

## **INTERNET-TEST DETAILED GUIDE**

### **A guide to the on-line examinations - including sample questions**

NAIOMT currently offers the following INTERNET TESTS (I-tests) on-line:

**I-test 500 - Level I**

**I-test 600 - Level II Upper Quadrant**

**I-test 610 - Level II Lower Quadrant**

The Level II certificate recognizes that “the candidate has demonstrated by examination a standard of competence in the theory of Orthopaedic Manual Physical Therapy (OMPT).”

Successful completion of all three I-tests (500, 600 and 610) are the equivalent of the retired Level II written (paper) examination, are necessary to receive the NAIOMT Level II (two certificate) and before proceeding to higher level NAIOMT examinations.

For **general information** about the tests, please go to the following documents at [www.naiomt.com](http://www.naiomt.com) - exams

- Information online exams — information and Q & A
- Schedule of exam dates
- Registration on-line

#### **Format of each I-test 500, 600 and 610**

- No proctors required. Closed-book test. Candidate needs to be aware that the consequences of cheating, including having someone other than them taking or assisting with the exam(s) will render the exam(s) null and void and void their eligibility to take further examinations with NAIOMT, Inc.
- Taking the exam on another date other than the assigned exam date will forfeit the candidate’s exam and void their eligibility to take further examinations with NAIOMT, Inc.
- Taking another type of exam other than the exam type the candidate registered and paid for will forfeit the candidate’s exam and void their eligibility to take further examinations with NAIOMT, Inc.
- 100 questions in multiple choice, true-false or matching formats
- Test is arranged in 20 knowledge groups, five question from each group
- Question groups will be presented randomly
- There is opportunity to revisit questions
- There is no penalty for questions omitted or answered incorrectly
- Pass mark is 70%
- Maximum test-time is 2 hours
- Some null questions are used (i.e. which of the following would rule out the ----)

#### **Scope of each test**

- The test is named for the course number, i.e. I-test 500 level I is the NAI 500 course (i.e. 42 hours of a Level I/500 core course).
- The scope of the I-test will be the application and clinical reasoning of the material taught in the class, the content of the course manual and independent study from the course reading list.

- A separate thoracic test (for core course 640) is planned for the future. In 2010, the thoracic content in the tests will be basic and tested in I-tests 500 and 600.
- I-test 500 Level I will currently include questions relevant to the thoracic scan as taught in that class. I-test 600-Level II Upper Quadrant will include basic thoracic applied anatomy, biomechanics and pathology questions and application to assessment and treatment.

## I-test 500 - Level I *(Updated Aug 2009)*

**100 questions — 5 questions from each of 20 groups — 2 hours**

Gr #	GROUP NAME	DESCRIPTION OF TYPICAL CONTENT AREAS
1	Dermatomes	Dermatomal origin of upper and lower quadrant skin areas C1-T6; T7-S4
2	Peripheral cutaneous nerves	Match area of skin with name of cutaneous nerve, upper and lower quadrants
3	Key muscles ("myotomes")	Match key muscle ("myotome") muscle function or named muscle, with the spinal nerve root number
4	Peripheral nerve muscle supply	Match the named muscle with its peripheral nerve supply, upper and lower quadrant
5	Tendon reflexes	Match named muscle tendon with the spinal nerve root
6	Neurological or vascular compromise	Recognition of signs & symptoms of neurological compromise: cervical, thoraco-lumbar, cauda equina or major vascular compromise
7	Identification of potential pain sources	Medical screening & classification of pain per potential system or structure of origin (vascular, visceral, neurogenic, spondylogenic, bone, ligament, disc, nerve etc.)
8	Pain modulation and nociceptors	Gate control and location of nociceptors and original theories on pain modulation and effects of application of manual and adjunct treatments
9	Scan: observation	Scanning exam: interpretation of observation. Seriousness and relevance of the observation finding of: skin changes and scars, muscle or bony asymmetry, postural abnormalities, swelling, etc.
10	Scan: STT spine	Scanning exam: interpretation of results of spinal selective tissue tension – potential relation to medical pathology and common spinal conditions or movement dysfunctions
11	Scan: lumbar spine general stress tests	Scanning exam: interpretation of results of lumbar spine and pelvis general stress or provocative tests — compression, torsion, shear and traction tests
12	Scan: cervical & thoracic spine general stress tests	Scanning exam: interpretation of results of cervical and thoracic spine general stress or provocative tests. Compression or traction in combined diagonal motions and non-neutral positions
13	Neurological mobility tests	Dural and neuro-meningeal mobility tests
14	Neurological testing of motor function	Method of testing, joint position, principles of differentiation from other muscle dysfunctions
15	Neurological testing of sensory function	Method of testing, principles of differentiation of nerve palsy from peripheral nerve and CNS disorder
16	Differential diagnosis	Basic clinical reasoning and application of selective tissue tension from the neurological examination
17	Peripheral joint STT	Basic principles of interpretation with emphasis on selective tissue tension testing of extremity joints
18	Capsular patterns of restriction	Capsular patterns – especially of the extremity joints
19	Treatment of	Stages of healing and indication/contraindications to deep transverse

