

JEMAS(PG)-2024

QB No: 4103200001

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.
2. **Category-1:** Carries **1** mark each and only one option is correct. In case of incorrect answer or any combination of more than one answer, $\frac{1}{4}$ mark will be deducted.
3. Questions must be answered on OMR sheet by darkening the appropriate bubble marked A, B, C, or D.
4. Use only **Black/Blue ink ball point pen** to mark the answer by filling up of the respective bubbles completely.
5. Write Question Booklet number and your roll number carefully in the specified locations of the **OMR** sheet. Also fill appropriate bubbles.
6. Write your name (in block letter), name of the examination center and put your signature (as is appeared in Admit Card) in appropriate boxes in the **OMR sheet**.
7. The OMR sheet 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 sheet 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.
8. Candidates are not allowed to carry any written or printed material, calculator, pen, log-table, wristwatch, any communication device like mobile phones, bluetooth devices etc. inside the examination hall. Any candidate found with such prohibited items will be **reported against** and his/her candidature will be summarily cancelled.
9. Rough work must be done on the Question Booklet itself. Additional blank pages are given in the Question Booklet for rough work.
10. Hand over the OMR sheet to the invigilator before leaving the Examination Hall.
11. Candidates are allowed to take the Question Booklet after examination is over.

Signature of the Candidate: _____

(As in Admit Card)

Signature of the Invigilator: _____

ROUGH WORK ONLY

MPT

Group- A

1. A child should be able to maintain its head in the midline position by what age?
(A) 2 months.
(B) 4 months.
(C) 6 months.
(D) 8 months.
2. A hyperextension injury that occurs due to low-velocity trauma that affects primarily the upper extremities is called?
(A) Anterior cord syndrome.
(B) Central cord syndrome.
(C) Brown Sequard syndrome.
(D) Cauda equina syndrome.
3. As per the American Spinal Injury Association (ASIA) examination, the C8 myotome correlates with which muscle group?
(A) Elbow flexors.
(B) Elbow extensors.
(C) Wrist extensors.
(D) Long finger flexors.
4. Destruction of which component of the skin leads to hypopigmentation in burn patients?
(A) Melanocytes.
(B) Keratinocytes.
(C) Basement membrane.
(D) Hair follicles.
5. Heberden's nodes are a common feature in which of the following disease processes?
(A) Rheumatoid arthritis.
(B) Osteoarthritis.
(C) Psoriatic arthritis.
(D) Gout.
6. In a transient ischemic attack (TIA), the symptoms last for ____
(A) < 24 hours.
(B) > 24 hours.
(C) > 48 hours.
(D) > 1 week.
7. Most common site of a Morton's neuroma is ____
(A) First intermetatarsal space.
(B) Second intermetatarsal space.
(C) Third intermetatarsal space.
(D) Fourth intermetatarsal space.
8. The Achilles reflex assesses which nerve root?
(A) L4.
(B) L5.
(C) S1.
(D) S3.

9. Unawareness of illness in patients with spatial neglect is called _____
- (A) Asomatognosia.
 - (B) Anosodiaphoria.
 - (C) Anosognosia.
 - (D) Apraxia.
10. What level spinal cord injury leads one to be concerned about the risk of developing autonomic dysreflexia?
- (A) T4 and above.
 - (B) T6 and above.
 - (C) T8 and above.
 - (D) T10 and above.
11. Where are the central respiratory control centres located?
- (A) Thalamus.
 - (B) Cortex.
 - (C) Medulla.
 - (D) Hippocampus.
12. Which of these braces is used for low thoracic spine scoliosis?
- (A) Jewett brace.
 - (B) Milwaukee brace.
 - (C) Knight brace.
 - (D) William's brace.
13. Which position causes the highest lumbar intradiscal pressure?
- (A) Standing.
 - (B) Sitting.
 - (C) Walking.
 - (D) Lying supine.
14. Empty Cane Test is performed to assess the lesion of:
- (A) Soleus muscle.
 - (B) Tibialis anterior muscle.
 - (C) Supraspinatus muscle.
 - (D) Brachioradialis muscle.
15. The word "Talipes" refers to:
- (A) Long feet with spidery toes.
 - (B) Flat feet.
 - (C) Club feet.
 - (D) Hammer toes.
16. Tuberculosis of spine is known as:
- (A) Pott's disease.
 - (B) Scheuermann's disease.
 - (C) Perthes disease.
 - (D) Frieberg's disease.
17. A diet deficient in calcium will most commonly results in:
- (A) Osteomalacia.
 - (B) Rickets.
 - (C) Osteoporosis.
 - (D) Osteitis fibrosa.

