JEMAS(PG)-2022 QB No: 2102900001

Subject: Master of Physiotherapy (MPT- Sports Medicine/ Neurology/ Orthopaedics)

Duration: 90 minutes **No of MCQ: 100** **Full Marks: 100**

Instructions

1. All questions are of objective type having four answer options for each, carry 1 mark each and only one option is correct. In case of incorrect answer or any combination of more than one answer, ¼ mark will be deducted.
2. Questions must be answered on OMR sheet by darkening the appropriate bubble marked A, B, C, or D. Question booklet series code (A, B, C, or D) must be properly marked on the OMR.
3. Use only **Black/Blue ball point pen** to mark the answer by complete filling up of the respective bubbles.
4. Write question booklet number and your roll number carefully in the specified locations of the **OMR**. Also fill appropriate bubbles.
5. Write your name (in block letter), name of the examination center and put your full signature in appropriate boxes in the OMR.
6. The OMR is liable to become invalid if there is any mistake in filling the correct bubbles for question booklet number/roll number or if there is any discrepancy in the name/ signature of the candidate, name of the examination center. The OMR may also become invalid due to folding or putting stray marks on it or any damage to it. The consequence of such invalidation due to incorrect marking or careless handling by the candidate will be sole responsibility of candidate.
7. Candidates are not allowed to carry any written or printed material, calculator, pen, log-table, wristwatch, any communication device like mobile phones etc. inside the examination hall. Any candidate found with such items will be **reported against** and his/her candidature will be summarily cancelled.
8. Rough work must be done on the question paper itself. Additional blank pages are given in the question paper for rough work.
9. Hand over the OMR to the invigilator before leaving the Examination Hall.

Group-A

1. Origin of bone is from:
   (A) Ectoderm.
   (B) Mesoderm.
   (C) Endoderm.
   (D) All of the above.

2. Acute osteomyelitis is commonly caused by:
   (A) Staph aureus.
   (B) S.pyogenes.
   (C) H.influenae.
   (D) Salmonella.

3. In Potts spine the disease starts in the:
   (A) Intervertebral DISK.
   (B) Anterior vertebral margin.
   (C) Posterior vertebral margin.
   (D) Paravertebral soft tissue.

4. Osteoid osteoma originates from:
   (A) Periosteum.
   (B) Cortex.
   (C) Medullary cavity.
   (D) All of the above.

5. Bone metastasis can be best evaluated by:
   (A) X ray.
   (B) 99m Tc bone scan.
   (C) 111 Indium scan.
   (D) Cal-alkaline phosphatase evaluation.

6. A green stick fracture:
   (A) Occurs in old age.
   (B) Doesn't occur in child.
   (C) Spiral fracture of tubular bone.
   (D) Fracture in part of cortex.

7. The single most important factor in fracture healing is:
   (A) Correct bone alignment.
   (B) Accurate reduction.
   (C) Immobilization.
   (D) Organization of clot.

8. Perthes disease is common to age group of:
   (A) 1 – 5 years.
   (B) 6 – 10 years.
   (C) 11 – 15 years.
   (D) 16 – 20 years.

9. The sequestrum in x-ray appears:
   (A) Dense.
   (B) Light.
   (C) Isodense as surrounding bone.
   (D) Any of the above.

10. First bone to ossify in foetal life is:
   (A) Femur.
   (B) Tibia.
   (C) Clavicle.
   (D) Sternum.

11. The joint most likely to have recurrent dislocation is.
   (A) Ankle.
   (B) Knee.
   (C) Shoulder.
   (D) Patella.

12. Radial nerve palsy may occur in fracture of humerus involving:
   (A) Sugical neck.
   (B) Shaft.
   (C) Lower end.
   (D) All of the above.

13. Cubitus valgus of elbow commonly follows freacture of:
   (A) Lateral condyle.
   (B) Medial condyle.
   (C) Capitalum.
   (D) Lower third of humerus.

14. The carpal bone most commonly fractured is:
   (A) Triquetrum.
   (B) Hamate.
   (C) Capitate.
   (D) Scaphoid.

15. The most common injury following pelvic fracture is of:
   (A) Bladder.
   (B) Urethra.
   (C) Rectum.
   (D) Vagina.

16. Normal neck-shaft angle of femur is:
   (A) 90 degree.
   (B) 120 degree.
   (C) 150 degree.
   (D) 170 degree.

17. Chronaxie for denervated muscle:
    (A) < 1ms.
    (B) < 10ms.
    (C) >10ms.
    (D) >1ms.

18. Non myelinated fibre is:
    (A) An Alpha.
    (B) A Beta.
    (C) A Gamma.
    (D) C.

19. Accommodation pulse can stimulate:
    (A) Sensory nerve.
    (B) Motor nerve.
    (C) Muscle.
    (D) All of the above.

