
- d. none of the above

**218. Rectification of a circuit is achieved using -----**

- a. diode valve
- b. rheostat
- c. transformer
- d. capacitor

**219. The unknown resistance of a circuit can be known by----**

- a. potential divider
- b. wheat stone bridge
- c. ammeter
- d. none

**220. TENS is a**

- a. low frequency current
- b. micro current
- c. high frequency current
- d. medium frequency current

**221. Therapeutically eddy current is used to**

- a. produce heat
- b. produce nerve stimulation
- c. apply drugs in iontophoresis
- d. none

**222. Resting membrane potential of the skeletal muscle cell is**

- a. -60m
- b. -70mv



- c. -90mv
- d. none

**223. The low frequency current have a frequency of**

- a. 50HZ
- b. 100-150HZ
- c. 1-1000HZ
- d. NONE

**224. The minimum resistance of skin is around**

- a. 1000 U
- b. 3200 U
- c. 5000 U
- d. none

**225. The shape of the curve is SD CURVE indicates**

- a. The site of lesion
- b. Onset
- c. proportion of denervation
- d. all of above

**226. The quantity of ions introduced across the body surface by iontophoresis is directly proportional to**

- a. current intensity
- b. current density
- c. duration of current
- d. concentration of ions in solution

**227. Which of the following statements regarding diadynamic current is false**

- a. it is sine wave at a frequency of 100HZ
- b. it is either full wave or half wave rectified
- c. it is a biphasic pulsed current
- d. it is a unidirectional current flow with long pulse duration.

**228. The term russian current applies to stimulator:**

- a. Which produces an asymmetric monophasic pulse from
- b. Which have a ramp up and ramp down mode
- c. Which modulate a continuous sine wave
- d. Which produce sine wave with full wave rectification

**229. Which of the following statements regarding effects of direct current is false**

- a. It causes excitation of peripheral nerves
- b. It causes alteration in protein synthesis
- c. It causes smooth muscle contraction
- d. It causes change in thermal and chemical balance of tissues

**230. In mono-polar technique the dispersive electrode**

- a. minimise current density
- b. maximise current density
- c. Increases the resistance
- d. Increases the intensity

**231. The reaction seen under the cathode when a direct current is passed through it is**

- a. Acidic reaction
- b. Neutral reaction
- c. Alkaline reaction
- d. No reaction

**232. The medium frequency currents have a frequency of**

- a. 1 -1000hz
- b. above 10000hz
- c. above 1000hz and below 10000hz
- d. none

**233. Which of the following statements regarding IFT is true**

- a. Bipolar method does not provide endogenous IF current
- b. In quadripolar tech the current at the electrode skin interference is modulated
- c. In quadripolar approach the stimulus is stronger on the skin
- d. Bipolar method is difficult and time consuming

**234. In cases of diffuse area of pathology the IFT mode selected is**

- a. Scanning mode
- b. Frequency sweep mode
- c. Quadripolar mode
- d. None

**235. In order to produce muscle contraction the frequency of IFT current selected is**

- a. 1-10HZ
- b. 1-100HZ
- c. 80-150HZ
- d. NONE

**236. Thermal conductivity of which of the following is least**

- a. muscle
- b. skin
- c. ligaments
- d. fat

**237. A capacitor is a device for**

- a. Storing an electrical charge.
- b. stepping up voltage
- c. producing magnetic field
- d. none

**238. Which of the following situations would be contraindicated when using transcutaneous electrical nerve stimulation?**

- a. Use over an arthritic joint
- b. Use during labor and delivery
- c. Use over a pregnant uterus

d. Use to diminish phantom limb sensation

**239. When two opposite phases are contained in a single pulse the wave form is termed as**

- a. Monophase
- b. Biphase
- c. Asymmetric
- d. Symmetric

**240. The rate of conduction of impulses through the A fibre is :**

- a. 15 m/s
- b. 5m/s
- c. 1m/s
- d. m/s

**241. The circuit used to produce Faradiac type current is:**

- a. multivibrator circuit
- b. surger circuit
- c. voltage halving circuit
- d. anode circuit

**242. The state of decreased excitability of a nerve near the anode is termed as**

- a. anelectronus
- b. catelectronus
- c. depolarization
- d. repolarization

**243. The types of muscle fibres mostly activated by electrical stimulation are**

- a. TYPE-I FIBRES
- b. TYPE-IIa, fibres
- c. TYPE-IIb, fibres
- d. None

**244. Which of the following has the anaesthetic effect**

- a. high voltage pulsed current
- b. continuous galvanic current
- c. diadynamic current
- d. russian currents