	extremities	friction massage, external orthoses, exercise etc.
20	Treatment of spine	Indications & contra-indications to traction, ergonomics and basic spinal exercise and spinal position for treatment including red flags and VBI

## I-test 600 – Level II Upper Quadrant

100 questions — 5 questions from each of 20 groups — 2 hours

Gr #	GROUP NAME	DESCRIPTION OF TYPICAL CONTENT AREAS
1	Scan: observation	Cervical and thoracic scanning exams: interpretation and relevance of observation findings of skin changes and scars, muscle/bony asymmetry, postural abnormalities, and swelling
2	Scan: STT spine	Cervical and thoracic scanning exams: interpretation of results of spinal selective tissue tension and potential relation to medical pathology and common spinal conditions.
3	Scan: cervical & thoracic spine general stress tests	Interpretation of results of cervical and thoracic spine general stress or provocative tests in the scanning exam – compression or traction in combined diagonal positions
4	Neurological mobility tests	Dural and neuro-meningeal mobility tests
5	Neurological testing of motor function	Principles of muscle testing and differentiation from other muscle dysfunctions
6	Neurological testing of sensory function	Methods of testing and principles of differentiation of nerve palsy from peripheral nerve and CNS disorders
7	Differential diagnosis from spinal scanning exam	Cervical and thoracic scanning examination clinical reasoning, with emphasis on muscle and neurologic tests
8	Differential diagnosis from upper extremity joint scans	Principles of interpretation of scanning examination findings with emphasis on selective tissue tension of upper quadrant extremity joints
9	Capsular patterns of restriction	Capsular patterns of restriction, especially of upper limb extremity joints
10	Signs & symptoms of serious pathology	Recognition of signs & symptoms of cervical or thoracic neurological compromise or major vascular compromise
11	Identification of potential pain source and indications and contraindications to OMPT	Indications and contraindications to OMPT intervention including suspicion of non-musculoskeletal origin of pain and identification of potential pain source per system or structure (vascular, visceral, neurogenic, spondylogenic, bone, ligament, disc, nerve etc.)
12	Cervical and thoracic anatomy and biomechanics	Cervical and thoracic spine anatomy and biomechanics
13	Pathology of the cervical and thoracic region	Pathology and movement dysfunctions of the cervical and upper thoracic region
14	Cervical and thoracic spine clinical reasoning and OMPT treatment	Cervical and thoracic spine clinical reasoning, assessment and selection of manual physical therapy interventions/ treatments
15	Biomechanics theories	Definitions and applied theory of osteokinematics, arthrokinematics, myokinematics and basic kinetics
16	Shoulder girdle anatomy and biomechanics	Shoulder girdle anatomy and biomechanics (gleno-humeral, sternoclavicular, acromio-clavicular and scapulo-thoracic)
17	Elbow region anatomy and biomechanics	Elbow region anatomy and biomechanics (elbow and superior radio-ulnar)
18	Wrist and hand anatomy and biomechanics	Wrist and hand anatomy and biomechanics (inferior radio-ulnar, wrist, thumb and hand)
19	Upper extremity pathology	Upper extremity pathology and movement dysfunctions