20. IRR of 1000 nm wave length can penetrate upto:
    (A) Epidermis.
    (B) Dermis.
    (C) Muscle.
    (D) Bones.

21. Epidermal transit time is about:
    (A) 30days.
    (B) 6days.
    (C) 21days.
    (D) 28days.

22. Region of thermal comfort is between:
    (A) 45 to 50 °C.
    (B) 30 to 35 °C.
    (C) 5 to 35 °C.
    (D) 5 to 45 °C.

23. The UVR most effective in producing Vitamin D is:
    (A) 400-313nm.
    (B) 200-280nm.
    (C) 280-300nm.
    (D) None of the above.

24. The strongest predictor for intramascular cooling is:
    (A) Skin temp.
    (B) Adipose tissue thickness.
    (C) Room temp.
    (D) Time.

25. Spasticity can be reduced by:
    (A) Heating.
    (B) Prolonged cooling.
    (C) TENS.
    (D) All of the above.

26. Galvanic current is:
    (A) AC.
    (B) DC.
    (C) Interrupted current.
    (D) Modified current.

27. Depolarisation of nerve occurs when the current is beyond threshold value about:
    (A) 1mv.
    (B) 10mv.
    (C) 100mv.
    (D) 1000mv.

28. The mean dielectric constant valve of body tissue is:
    (A) 50.
    (B) 70.
    (C) 80.
    (D) None of the above.

29. Wallerian degeneration is completed by:
    (A) 20days.
    (B) 14days.
    (C) 7days.
    (D) 1month.

30. Ideal temp of therapeutic pool:
    (A) 30-35c.
    (B) 35-40c.
    (C) 40-45c.
    (D) 26-30c.

31. Cryotherapy used for:
    (A) Chronic muscle pain.
    (B) Sports injury.
    (C) Both A & B.
    (D) None of the above.

32. The unit of capacitance is:
    (A) Ampere.
    (B) Volt.
    (C) Farad.
    (D) None of above.

33. Low frequency current is upto:
    (A) 1000 Hz.
    (B) 50Hz.
    (C) 100Hz.
    (D) None of the above.

34. Which of the following is an absolute contraindication for electrical stimulation?
    (A) Pacemaker.
    (B) Insensitive skin.
    (C) Unconscious patient.
    (D) Ischemic heart disease.

35. Nerve accommodation can be avoided by:
    (A) Surging the current.
    (B) Using varying current.
    (C) Use a varying current that rise and fall suddenly.
    (D) None of the above.

36. The electrode which can easily depolarize the membrane of nerve is:
    (A) Positively charged.
    (B) Negatively charged.
    (C) Called indifferent electrode.
    (D) None of above.

37. The appropriate current to know tendon rapture:
    (A) Faradic current.
    (B) TENS.
    (C) Galvanic current.
    (D) All of the above.

38. The rheobase is:
    (A) Unchanged in denervated muscle.
    (B) Increased in denervated muscle.
    (C) Decreased in denervated muscle.
    (D) None of above.

39. In iontophoresis the total number of ions introduced into the tissue is proportional to:
    (A) Current.
    (B) Current density.
    (C) The time of application.
    (D) Both B and C.

40. For iontophoresis the positively charged ion should be kept in:
    (A) Anode.
    (B) Cathode.
    (C) Both the electrode.
    (D) Any electrode.

41. How much change of action potentials can trigger a depolarization?
    (A) 5 to 10mv.
    (B) 10 to 15mv.
    (C) 15 to 20mv.
    (D) >25mv.

42. Chemical reaction increased for each 1 degree C increase of tissue temp:
    (A) 10.00%.
    (B) 20.00%.
    (C) 14.00%.
    (D) 13.00%.

43. What can be the source for inotophoresis in hyperhydrosis:
    (A) Iodine.
    (B) Acetic acid.
    (C) Zinc.
    (D) Tap water.

44. For edema reduction the following ion used:
    (A) Acetate.
    (B) Copper.
    (C) Hyaluronidase.
    (D) None of the above.

45. Alpha beta fibers stimulated by:
    (A) HighTENS.
    (B) LowTENS.
    (C) Both.
    (D) None of the above.

46. UVA is:
    (A) Biotic.
    (B) Abiotic.
    (C) Germicidal.
    (D) None of the above.

47. The local errythema after IRR may last upto:
    (A) 10min.
    (B) 20min.
    (C) 30min.
    (D) 1h.

48. Thermionic valve is a device that allow electron to flow in:
    (A) Reverse direction.
    (B) Both directions.
    (C) One direction.
    (D) All direction.