**245. Which of the ions delivered through iontophoresis is can be used it the treatment of calcific deposits**

- a. zinc
- b. hyaluronidase
- c. chloride
- d. acetate

**246. Patient having cardiac pacemaker suffering from left shoulder pain can be treated with**

- a. TENS
- b. IFT
- c. US
- d. none

**247. Energy required to change the state of substance is called as**

- a. kinetic energy
- b. latent heat
- c. potential energy
- d. chemical energy

**248. Most common method of electrode placement for pain relief with TENS is**

- a. over the site of pain
- b. proximal to the site of pain
- c. over same dermatomal distribution
- d. distal to the site of pain

**249. The lower motor neuron lesion of the facial nerve and resultant paralysis of the muscles that it supplies,**

- a. Facial palsy

- b. Bell's palsy
- c. Bell's phenomenon
- d. None of the above

**250. The types of muscle fibres mostly activated by electrical stimulation are:**

- a. Type – I fibres
- b. Type – IIa fibres
- c. Type – IIb fibers
- d. None of the above

**251. The low frequency currents have a frequency of**

- a. 50 Hz
- b. 100 to 150 Hz
- c. 1 to 1000 Hz
- d. None of the above

**252. The smallest current that produces a muscle contraction when the stimulus is of infinite duration is**

- a. Microcurrent
- b. Pulse duration
- c. Rheobase
- d. Chronaxie

**253. Faradic current is**

- a. A direct current
- b. An alternating current
- c. Modified current
- d. Multiphasic current

**254. Faradic current is produced by using**

- a. Induction coil
- b. Choke coil
- c. Smart bristow faradic coil
- d. None of the above

**255. The resting membrane potential of the skeletal muscle is**

- a. - 60 mv
- b. -70 mv
- c. - 90 mv
- d. -100 mv

**256. Rectification of a circuit is achieved using**

- a. Diode valve
- b. Transformer
- c. Capacitor
- d. Transformer

**257. Russian current is a**

- a. Low frequency current
- b. High frequency current
- c. Medium frequency current
- d. None of the above

**258. Nerve accommodation can be avoided by**

- a. Using Russian current
- b. Using surged faradic current
- c. Using a varying current
- d. Using faradic current

**259. Conventional TENS is**

- a. High intensity, low frequency stimulation
- b. Low intensity, low frequency stimulation
- c. High intensity, high frequency stimulation
- d. High frequency ,low intensity simulation

**260. Which of the following element is used in the treatment of hyperhidrosis in iontophoresis**

- a. Tap water

- b. Zinc
- c. Chloride
- d. Copper

**261. Kink in SD curve is seen in**

- a. Innervated muscle
- b. Denervated muscle
- c. Partially innervated muscle
- d. All muscles

**262. Saturday night palsy occurs in**

- a. Ulnar nerve compression
- b. Radial nerve compression
- c. Median nerve compression
- d. Axillary nerve compression

**263. LMN lesion of facial nerve is known as**

- a. Bell's palsy
- b. Erbs palsy
- c. Klumpke palsy
- d. Cerebral palsy

**264. Insertional activity during EMG procedure for normal muscle lasts for**

- a. 0.5 to 1 sec
- b. 10 to 100 sec
- c. 5 to 10 sec
- d. Throughout the procedure

**265. To stimulate the lumbricals in faradic foot bath**

- a. One electrode is placed under the heel and the other under the metatarsal heads
- b. Both under the heels
- c. Both under the metatarsal heads
- d. Place one electrode on each side of the foot at the level of metatarsal shafts



**266. Electrical stimulation of muscle combined with compression and elevation of the limb, used to increase venous and lymphatic drainage to relieve edema is known as**

- a. Faradism under pressure
- b. Faradic foot bath
- c. Faradic stimulation
- d. Elevation under pressure

**267. Position of patient for treatment of quadriceps inhibition is**

- a. Half lying position with knee in flexed 20–30 degree
- b. High sitting position
- c. Lying position
- d. Crook lying position

**268. The ratio of the time during which there is stimulation (contraction) to the time during which there is no stimulation (no contraction) during treatment using Russian current is known as**

- a. On/off ratio
- b. Ramp-up and down
- c. Bursts frequency
- d. Ramp-up and down

**269. Ape thumb deformity is seen in**

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

**270. The unit of capacitance is**

- a. Ampere
- b. Coulomb
- c. Farad
- d. Ohm

**271. Which one of the following electro diagnostic tool is not used for muscle pathology**

- a. SD curve
- b. FG test
- c. EMG
- d. EEG

**272. The point where the nerve enter the muscle or impulses have maximum contraction is known as**

- a. Motor unit
- b. Motor point
- c. Motor unit potential
- d. Tigger point

**273. Biofeedback works on which principle?**

- a. Middaugh's conceptual framework
- b. Melzack and wall theory
- c. Joules law
- d. Piezo electric effect

**274. Anodal galvanism during iontophoresis produces**

- a. Acidic reaction
- b. Alkaline reaction
- c. No reaction
- d. Both a and b

**275. Which one of the following is not a property of magnetic lines of force**

- a. Travel from north to south
- b. They attempt to take the shortest route
- c. They repel one another
- d. They intersect each other