20	Upper extremity clinical reasoning and OMPT treatment	Upper extremity clinical reasoning, assessment and selection of manual physical therapy interventions/ treatments including grading of techniques
----	---	---

## I-test 610 - Level II Lower Quadrant

100 questions — 5 questions from each of 20 groups — maximum 2 hours

Gr #	GROUP NAME	DESCRIPTION OF TYPICAL CONTENT AREAS
1	Scan: observation	Lumbo-sacral scanning exam: interpretation and relevance of the observation findings of skin changes and scars, muscle or bony asymmetry, postural abnormalities and swelling
2	Scan: STT spine	Lumbo-sacral scanning exam: interpretation of results of spinal selective tissue tension. Potential relation to medical pathology and common spinal conditions.
3	Scan: lumbo-sacral spine general stress tests	Interpretation of results of lumbo-sacral general stress or provocative tests in scanning examination - compression, torsion, shear and traction tests
4	Neurological mobility tests	Dural and neuro-meningeal mobility tests
5	Neurological testing of motor function	Principles of muscle testing and differentiation from other muscle dysfunctions
6	Neurological testing of sensory function	Methods of testing of principles of differentiation of nerve palsy from peripheral nerve and CNS disorders
7	Differential diagnosis from spinal scanning exam	Lumbo-sacral scanning examination clinical reasoning, with emphasis on muscle and neurologic tests
8	Differential diagnosis from lower extremity scans	Principles of interpretation of scanning examination findings with emphasis on selective tissue tension testing of lower quadrant extremity joints
9	Capsular patterns of restriction	Capsular patterns of restriction, especially of lower limb extremity joints
10	Signs & symptoms of serious pathology	Recognition of signs & symptoms of spinal neurological compromise or major vascular compromise
11	Identification of potential pain source and indications and contraindications to OMPT	Indications and contraindications to OMPT intervention including suspicion of non-musculoskeletal origin of pain and identification of potential pain source per system or structure (vascular, visceral, neurogenic, spondylogenic, bone, ligament, disc, nerve etc.)
12	Lumbo-sacral anatomy and biomechanics	Lumbo-sacral spine anatomy and biomechanics
13	Pathology of the lumbo-sacral region	Pathology and movement dysfunctions of the lumbo-sacral region
14	Lumbo-sacral spine clinical reasoning and OMPT treatment	Lumbo-sacral spine clinical reasoning, assessment and manual physical therapy interventions/ treatments
15	Biomechanics theories	Definitions and applied theory of osteokinematics, arthrokinematics, myokinematics and basic kinetics
16	Hip region anatomy and biomechanics	Hip region anatomy and biomechanics
17	Knee region anatomy and biomechanics	Knee region anatomy and biomechanics (tibio-femoral, patello-femoral and superior tibio-fibular)
18	Ankle and foot anatomy and biomechanics	Ankle and foot anatomy and biomechanics (inferior tibio-fibular, ankle, subtalar and major tarsal, MT & IP joints)
19	Lower extremity pathology	Lower extremity pathology and movement dysfunctions
20	Lower extremity clinical reasoning and OMPT treatment	Lower extremity clinical reasoning, assessment and manual physical therapy interventions/ treatments including grading of techniques

## SAMPLE QUESTIONS

The following are actual or slightly modified questions currently in the internet-based tests at levels 500, 600 and 610 (level I, level II upper and lower)

NAIOMT utilizes **null or negative** questions because they match the thought processes necessary for differential diagnosis and clinical reasoning. We have tried to write them clearly. Please read them carefully and look for the words “except”, “rule out”, “not” and “least.”

### SAMPLE QUESTIONS FROM I-TEST 500

#### Sample #1: Dermatomes (500 Group 1 - *mix and match*)

Match the following dermatomal areas of skin with the most appropriate spinal segment (answers A-E):

- |  |     |
|--|-----|
| 1. ulnar side of the forearm and hand  | ( ) |
| 2. lateral side of the face            | ( ) |
| 3. radial side of the forearm and hand | ( ) |
| 4. axilla and the medial arm           | ( ) |
| 5. upper trapezius                     | ( ) |
- 
- |    |    |
|----|----|
| A. | C2 |
| B. | C4 |
| C. | C6 |
| D. | C8 |
| E. | T2 |