18. Brown-sequard syndrome is due to?
(A) Full section of spinal cord.
(B) Cross section of spinal nerve.
(C) Hemisection of spinal cord.
(D) Vertical section of spinal cord.
19. In Seddon's classification, complete division of nerve is:
(A) Neuropraxia.
(B) Axonotmesis.
(C) Neurotmesis.
(D) Dendrotmesis.
20. Gower's sign is seen positive in?
(A) Parkinson's disease.
(B) Adult Hemiplegia.
(C) Cerebral Palsy.
(D) Duchenne muscular dystrophy.
21. Which of the following spinal cord pathways is responsible for pain and temperature?
(A) Dorsal columns.
(B) Anterior spinothalamic.
(C) Spinoreticular.
(D) Lateral spinothalamic.
22. A Bicep curl using a Dumbbell is an example of :
(A) Isotonic exercise.
(B) Isokinetic exercise.
(C) Isometric exercise.
(D) PNF exercise.
23. Fracture shaft humerus is associated with:
(A) Axillary nerve injury.
(B) Radial nerve injury.
(C) Brachial plexus injury.
(D) Median nerve injury.
24. Exercises that occur in rounds and consist of continuous training:
(A) Open kinematic chain.
(B) Close kinematics chain.
(C) Circuit training.
(D) Isometric.
25. Centre of gravity of adult humans in the anatomical position is slightly:
(A) Anterior to S1 vertebra.
(B) Posterior to S1 vertebra.
(C) Anterior to s2 vertebra.
(D) Posterior to s2 vertebra.
26. Electrical silence(ie., no EMG activity) at rest is:
(A) Normal.
(B) Abnormal.
(C) Denervation.
(D) Occurs in polymyositis.

27. Which of the following is the most appropriate orthosis for a patient with excessive foot pronation during static standing?
- (A) Scaphoid pad.
 - (B) Metatarsal pad.
 - (C) Metatarsal bar.
 - (D) Rocker bar.
28. For meniscus injury there should be:
- (A) Shear of compressed knee.
 - (B) Torsion of compressed knee.
 - (C) Shear and torsion of knee.
 - (D) Torsion of extended knee.
29. Leg lowering from extended knee position, Quadriceps work?
- (A) Concentrically.
 - (B) Eccentrically.
 - (C) Statically.
 - (D) Isokinetically.
30. Froment's test is done for:
- (A) Intrinsic muscles.
 - (B) Abductor pollicis brevis.
 - (C) Adductor pollicis.
 - (D) Oppenens pollicis.
31. Following is the correct for Chopart's amputation:
- (A) Inter-tarsal.
 - (B) Tarsometatarsal.
 - (C) Carpometacarpal.
 - (D) None of above.
32. 10 RM load refers to:
- (A) A weight that can be lifted less than 10 times as it is too heavy.
 - (B) A maximum weight that can be lifted for minimum 10 times.
 - (C) A minimum weight that can be lifted for maximum 10 times.
 - (D) A weight that can be lifted only 10 times and is too heavy to be lifted more than 10 times.
33. Which muscles bilateral weakness patient use bilateral crutches:
- (A) Gluteus Medius.
 - (B) Gluteus Maximus.
 - (C) Quadriceps.
 - (D) Hamstrings.
34. A patient has just undergone a total hip replacement via a posterior surgical approach. Which of the following combinations of movements of the hip are MOST important to avoid?
- (A) Extension, medial rotation, and abduction.
 - (B) Extension, external rotation, and adduction.
 - (C) Flexion, medial rotation, and adduction.
 - (D) Flexion, external rotation, and abduction.