49. The device that measure electrical resistance is:
    (A) Ohmmeter.
    (B) Potentiometer.
    (C) Voltmeter.
    (D) Transformer.

50. At the NMJ the chemical released is:
    (A) Calcium.
    (B) Prostaglandin.
    (C) Acetylcholine.
    (D) Adrenaline.

Group - B

51. Power of muscle increase with _____.
    (A) Increase in poundage / weight.
    (B) Increase in leverage of resisting force.
    (C) Increase in duration of exercises.
    (D) All of the above.

52. Shadow walking is a type of _____ walking.
    (A) Non weight bearing.
    (B) Partial weight bearing.
    (C) Full weight bearing.
    (D) None of the above.

53. Friction manipulation are _____ than kneading.
    (A) Deeper.
    (B) Superficial.
    (C) Equal.
    (D) All of the above.

54. _____ manipulation is used in cases of insomania.
    (A) Stroking.
    (B) Pressure.
    (C) Friction.
    (D) All of the above.

55. Groove in PNF refers to:
    (A) Maximum Resistance.
    (B) Diagonal Pattern of Movements.
    (C) Repetition.
    (D) Proprioceptive Stimuli.

56. Flexor tone is increased by:
    (A) External Stimuli.
    (B) Discomfort of Digestive tract.
    (C) Bladder Distension.
    (D) Both B&C.

57. Two point discrimination is:
    (A) Ability to distinguish two different Areas.
    (B) Ability to touch two points.
    (C) Ability to see two points.
    (D) None of the above.

58. Pen test is indicated:
    (A) To assess Abductor pollicis power.
    (B) To assess Adductor pollicis power.
    (C) To assess Flexor pollicis power.
    (D) None of the above.

59. The muscular weakness is due to:
(A) Interference of motor pathway to motor areas.
(B) Nerve paralysis.
(C) Spastic paralysis.
(D) Brain damage.

60. The differentiating feature of poly-neuropathy from polio myelitis is:
(A) Muscle weakness.
(B) Muscle Atrophy.
(C) No sensory involvement.
(D) Symmetrical Muscle Involvement.

61. Muscle is most efficient in _____ range.
(A) Outer.
(B) Outer part of Middle.
(C) Inner part of Middle.
(D) Inner.

62. Attenuation of Ultrasound is due to:
(A) Reflection and Refraction.
(B) Absorbtion and Scattering.
(C) Reflection and Scattering.
(D) Scattering and Refraction.

63. The mode of heat transfer by hot pack, whirl pool bath, paraffin wax bath is _____.
(A) Conduction and convention.
(B) Conduction and radiation.
(C) Radiation and convention.
(D) Conduction, radiation and convention.

64. Writer's cramp refers to:
(A) Clonus of the upper limb muscle.
(B) Cerebellar lesion causing tone imbalance in upper limb muscle.
(C) Focal dystonia of upper limb muscle.
(D) Focal rigidity of upper limb muscle.

65. Apley's grinding test is to see:
(A) Labral tear.
(B) LCL injury.
(C) Meniscus injury.
(D) MCL injury.

66. The temperature of fluidotherapy unit should be:
(A) Between 30-35°.
(B) Above 60°.
(C) Between 38-45°.
(D) Between 27-34°.

67. The contraindication of hydrotherapy is:
    (A) Convulsion.
    (B) Incontinence of bowel & bladder.
    (C) Respiratory disease.
    (D) All of the above.

68. Ramsay Hunt syndrome caused due to the involvement of:
    (A) Radial nerve.
    (B) Facial nerve.
    (C) Axillary nerve.
    (D) Vagus nerve.

69. To apply traction force to upper Cervical spine:
    (A) The spine should be kept in 20^0flexion.
    (B) The spine should be kept in neutral position.
    (C) The spine should be kept in extension.
    (D) No specific position is required.

70. The term Russian current applied to stimulator:
    (A) Which modulates a continuous sine wave.
    (B) Which produces a continuous monophasic pulse form.
    (C) Which produces sine wave with full wave rectification.
    (D) Which have a ramp up & ramp down modes.

71. End feel of knee extension is:
    (A) Hard.
    (B) Firm.
    (C) Empty.
    (D) Soft.

72. Windswept deformity seen in:
    (A) Glenohumeral joint.
    (B) Calcaneonavicular joint.
    (C) Hip Joint.
    (D) Knee joint.

73. Frequent fracture, Blue sclera, Deafness are seen in:
    (A) Ostegenesis Imperfecta.
    (B) Marfan's Syndrome.
    (C) Ehler-Danlos Syndrome.
    (D) Marble-bone disease.