#### Sample #2: Peripheral Cutaneous Nerves (500 Group 2 - *mix and match*)

Match the following peripheral cutaneous nerves with the most appropriate areas of skin (answers A-E):

- |  |     |
|--|-----|
| 1. posterior cutaneous nerve of the thigh    | ( ) |
| 2. cutaneous branch of common peroneal nerve | ( ) |
| 3. medial calcaneal nerve                    | ( ) |
| 4. medial plantar nerve                      | ( ) |
| 5. sural nerve                               | ( ) |
- 
- |    |   |
|----|---|
| A. | plantar aspect of the heel                        |
| B. | plantar surface of the 1 <sup>st</sup> metatarsal |
| C. | posterior knee                                    |
| D. | upper, lateral calf                               |
| E. | lower, lateral calf                               |

**Sample #3: Key muscles/“myotomes” (500 Group 3 - mix and match)**

Match the following muscles, or muscle groups with the most appropriate segmental nerve root supply (Answers A-E). Note: Two key muscle groups have the same segmental innervations:

1. adductors of fingers ( )
2. long extensors of fingers ( )
3. long flexors of fingers ( )
4. medial rotators of shoulder ( )
5. lateral rotators of shoulder ( )

- A. C5
- B. C6 and C7
- C. C7 and C8
- D. C8 and T1
- [E not included]

**Sample #4: Peripheral nerve supply to muscle (500 Group 4 - mix and match)**

Match the following muscles with the most appropriate peripheral nerve supply (Answers A-E):

1. piriformis ( )
2. psoas major ( )
3. popliteus ( )
4. gluteus minimus ( )
5. extensor hallucis longus ( )

- A. deep peroneal nerve
- B. superior gluteal nerve
- C. spinal roots L5, S1, S2
- D. spinal roots L1, L2, L3
- E. tibial nerve

**Sample #5: Pain modulation and nociceptors (500 Group 8 - multiple-choice)**

The original “Gate control” theory of pain postulated that a mechanism for modulation of pain exists within the:

- A. substantia gelatinosa
- B. medulla oblongata
- C. dorsal root ganglion
- D. amygdala

**Sample #6: Pain modulation and nociceptors (500 Group 8 - multiple-choice)**

Utilizing the original “Gate Control Theory” of pain, the activity in large fibers from receptors would increase and therefore “close” the “gate” at the spinal level with a treatment of:

- A. deep transverse friction massage
- B. high velocity thrust techniques
- C. gentle passive motion
- D. diaphragmatic breathing training

## SAMPLE QUESTIONS FROM I-TESTS – 500, 600 and 610

The following questions may appear in all three tests, or be slightly changed for the higher level tests. They emphasize the essential knowledge bases of orthopaedic manual physical therapy.

### Sample #7: Neurological or vascular compromise (500 Group 6, 600 & 610 Group 10 - multiple-choice)

Identify which of the following are typical signs of spinal cord compromise:

- A. spastic gait, hyporeflexia, fatiguing weakness
- B. spastic gait, hyperreflexia, fatiguing weakness
- C. spastic gait, hyperreflexia, clonus
- D. drop-foot gait, hyporeflexia, fatiguing weakness

### Sample #8: Medical screening and identification of potential pain sources and indications & contra-indications to OMPT (500 Group 7, 600 & 610 Group 11 - multiple-choice – null/negative question)

Upper thoracic pain can be from a osteogenic cause. Which of the following is the least likely to be the source of the osteogenic pain

- A. posterolateral disc protrusion
- B. spondylosis
- C. end-plate fracture
- D. spinous process avulsion fracture

### Sample #9: Scan: observation (500 Group 9, 610 Group 1 - multiple-choice – null/ negative question)

A sign that would be atypical for an underlying structural anomaly of the lumbar spine and therefore would reduce the probability of its occurrence is:

- A. a 'café au lait' discoloration
- B. a 'port wine stain' discoloration
- C. a hair patch
- D. severe swelling

### Sample #10: Scan: selective tissue tension testing (500 Group 10, 600 & 610 Group 2 - multiple-choice – null/negative question)

When assessing the active range of motion, the following patient response is of least importance at this stage of the scanning examination

- A. a painful arc in early range
- B. willingness to move
- C. ability to return to the exact starting posture
- D. reproduction of their symptoms during movement

### Sample #11: Scan selective tissue tension testing (500 Group 8 - multiple-choice - true-false)

Radiating posterior thoracic pain reproduced with overpressure at the end-range of active thoracic flexion confirms a contractile lesion is present.