35. A patient presents with rheumatoid arthritis and finger pain. The 2nd digit has a flexed metacarpophalangeal joint, hyperextended proximal interphalangeal joint, and a flexed distal interphalangeal joint. Which of the following is the MOST accurate description of the position?
- (A) Swan neck deformity.
 - (B) Boutonniere deformity.
 - (C) Mallet finger deformity.
 - (D) De Quervain syndrome.
36. After working for several hours as a mechanic, a patient describes sharp elbow pain over the origin point of the common extensor tendon of the wrist extensors. The pain is alleviated with rest. Which of the following disorders is MOST likely present?
- (A) Medial epicondylitis.
 - (B) Lateral epicondylitis.
 - (C) Anconeus tendonitis.
 - (D) Olecranon bursitis.
37. Absence of sensibility to vibration:
- (A) Dysesthesia.
 - (B) Atopognosia.
 - (C) Thigmanesthesia.
 - (D) Pallanesthesia.
38. VAS is used for:
- (A) Pain.
 - (B) Incontinence.
 - (C) Both.
 - (D) None of the above.
39. A patient presents to the clinic with right shoulder pain and complains of difficulty reaching overhead, with pain especially from 60-120 degrees of shoulder flexion. Which special test would be MOST informative for this set of symptoms?
- (A) Neer Test.
 - (B) Hawkins-Kennedy Test.
 - (C) Crossover Test.
 - (D) Push Off Test.
40. Continuous passive motion apparatus is used to:
- (A) Increase range of motion.
 - (B) Maintain range of motion.
 - (C) Strengthen knee muscles.
 - (D) All of the above.
41. Measurement of axillary crutches?
- (A) 5cm below posterior axillary and 15 cm laterally with patient in supine lying.
 - (B) 7cm below anterior axilla and 10 cm laterally with patient in standing position.
 - (C) 4cm below anterior axilla and 10cm medially with patient supine lying.
 - (D) 5cm below post axilla and 12cm laterally with patient standing.

42. If a magnetic resonance image (MRI) correctly identifies 95% of patients as positive for anterior cruciate ligament tears, then the MRI is:
- (A) Sensitive.
 - (B) Specific.
 - (C) Significant.
 - (D) Stable.
43. Minimum score for GCS scale is:
- (A) 6.
 - (B) 3.
 - (C) 9.
 - (D) 15.
44. Microwaves are strongly absorbed by:
- (A) Water.
 - (B) Fat.
 - (C) Protein.
 - (D) Muscle tissues.
45. Glucosamine is mainly used to treat:
- (A) Arthritis.
 - (B) Diabetes.
 - (C) Pancreatic cancer.
 - (D) Parkinsonism.
46. Low birth baby is one with a birth weight of:
- (A) <1000gms.
 - (B) <3500gms.
 - (C) <2500gms.
 - (D) <1500gms.
47. Reflex which is not present in child at birth is:
- (A) Moro's reflex.
 - (B) Symmetric tonic neck reflex.
 - (C) Crossed extensor reflex.
 - (D) Asymmetric tonic neck reflex.
48. ASH brace is used for:
- (A) Dorsolumbar spine injury.
 - (B) Cervical spine injury.
 - (C) Both.
 - (D) None.
49. After death the time period of eye to be death?
- (A) 5 min.
 - (B) 10 hour.
 - (C) 4 hour.
 - (D) 15 hour.
50. A person of age 60 years has a 40% burn, the survival chance % of that person is:
- (A) 0%.
 - (B) 10%.
 - (C) 50%.
 - (D) 40%.

Group- B

51. An increased response to a stimulus that is normally non painful is known as ____
(A) Anaesthesia.
(B) Allodynia.
(C) Hyperalgesia.
(D) Hyperesthesia.
52. Gamekeeper's thumb involves an injury to the following structure ____
(A) Medial collateral ligament.
(B) Ulnar collateral ligament.
(C) Transverse carpal ligament.
(D) Triangular fibrocartilage complex.
53. In which of the following exercise muscle strength is limited to a particular ROM?
(A) Isometric.
(B) Isotonic.
(C) Isokinetic.
(D) Resisted.
54. Secondary shoulder impingement is most commonly found in the age group of ____
(A) 15-35 years.
(B) 35-50 years.
(C) 50-60 years.
(D) Above 60 years.
55. The absorption of sonic energy is greatest in ____
(A) Blood.
(B) Fat.
(C) Muscle.
(D) Bone.
56. The fibers of VMO oriented at an angle of ____ (degree) to the long axis of femur.
(A) 5 - 7°.
(B) 15 - 17°.
(C) 30 - 40°.
(D) 50 - 55°.
57. The greatest amount of force is generated during which type of muscle contraction?
(A) Slow eccentric.
(B) Fast eccentric.
(C) Fast concentric.
(D) Slow concentric.
58. The most important immediate goal after ACL reconstruction is to achieve ____
(A) Control of pain.
(B) Healing of suture.
(C) Full knee extension.
(D) Knee flexion up to 90°.