74. Forearm pronation range of motion is limited due to _____.
    (A) Bony contact.
    (B) Soft tissue approximation.
    (C) Soft tissue tension.
    (D) Tension of ligament.

75. Finger walking on the wall to touch a mark is an example of _____ exercise.
(A) Passive.
(B) Subjective free.
(C) Objective free.
(D) Assisted.

76. Example of passive insufficiency is_____.
(A) Hip flexion with knee extension.
(B) Fingers flexion with wrist extension.
(C) Ankle df with knee flexion.
(D) Shoulder external rotation with abduction.

77. In Thomas test position limitation of hip adduction range indicates shortening of _____.
(A) TFL.
(B) ITB.
(C) Iliopsoas.
(D) Rectus femoris.

78. Mitchell technique of relaxation is based on the principle of _____.
(A) Reciprocal innervations.
(B) Autogenic inhibition.
(C) Cue controlled relaxation.
(D) Released only.

79. Which is the best method for stretching tight structures?
(A) Manual stretch.
(B) Prolonged cyclic stretch.
(C) Prolonged sustained stretching.
(D) Ballistic stretching.

80. Double support phase present at the _____ phase of gait cycle.
(A) Beginning of stance.
(B) End of stance.
(C) Beginning and end of stance.
(D) Mid stance.

81. Faradic current is_____.
(A) An alternating current.
(B) A direct current.
(C) Interrupted current.
(D) Modified current.

82. The approximate half value depth of penetration of Microwave is:
(A) 6 cm.
(B) 4 cm.
(C) 3 cm.
(D) 1.5 cm.

83. Which is not true for endurance training?
(A) Increased use of fatty acid.
(B) Increase used of glycogen.
(C) Slowing accumulation of lactic acid in the working muscle.
(D) None of the above.

84. Scapulo clavicular angle at rest is about _____.
(A) 30 degrees.
(B) 45 degrees.
(C) 60 degrees.
(D) 90 degrees.

85. The stable position for the hip is _____.
(A) Flexion, external rotation and abduction.
(B) Extension, external rotation and adduction.
(C) Neutral extension, internal rotation and abduction.
(D) Full flexion, internal rotation and adduction.

86. The minimum resistance of skin is around:
(A) 1000 μ.
(B) 3200 μ.
(C) 5000 μ.
(D) None of the above.

87. Patellofemoral joint reaction force is maximum at:
(A) Knee extension force.
(B) 15° knee flexion.
(C) 60° knee flexion.
(D) 100° knee flexion.

88. Drop arm test indicates:
(A) Wearness of deltoid.
(B) Rupture of supraspinatus.
(C) Positive painful arc.
(D) None of the above.

89. Apraxia is a result of lesion in:
(A) Frontal lobe.
(B) Parietal lobe.
(C) Occipital lobe.
(D) Internal capsule.

90. 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.

91. In contrast bath the period of immersion of hot and cold bath is as:
(A) Hot water -30 seconds, cold water - 10 seconds.
(B) Hot water - 10 seconds, cold water - 30 seconds.
(C) Hot water - 3-4 minutes, cold water - 1 minute.
(D) Hot water - 1 minute, cold water - 3-4 minutes.

92. Injury rate is higher in which of the following exercise training?
(A) Concentric.
(B) Eccentric.
(C) Plyometric.
(D) In all of the above.

93. Which is not an effect of Cardiopulmonary bypass?
(A) Interstitial oedema.
(B) Pleural effusion.
(C) Diaphragmatic dysfunction.
(D) Pneumothorax.

94. Surface area burn is calculated by 'rule of nine'. How much percentage surface palm of hand included?
(A) One.
(B) Five.
(C) Seven.
(D) Nine.

95. Persistence and severe diplopia can be corrected by:
(A) Using special glasses.
(B) Eye exercises.
(C) Patching one eye.
(D) By limiting head and neck movement by a soft collar.

96. Ober's test is done to detect shortening of _____.
(A) Iliopsoas.
(B) IT band.
(C) Hamstrings.
(D) Gastro-soleus.

97. During elbow flexion in sitting, Triceps _____.:
(A) Works concentrically.
(B) Works eccentrically.
(C) Works statically.
(D) Does not work.

98. To improve function which exercise programme is preferable:
(A) Closed chain concentric.
(B) Open chain concentric.
(C) Plyometric.
(D) Closed chain concentric & eccentric.

99. Short term memory is mediated by:
(A) Limbic system.
(B) Frontal lobe.
(C) Hippo campus.
(D) Parietal lobe.

100. In case of hip arthritis patient often complains pain on _____ aspect of hip joint.
(A) Anterior.
(B) Posterior.
(C) Lateral.
(D) Medial.