- A. true
- B. false

**Sample #12: Scan: lumbo-sacral spine general stress tests** (500 Group 11, 610 Group 3 - *true-false, null/negative question*)

In the lumbar scanning examination, a chronic disc protrusion will **not** produce pain during a compression overload test with the hips at 90 degrees and if performed with the supine spine in neutral.

- A. true
- B. false

**Sample #13: Scan: lumbo-sacral spine general stress tests** (500 Group 11, 610 Group 3 - *multiple-choice*)

To accurately focus the stress to the sacro-iliac structures during the supine sacro-iliac distraction test, the forces should be applied:

- A. bilaterally and rapidly
- B. unilaterally and rapidly
- C. bilaterally and sustained
- D. unilaterally and sustained

**Sample #14: Cervical and thoracic general stress tests** (500 Group 12, 600 Group 3 - *multiple-choice*)

A patient with a right C7 painful radiculopathy reports reproduction of pain during the neutral compression. An additional compression tests in extension with right side bending is most likely to result in a/an:

- A. reduction of the right arm pain
- B. reduction of the neck pain
- C. increase of the right arm pain
- D. onset of left arm pain

**Sample #15: Neurological mobility tests** (500 Group 13, 600 & 610 Group 4 - *multiple-choice*)

A hypothesis of the presence of dural irritation is generated primarily from the patient's description of the pain behavior that is worse with:

- A. coughing
- B. sitting
- C. lying supine
- D. backward bending

**Sample #16: Neurological testing of motor function** (500 Group 14, 600 & 610 Group 5 - *multiple-choice*)

Within the neurological screen in the scanning examination, isometric muscle tests are performed primarily to examine the presence of:

- A. muscle strength on a 0-5 scale
- B. muscle fatiguability
- C. muscle endurance
- D. muscle power output

**Sample: #17: Neurological testing of sensory function** (500 Group 15, 600 & 610 Group 6 - *multiple-choice*)

Efficient screening for a recent change in skin sensation would first test sensitivity to:

- A. hot and cold
- B. vibration and heavy pressure
- C. light touch and pain
- D. light touch and hot

**Sample: #18: Neurological testing of sensory function** (500 Group 15, 600 & 610 Group 6 - *multiple-choice*)

Typically, the loss of skin sensation from a nerve root palsy compared to the loss from a complete peripheral nerve injury is:

- A. ill-defined and a smaller area of numbness
- B. ill-defined and a larger area of numbness
- C. well-defined and a larger area of numbness
- D. well-defined and a smaller area of numbness

**Sample: #19: Differential Diagnosis** (500 Group 16, 600 & 610 Groups 7 and 8 - *multiple-choice*)

There is gross wasting of the third and fourth interossei. To differentiate a spinal nerve root palsy from a peripheral nerve palsy, the sensitivity of the following area of skin should be tested:

- A. medial forearm
- B. dorsum of the first interosseus muscle
- C. tips of the third and fourth fingertips
- D. thenar eminence

**Sample: #20: Differential Diagnosis** (500 Group 16, 600 & 610 Groups 7 and 8 - *multiple-choice*)

The quadriceps muscle group tests weak. If the cause is a peripheral nerve injury and not a spinal nerve root palsy, the following muscle group would also test weak:

- A. hip flexors
- B. hip adductors
- C. ankle dorsi-flexors
- D. knee flexors

**Sample: #21: Differential Diagnosis** (500 Group 16, 600 & 610 Group 8 - *multiple-choice – null/negative question*)

The patient's response to an isometric muscle test is weak and painless. The diagnosis that can be ruled out is:

- A. non-displaced fracture
- B. motor nerve root palsy
- C. third degree tear of a muscle
- D. peripheral motor nerve palsy