59. The strength of a quadrupled semitendinosus-gracilis graft used for ACL reconstruction has been estimated as high as ____
- (A) 2977 N.
 - (B) 3500 N.
 - (C) 4000 N.
 - (D) 4500 N.
60. Transcortical aphasia result from lesions involving the ____
- (A) Broca's area.
 - (B) Wernicke's area.
 - (C) Border zone.
 - (D) Cerebellum.
61. What is the closed packed position for humeroulnar joint?
- (A) Semi flexion.
 - (B) Full flexion.
 - (C) Full extension.
 - (D) Supination.
62. Which muscle is innervated solely by the C5 root?
- (A) Serratus anterior.
 - (B) Rhomboids.
 - (C) Supraspinatus.
 - (D) Biceps Brachii.
63. Which nerve root will most likely be affected by a posterior L3-L4 herniated disc?
- (A) L2.
 - (B) L3.
 - (C) L4.
 - (D) L5.
64. Which of the following is a contraindication for chest percussion to neonate?
- (A) Presence of chest tube.
 - (B) Signs of acute respiratory distress.
 - (C) Hemoptysis.
 - (D) Bronchial spasm.
65. Which of the following method of heat transfer occurs during application of therapeutic Ultrasound?
- (A) Conduction.
 - (B) Convection.
 - (C) Conversion.
 - (D) Sublimation.
66. Which portion of lateral meniscus has greatest mobility?
- (A) Anterior horn.
 - (B) Posterior horn.
 - (C) Outer 1/3.
 - (D) Inner 1/3.

67. Why does midshaft femur fracture life threatening? It may because of -
(A) Haemorrhage.
(B) Pain.
(C) Bandage.
(D) Immobility & stiffness.
68. Gastrocnemius Muscle acts as:
(A) Top Gear.
(B) 3rd Gear.
(C) 1st Gear.
(D) 2nd Gear.
69. Congenital dislocation of Hip is more commonly seen in:
(A) Caucasians.
(B) Negroes.
(C) Japanese.
(D) Eskimos.
70. The most common site for acute osteomyelitis in infants is:
(A) Radial.
(B) Femur.
(C) Hip joint.
(D) Tibia.
71. A dead piece of bone is known as:
(A) Involucrum.
(B) Sequestrum.
(C) Cloacae.
(D) Colostrum.
72. Spina ventosa is seen in:
(A) TB.
(B) Leprosy.
(C) RA.
(D) Sarcoidosis.
73. Rate of regeneration of severed nerve is:
(A) 0.1 mm/day.
(B) 1 mm/day.
(C) 3 mm/day.
(D) 2.5 mm/day.
74. Which of the following Traumatic Brain Injury is not considered as a primary brain injury:
(A) Focal injury.
(B) Diffuse axonal injury.
(C) Hypoxic Ischaemic injury.
(D) Cup-countercup injury.
75. What is the highest spinal cord injury level that a patient could be in order to participate wheelchair sports?
(A) T1-T5.
(B) T6-T8.
(C) T9-T12.
(D) T12-L2.

76. What is an electrolyte disorder that a marathon runner may experience, caused by ingesting large quantities of water and sweating over several hours?
- (A) Heat exhaustion.
 - (B) Hyperthermia.
 - (C) Heat cramps.
 - (D) Hyponatremia.
77. What is another name for 'flat feet'?
- (A) Pes planus.
 - (B) Pes cavus.
 - (C) Pes equine.
 - (D) Hallux rigidus.
78. What is the general term applied to a variety of overuse leg conditions that seasonally plague many athletes:
- (A) Tibial periostitis.
 - (B) Compartment syndrome.
 - (C) Exertional syndrome.
 - (D) Medial tibial stress syndrome (shin splints).
79. Which of the following muscles is not part of the rotator cuff ?
- (A) Infraspinatus.
 - (B) Supraspinatus.
 - (C) Deltoid.
 - (D) Subscapularis.
80. The female athlete triad includes all of the conditions except:
- (A) Amenorrhea.
 - (B) Osteoporosis.
 - (C) Disordered eating.
 - (D) Social isolation.
81. Which of the following is not a performance-enhancing drug ?
- (A) Beta blocker.
 - (B) Alcohol.
 - (C) Anabolic steroids.
 - (D) Human growth hormone (HGH).
82. Which one of these is not considered a primary impairment following a stroke?
- (A) Aphasia.
 - (B) Edema.
 - (C) Impaired muscle tone.
 - (D) Impaired voluntary control.
83. Running is distinguished from walking by:
- (A) Cadence more than 130/min.
 - (B) Absence of double support phase.
 - (C) All of the above.
 - (D) None of the above.