**276. Total resistance (R)=  $R_1 + R_2 + R_3$  in an electrical circuit when**

- a.  $R_1$ ,  $R_2$  &  $R_3$  are connected in series
- b.  $R_1$ ,  $R_2$  &  $R_3$  are connected in parallel

- c. R2 & R3 are connected in series and R1 in parallel
- d. Both a and b

**277. Which law states that the magnitude of an electric current varies directly with the emf and inversely with the resistance**

- a. Ohm's law
- b. Coulomb's law
- c. Joules law
- d. Inverse square law

**278. Circular current produced in any conductor lying within a varying magnetic field due to an induced EMF is known as**

- a. Eddy currents
- b. Alternating current
- c. Direct current
- d. Diadynamic current

**279. Which type of current is used in the treatment of deltoid inhibition**

- a. Faradic current
- b. Surged faradic current
- c. Galvanic current
- d. Russian current

**280. Aeroplane splint is given in**

- a. Erb's palsy
- b. Saturday night palsy
- c. Crutch palsy
- d. Bell's palsy

**281. Cockup splint is given for**

- a. Policeman tip hand
- b. Wrist drop
- c. Claw hand
- d. Pointing index finger

**282. Which one of the following is not indicated for faradic foot bath**

- a. Metatarsalgia
- b. Flat foot
- c. Heel pain
- d. Open wounds

**283. Which one of the following is not a general contraindication for electrical stimulation**

- a. Fever
- b. Cardiac pacemaker
- c. Unconscious patient
- d. Muscle weakness

**284. Skin resistance lowering tray does not have**

- a. Soap
- b. Cotton
- c. Saline water
- d. Mackintosh sheet

**285. Preparation of apparatus does not involve which one of the following procedure**

- a. Checking whether all the knobs are at zero
- b. Checking whether the fuse is present and is not blown
- c. Checking the insulation of the wire or the leads
- d. Cleaning the apparatus with wet cloth

**286. According to Seddon classification a nerve injury involve complete disruption of axon and the nerve sheath is termed as**

- a. Neuropraxia
- b. Axonotmesis
- c. Neurotmesis
- d. Both a and c

**287. Which of the following are myelinated fibers**

- a. A fibers
- b. B fibers
- c. C fibers
- d. Both a & b

**288. Filter is the material which:**

- a. Allows all the waves to pass
- b. Allows selective waves to pass
- c. Does not allow waves to pass
- d. None of above

**289. Medium frequency current have a frequency of**

- a. 1-100 Hz
- b. 100-1000 Hz
- c. 1000 - 10000 Hz
- d. More than 10000 Hz

**290. Skin impedance is calculated as**

- a.  $Z = \frac{1}{2} \pi f c$
- b.  $Z = \frac{1}{2} \pi c$
- c.  $Z = \pi f c$
- d.  $Z = f c$

**291. Nociceptive fibres are stimulated when a frequency of ----- is applied**

- a. 90 to 150 Hz
- b. 10 to 150 Hz
- c. 10 to 50 Hz
- d. 90 to 100 Hz

**292. What is beat frequency when channel 1 = 4,000 Hz and channel 2= 4,150 Hz**

- a. 150 Hz
- b. 4000 Hz
- c. 50 Hz

d. 8,150 Hz

**293. Motor unit comprises of**

- a. All the Motor fibres of a nerve
- b. All the muscle fibres of a muscle
- c. One AHC, one axon, its NMJ and all the muscles innervated by the axon
- d. The point at which the nerve enters the muscle

**294. Beat frequency in IFT is produced by**

- a. The interference of two medium-frequency currents inside the tissue
- b. The interference of two low-frequency currents inside the tissue
- c. The interference of high-frequency currents inside the tissue
- d. The interference of one medium and one low frequency currents inside the tissue

**295. Interferential therapy is not used for**

- a. Pain relief
- b. Muscle stimulation
- c. Increased local blood flow
- d. Wound healing

**296. Vector current (dynamic) field is produced when the interferential field rotates in**

- a. 45 degree
- b. 90 degree
- c. 60 degree
- d. 180 degree

**297. The sum of electrical potential of all the muscle fibers present in the single motor unit is called**

- a. Motor unit action potential
- b. Resting membrane potential of muscle fibre
- c. Action potential
- d. Resting membrane potential of nerve fibre

**298. The relationship between the magnitude of the change of stimulus and the duration of the stimulus during electrical stimulation is represented by**

- a. SD curve
- b. EMG graph
- c. FG test
- d. NCV studies

**299. The potential difference between two points in a circuit is measured using**

- a. Voltmeter
- b. Ammeter
- c. Rheostat
- d. Capacitor

**300. Which of the following measure is not taken in preventing shock in physiotherapy department**

- a. Using vinyl flooring in the department
- b. Use of two pin power cable for all the equipment
- c. Ensuring earthing (earth connection) in the department
- d. Ensuring good insulation for all the leads used.

