



NC-9006

Seat No. _____

Second Year B. Physiotherapy Examination

January – 2017

Exercise Therapy-II & Kinesiology

Time : **3** Hours]

[Total Marks : **100**

- Instructions : (1) Write legibly and to the point.
(2) Draw diagrams wherever necessary.

SECTION-I

1. Long Answer Questions (two out of three) : 20
 1. Write in short about various postural deviations related to spine. Write in short about exercise therapy for scoliosis.
 2. Manual muscle testing techniques for hip extensor muscles. Explain modified MMT techniques in supine position and for patients with hip flexor tightness.
 3. Write in detail about Postural drainage therapy for lower lobes.

2. Short notes : (two out of three) 10
 1. Frankel's exercises
 2. 6 minute walk test
 3. Contraindications of peripheral joint mobilization.

- 3 Short Answer Questions (five out of six) 10
 1. Concave convex rule
 2. Contract-relax technique of PNF
 3. Pursed lip breathing
 4. Define endurance
 5. Define isokinetic exercise
 6. define buoyancy.

- 1 Small amplitude rhythmic oscillations are performed at the beginning of the range
 - a. Grade 1
 - b. Grade 2
 - c. Grade 3
 - d. Grade 4
- 2 Marked weakness of the abdominal muscles causes
 - a. Exaggeration of lumbar lordosis
 - b. Obliteration of lumbar lordosis
 - c. No change in the lumbar lordosis
 - d. No change in the lumbo-sacral angle
- 3 During Shoulder extension gliding (Arthrokinematics) will occur in which direction
 - a. superior
 - b. inferior
 - c. anterior
 - d. posterior
- 4 When the MMT grade is 1
 - a. We should give assisted exercises
 - b. We should give resisted exercises
 - c. We should give passive movement
 - d. None
- 5 Normal tidal volume is
 - a. 100 ml
 - b. 500 ml
 - c. 1000 ml
 - d. 2500 ml
- 6 Frenkle's exercises should be given for
 - a. Coordination
 - b. Sensory ataxia
 - c. Ataxia
 - d. All of the above
- 7 Which one is not a goal of breathing exercise?
 - a. Improve strength, endurance and coordination
 - b. Maintain or increase chest mobility
 - c. Increase work of breathing
 - d. Decrease work of breathing

- 8 Overstretching results in
- Hypermobility
 - Mobility
 - Rigidity
 - Hypomobility
- 9 Breathing technique wherein the patient is taught to force air into the lungs by using the mouth, tongue, pharyngeal and laryngeal structures is referred as _____ breathing
- pursed lip
 - lateral costal
 - glossopharyngeal
 - diaphragmatic
- 10 Exercise Heart rate = $HR_{rest} + 60 - 70\% [HR_{max} - HR_{rest}]$ is commonly called as _____
- Karvonen's Formula
 - Anthoven's Formula
 - Archimedes Formula
 - None of the above

SECTION-II

- 5 Long Answer Questions : (two out of three) 20
- Describe kinematics of normal gait.
 - Biomechanics of elbow joint.
 - Write in detail about pelvic tilt.
- 6 Short notes : (two out of three) 10
- Pump handle and bucket handle movements
 - Explain wheel and axle with examples in human body
 - Stress strain curve.
- 7 Short Answer Questions : (five out of six) 10
- Enumerate types of prehension
 - Cadence
 - Give examples of bipinnate muscles
 - Active insufficiency
 - Ground reaction force vector
 - Axis of radiounlar joints during supination and pronation.
- 8 MCQS 10
- The following is not a part of quadriceps
 - Vastus lateralis
 - Vastus intermedius
 - Popliteus
 - Vastus medialis

- 2 Among the four rotator cuff muscles, the only medial rotator is
 - a. Subscapularis
 - b. Supraspinatus
 - c. Infraspinatus
 - d. Teres minor
- 3 In trunk flexion, the posterior fibers of the annulus fibrosus are _____ while the anterior fibers are _____.
 - a. Compressed, stretched
 - b. Compressed, compressed
 - c. Stretched, compressed
 - d. Stretched, stretched
- 4 Mechanical efficiency of quadriceps muscles is primarily affected by position of _____.
 - a. femur
 - b. fibula
 - c. tibia
 - d. patella
- 5 Grip strength can be enhanced by
 - a. Abducting the fingers
 - b. Radially flexing the wrist
 - c. Extending the wrist
 - d. Pronating the forearm
- 6 An anterior pelvic tilt is naturally accompanied by
 - a. Increased lordosis of lumbar spine
 - b. Decreased lordosis of lumbar spine
 - c. Strong activation of abdominals
 - d. Near maximal elongation of hip flexors
- 7 A hook grip never includes the _____.
 - a. Little finger
 - b. Middle finger
 - c. Index finger
 - d. Thumb
- 8 A pathological increase in the neck shaft angle of femur is called _____.
 - a. Coxa vara
 - b. Coxa valga
 - c. Coxa intermedia
 - d. None of the above
- 9 Features of Menisci are all except
 - a. Decreases joint congruency
 - b. Distributes weight bearing forces
 - c. Reduces friction
 - d. Acts as a shock absorber
- 10 Muscle contraction of triceps in prone push - ups while going down is
 - a. Concentric contraction
 - b. Eccentric contraction
 - c. Isometric contraction
 - d. None of the above