



J-9006 Seat No. _____
Second Year B.P.T. Examination
July - 2019
Exercise Therapy - II
(Old Course)

Time : 3 Hours]

[Total Marks : 100

SECTION - I

1 What is MMT ? Describe principles of MMT and write in details about MMT of abdominal muscles. **10**

OR

1 Explain different grading systems for manual muscle testing. Discuss steps to follow for quadriceps and hamstring muscle testing. **10**

2 Write in detail about PNF. Describe PNF techniques for Lower limb. **10**

OR

2 What is neuromuscular coordination ? Explain the role of Frankel's exercise in the rehabilitation. **10**

3 Write short notes : (2/3) **10**
(1) Postural deviations of spine.
(2) Lumbar traction.
(3) Tightness, contracture and deformity.

4 Write in short : (5/6) **10**
(1) Contra-indications for mobilization.
(2) Hold-relax.
(3) Advantages of aerobic exercise.
(4) Types of Muscle-contraction.
(5) Valsalva maneurver.
(6) Indications of stretching.

5 M.C.Q. : **10**
(1) Grade II-I mobilization is given to improve
(a) ROM (b) to decrease pain
(c) (a) & (b) (d) None
(2) CPM apparatus is used to
(a) Increase ROM
(b) Maintain ROM
(c) Strengthens knee muscles
(d) All of the above

- (3) All of the given are the principles of aerobic exercise except
- Overload principle
 - Reversibility principle
 - Specificity principle
 - Principle of balance
- (4) Which of the following conditions would be considered the most appropriate indication for the use of high grade joint mobilization techniques ?
- Loss of accessory joint motion due to capsular restriction.
 - Functional immobility – example paralysis.
 - Joint hypomobility.
 - Pain.
- (5) A stretch reflex is
- Myotonic reflex
 - Static stretch reflex
 - Automatic reaction of muscle to excessive stretch
 - (a) and (c)
- (6) PNF uses which of the following ?
- isometric contraction phase
 - relaxation phase
 - static stretch phase
 - all of the above
- (7) Each grade is determined by 3 variables in MMT.
- Contractility, gravity, resistance
 - Tone, endurance, strength
 - Muscle grouping, density & blocking
 - None of above
- (8) Ober's test is used for tightness of following muscle.
- Tilio-psoas
 - TFL
 - Rectus femoris
 - None
- (9) Which of the following is contra indication for manual strengthening ?
- Decrease ROM due to adhesion
 - Muscle shorts
 - Bony block to joint motion
 - Reduced flexibility
- (10) When testing resistance on one-joint muscle external force is best applied at
- end range
 - near midrange
 - at lateral side of joint
 - at medial side of joint

SECTION - II

- 6** Normal gait Analysis and Pathological gait. **10**
- OR**
- 6** Describe kinetics and kinematics of thoracic and rib cage. **10**
- 7** Write in detail about static and dynamic stabilization of Glen humeral joint. **10**
- OR**
- 7** Describe structure and function of menisci and ligaments around the knee joint with note on locking and unlocking of knee joint. **10**
- 8** Write short notes : (2/3) **10**
- (1) Active and Passive insufficiency.
 - (2) Pelvic femoral rhythm.
 - (3) Lumbo-pelvic rhythm.
- 9** Write in short : (5/6) **10**
- (1) IVD
 - (2) Stress-strain curve (diagram only).
 - (3) Action of two joint muscles.
 - (4) Creep
 - (5) Young's modulus
 - (6) Cubital varus
- 10** M.C.Q. : **10**
- (1) Carpal joint is the example of
 - (a) Pivot joint
 - (b) Condylloid joint
 - (c) Hinge joint
 - (d) Ball & Socket
 - (2) Which of the following planes of the body divides it into upper and lower parts ?
 - (a) Sagittal
 - (b) Transverse
 - (c) Sagittal
 - (d) Frontal
 - (3) What types of muscles are capable of resisting fatigue in a long duration activity ?
 - (a) Deltoid
 - (b) Fast twitch
 - (c) Slow twitch
 - (d) (a) & (b)

- (4) Which of the following is the fibrous joint ?
(a) Joints of Skull
(b) Joints of fingers
(c) Joints of Ribs
(d) All of the above
- (5) Newton's second law of motion is also known as
(a) law of inertia
(b) law of action-reaction
(c) law of momentum
(d) law of gravitation
- (6) The branch of mechanics that describes the cause of force is
(a) Kinetics (b) Kinematics
(c) Biomechanics (d) Fluid mechanics
- (7) Examples of synarthrosis joint are all of the following examples except
(a) Symphysis pubic
(b) Suture joints of skull
(c) Joint between bodies of vertebra
(d) Metacarpo phalangeal joint
- (8) Examples of movement in an open kinematic chain includes all of the following situation except
(a) using your arm to wave a friend
(b) using your leg to kick a ball
(c) using your arm to reach for a box on a shelf
(d) using your legs to squat down
- (9) The type of contraction of the biceps muscle in the arms while raising a body to do chin up is
(a) Concentric (b) Eccentric
(c) Isometric (d) Isokinetic
- (10) Neck-whiplash that occurs when there is sudden stop when driving is an example of
(a) Newtons 1st law
(b) Newtons 2nd law
(c) Newtons 3rd law
(d) Newton's 4th law