84. P.O.L.I.C.E refers to:
- (A) Prevention, Optimum, Loading, Ice, Protection, Compression, Elevation.
 - (B) Protection, Optimum, Lengthening, Ice, compression, Elevation.
 - (C) Protection, Optimum, Loading, Ice, Compression, Elevation.
 - (D) None of the above.
85. The ability of the posture to modify the external environment and preserve the alignment of one body part to another?
- (A) Postural control.
 - (B) Strength.
 - (C) Balance.
 - (D) None of the above.
86. Exercises do with optimal performance and max capacity with well-being is?
- (A) Fitness.
 - (B) Power.
 - (C) Co-ordination.
 - (D) Range-of Motion.
87. The structure which gives restraint in the maximum directions is:
- (A) LCL.
 - (B) MCL.
 - (C) ACL.
 - (D) PCL.
88. As an ultrasonic beam travels through tissues the energy contained within it decreases with the distance traversed. This phenomenon is known as:
- (A) Absorption.
 - (B) Attenuation.
 - (C) Conduction.
 - (D) Reflection.
89. Descriptive term for an inflammatory condition of one or more musculotendinous units of the leg are called:
- (A) Stress fracture.
 - (B) Medial tibial stress syndrome.
 - (C) Referred discogenic leg pain.
 - (D) Shin splints.
90. For graded exercise tests the increment of exercise should be of:
- (A) 1 MET.
 - (B) 2 MET.
 - (C) 0.5 MET.
 - (D) 2.5 MET.
91. Vertical suspension is used for?
- (A) Relaxation.
 - (B) Strengthening.
 - (C) Stretching.
 - (D) Proximal fixation.

92. The first respiratory defense mechanism are encountered in the:
- (A) Mouth.
 - (B) Nose.
 - (C) Larynx.
 - (D) Trachea.
93. Absolute contraindication to exercise testing is:
- (A) Resting systolic BP > 200 mmHg.
 - (B) Resting diastolic BP > 120 mmHg.
 - (C) Moderately severe valvular heart disease.
 - (D) Recent complicated myocardial infarction.
94. Which one of the following is NOT due to the pelvic floor musculature?
- (A) It helps in the generation of intra-abdominal pressure.
 - (B) It assists in unloading the spine.
 - (C) It has an excitatory effect on bladder activity.
 - (D) It maintains the anorectal angle.
95. A patient who has suffered a cutting injury to the entire left half of the spinal cord at the T8 level is being examined by a physical therapist. Which of the following impairments would be MOST apparent on the ipsilateral lower extremity?
- (A) Loss of pain and temperature sensation.
 - (B) Loss of movement and light touch sensation.
 - (C) Loss of peripheral smooth muscle control.
 - (D) Loss of coordination and accuracy.
96. While examining a patient's lumbar x-ray films, a physical therapist notices that the L5 vertebra is displaced anteriorly on sacrum by approximately 50% of the vertebral body. How will this MOST affect physical therapy if the patient is being treated for low back pain?
- (A) Emphasize core strengthening, especially in spine neutral.
 - (B) Begin progressive gluteal and quad strengthening to assist the lumbopelvic fascia.
 - (C) Avoid extension activities, especially in standing.
 - (D) Add progressive external oblique training as tolerated to assist proper spinal alignment.
97. While treating a patient for cardiac rehab, a physical therapist relies on the Borg RPE scale. The Borg rating of perceived exertion scale (RPE) is MOST representative of which type of data scale?
- (A) Nominal.
 - (B) Ordinal.
 - (C) Cardinal.
 - (D) Marginal.
98. A patient presents to the clinic with signs of lethargy and mild dizziness. The patient's resting blood pressure is 100/70. Which of the following is MOST likely to cause this decrease in blood pressure?
- (A) Lisinopril.
 - (B) Prednisone.
 - (C) Sertraline.
 - (D) Metformin.

99. A 20 year old male soccer player presents with a Grade II right lateral ankle sprain upon evaluation. What are the characteristics of a Grade II ankle sprain?
- (A) Partial tear of the lateral ligament complex with mild joint instability, moderate intra-capsular swelling and tenderness, and some loss of ROM and joint function.
 - (B) Complete rupture of the anterior talofibular ligament, calcaneofibular ligament, and capsule with mechanical joint instability; severe intra/extra-capsular swelling, ecchymosis, tenderness and inability to weight-bear..
 - (C) Stretch of the lateral ligament complex with no macroscopic tear or joint instability, little swelling or tenderness.
 - (D) Partial tear of the syndesmosis, creating generalized swelling and tenderness throughout the ankle joint complex; inability to bear weight, severe ecchymosis, and mortise widening.
100. The direction of stroking in STM may be:
- (A) Proximal to distal.
 - (B) Distal to proximal.
 - (C) Both.
 - (D) None.