**Sample: #22: Differential Diagnosis** (500 Group 16, 600 & 610 Group 8 - *multiple-choice*)

A recent very large central disc protrusion at T7/8 that presses on the thecal sac and cord could present as:

- A. decreased lower extremity tendon reflexes
- B. a retentive bladder
- C. a flaccid bladder
- D. upper extremity clonus

**Sample: #23: Peripheral Joint Selective Tissue Tension** (500 Group 17, 600 Group 8 - *multiple-choice*)

Muscle testing reveals fatiguing weakness in multiple muscles in the distal aspect of one upper extremity. The most likely reason is:

- A. symptom magnification
- B. a large central cervical disc protrusion
- C. serious carpal bone pathology
- D. diabetes

**Sample: #24: Peripheral Joint Selective Tissue Tension** (500 Group 17, 600 Group 8 - *multiple-choice*)

In a patient who has sustained a second-degree tear of a collateral joint ligament 4 weeks ago, the response to isometric muscle testing with the joint in a neutral position, should be:

- A. strong and painful
- B. strong and painless
- C. weak and painful
- D. weak and painless

**Sample: #25: Capsular Pattern of Restriction** (500 Group 18, 600 & 610 Group 9 - *multiple-choice*)

The capsular pattern of restriction of the spine is most accurately described as a:

- A. gross loss of flexion and extension, side bending motions full
- B. equal loss of all movements, except extension full
- C. equal loss of all movements, except flexion full
- D. equal loss of all movements

**Sample: #26: Capsular Pattern of Restriction** (500 Group 18, 600 Group 9 - *multiple-choice*)

The capsular pattern of restriction of the elbow joint is most accurately described as a:

- A. greater loss of extension than flexion

- B. gross loss of flexion with full extension
- C. equal loss of flexion and extension
- D. greater loss of flexion than extension

**Sample: #27: Treatment of Extremities** (500 Group 19, 600 Group 20 - *multiple-choice*)

The ideal position of the patient's arm for effective deep transverse friction massage to the mid point of the common wrist extensor tendon at the elbow is:

- A. 90 degrees elbow flexion, forearm full supination
- B. elbow full extension, forearm full supination
- C. resting position of the elbow joint
- D. wrist full flexion with forearm pronation

**Sample: #28: Treatment of Extremities** (500 Group 19, 610 Group 20 - *multiple-choice*)

You have applied deep transverse friction (DTF) massage for chronic tendinosis to the middle of the Achilles tendon for two minutes. The patient described initial numbing of the area but now a return of the pain. You notice your contact point has migrated distally from the original massage site. The best course of action is:

- A. abandon the use of massage
- B. continue massage for a further 2 minutes at the new site
- C. discontinue massage for that day
- D. utilize modalities instead

**Sample: #29: Treatment of the Spine** (500 Group 20, 600 Group 14 - *multiple-choice*)

With a diagnosis of a recent postero-lateral disc protrusion but currently resolved limb symptoms, the exercise program is typically designed with the goal to maintain the spinal segment in a position of:

- A. full flexion
- B. slight extension
- C. neutral
- D. rotated away from pain

## SAMPLE QUESTIONS FROM I-TESTS – 600 and 610

The following questions may appear in level two (II) tests and they emphasize the basic sciences, biomechanics and principles of mobilization utilized in orthopaedic manual physical therapy.

### **Sample: #30: Cervical and Thoracic Anatomy & Biomechanics** (600 Group 12 - *multiple-choice*)

The orientation of the zygapophyseal joints in the normal mid cervical spine is approximately midway between the:

- A. sagittal and transverse planes
- B. coronal and transverse planes
- C. coronal and sagittal planes
- D. transverse and paramedian planes

### **Sample: #31: Cervical and Thoracic Anatomy & Biomechanics** (600 Group 12 - *true-false*)

Considering the motion of the occipital bone to end-range flexion of the right atlanto-occipital (O/A) joint, the occipital bone rotation is to the right

- A. true
- B. false

### **Sample: #32: Lumbo-sacral Anatomy & Biomechanics** (610 Group 12 - *multiple-choice – null/negative question*)

The structures that play no role in the biomechanical control of anterior shear and therefore do not influence anterior instability at L5/S1 are:

- A. lateral annular fibers orientated superoanteriorly
- B. lateral annular fibers orientated superoposteriorly
- C. iliolumbar ligaments
- D. articular processes of zygapophyseal joints

### **Sample: #33: Lumbo-sacral Anatomy & Biomechanics** (610 Group 12 - *multiple-choice*)

The articular surface of an L5 articular process at a typical L5/S1 zygapophyseal joint is orientated (facing) in the following direction(s):

- A. horizontal, facing lateral
- B. vertical, facing anterior
- C. vertical, facing anterior and medial
- D. vertical, facing inferior and lateral

**Sample: #34: Pathology of the Cervical and Thoracic Region** (600 Group 13 - *mix and match*)

Match the description (A-E) with the pathology or disorder

- Cervical radiculopathy (  )
- Tietze's syndrome (  )
- Grisel's syndrome (  )
- Cervical myelopathy (  )
- Horner's syndrome (  )

- A. Weakness and numbness in both upper extremities
- B. Marked pain and weakness in one upper extremity
- C. Costochondritis of anterior thorax
- D. Eyelid drooping with red, dry face
- E. Inflammatory weakening of neck ligaments

**Sample: #35: Pathology of the Lumbo-sacral Region** (610 Group 13 - *mix and match*)

Match the description (A-E) with the pathology or disorder

- Rim lesion (  )
- Reiter's syndrome (  )
- Cauda equina syndrome (  )
- Osteitis of the ilium (  )
- Meralgia paresthetica (  )

- A. Sclerosis adjacent to the sacro-iliac joint
- B. Avulsion of annular fibers of spinal disc
- C. Enthesitis and asymmetrical synovitis with swollen digits
- D. Entrapment of the lateral femoral cutaneous nerve
- E. Saddle anesthesia and flaccid bladder

**Sample #36: Cervical and Thoracic Spine/ Lumbo-sacral Spine Clinical Reasoning and OMPT Treatment** (600 & 610 Group 14 - *multiple-choice*)

During testing of a restricted spinal joint motion, the pain occurs before the restriction barrier and half way into expected range. The preferred oscillatory mobilization techniques are a combination of amplitudes that include:

- A. grades II and III
- B. grades III and V
- C. grades IV and I
- D. grades V and IV

**Sample #37: Cervical and Thoracic Spine/ Lumbo-sacral Spine Clinical Reasoning and OMPT Treatment - 600 & 610 Group 14 (Multiple-choice)**

The clinical picture that is most indicative of lumbar disc herniation is:

- A. severe back and leg pain, severe limitation of spinal movement in a capsular pattern
- B. moderate-severe back and leg pain, moderate limitation of spinal movement in a non-capsular pattern
- C. moderate back and leg pain, no limitation of movement
- D. mild back pain with no leg symptoms, severe limitation of movement in a capsular pattern

**Sample #38: Cervical and Thoracic Spine/ Lumbo-sacral Spine Clinical Reasoning and OMPT Treatment (600 & 610 Group 14 - multiple-choice)**

A “closing” or unilateral extension mobilization technique to the right L4/5 would be indicated if the patient’s presentation is:

- A. one year post disc protrusion at L4/5, back pain with prolonged standing
- B. radiating pain into the right limb and foot with standing
- C. one week post acute onset of sciatica with increasing pain and numbness
- D. normal segmental motion without pain reproduction

**Sample #39: Cervical and Thoracic Spine/ Lumbo-sacral Spine Clinical Reasoning and OMPT Treatment (600 & 610 Group 14 - true-false)**

The 85 year-old osteoporotic female is still experiencing constant pain at 3 months post compression fracture at T7. Traction relieves her pain.

The safest method to apply a traction treatment would be with her arms folded across her body, the therapist standing behind the seated patient and traction applied through her arms strongly compressed to her chest.

- A. True
- B. False

**Sample #40: Cervical and Thoracic Spine/ Lumbo-sacral Spine Clinical Reasoning and OMPT Treatment (600 & 610 Group 14 - multiple-choice)**

Considering the biomechanics of the C1/2 (atlanto-axial) joint, the most effective mobilization applied from below to the axis (C2) to regain right rotation of the right C1/2 joint is:

- A. right posterior glide with right side flexion
- B. right unilateral posterior glide with left side flexion
- C. right anterior glide with right side flexion
- D. bilateral anterior glide

**Sample #41: Biomechanics Theories** (600 & 610 Group 15 - *multiple-choice*)

The interphalangeal joint is classified as a:

- A. compound modified sellar
- B. compound modified ovoid
- C. simple modified sellar
- D. simple modified ovoid

**Sample #42: Biomechanics Theories** (600 & 610 Group 15 - *multiple-choice*)

The spurt muscle's primary function on the joint is:

- A. maintaining the loose pack position
- B. producing angular motion
- C. producing a spin motion
- D. transarticular stabilization

**Sample #43: Biomechanics Theories** (600 & 610 Group 15 - *multiple-choice*)

The following is a true statement about the closed packed position:

- A. It is essential for joint maturation
- B. The adjunct rotation is an essential component
- C. It is considered essential for joint nutrition
- D. A shunt muscle is needed to achieve the position

**Sample #44: Shoulder Girdle Anatomy & Biomechanics** (600 Group 16 - *multiple-choice*)

The acromio-clavicular joint:

- A. is an unmodified ovoid joint with a partial intra-articular disc
- B. has a resting position of full arm elevation
- C. has the superior acromioclavicular ligament as the primary stabilizer
- D. is deeply concave on the clavicular articulation

**Sample #45: Hip Region Anatomy and Biomechanics** (610 Group 16 - *true-false*)

Hip joint stability is primarily from the negative pressure holding the femoral head in the acetabulum

- A. true
- B. false

**Sample #46: Hip Region Anatomy and Biomechanics** (610 Group 16 - *true-false*)

The lateral femoral cutaneous nerve passes into the thigh superficial to the inguinal ligament

- A. true
- B. false

**Sample #47: Elbow Region Anatomy & Biomechanics** (600 Group 17 - *multiple-choice*)

The attachment on the humerus of the extensor carpi radialis brevis (ECRB) part of the common extensor tendon of the forearm is at the:

- A. lateral supracondylar ridge
- B. posterior aspect of lateral epicondyle
- C. supracondylar ridge and adjacent olecranon
- D. anterior and lateral aspects of the lateral epicondyle

**Sample #48: Elbow Region Anatomy & Biomechanics** (600 Group 17 - *true-false*)

During supination of the superior radioulnar joint, the ulna is not static and moves into a small amount of adduction

- A. true
- B. false

**Sample #49: Knee Region Anatomy & Biomechanics** (610 Group 17 - *true-false*)

The last degrees of knee hyperextension are achieved by an anterior tibial glide to the medial compartment of the knee

- A. true
- B. false

**Sample #50: Knee Region Anatomy & Biomechanics** (610 Group 17 - *multiple choice*)

The knee joint may be classified as a:

- A. compound and complex modified sellar
- B. compound and complex modified ovoid
- C. simple modified sellar
- D. simple modified ovoid

**Sample #51: Wrist & Hand Anatomy & Biomechanics** (600 Group 18 - *multiple choice*)

Considering the carpometacarpal joint of the thumb, the following is a true statement:

- A. It is a modified sellar joint
- B. It has three degrees of freedom of motion
- C. The conjunct rotation for opposition is lateral (supination)
- D. The conjunct rotation for opposition is medial (pronation)

**Sample #52: Wrist & Hand Anatomy & Biomechanics** (600 Group 18 - *multiple choice*)

To achieve full radial deviation of the wrist, the scaphoid must glide in an ulnar direction without rotating

- A. true
- B. false

**Sample #53: Ankle & Foot Anatomy & Biomechanics** (610 Group 18 - *multiple choice*)

The cuneiforms present a convex surface to the navicular.

- A. true
- B. false

**Sample #54: Ankle & Foot Anatomy & Biomechanics** (610 Group 18 - *multiple choice*)

The following statement is true about the calcaneocuboid joint:

- A. It is a modified ovoid joint with a vertical joint plane
- B. It is an unmodified ovoid joint supported by peroneus longus
- C. Its close packed position is dorsiflexion with medial rotation
- D. Its closed packed position is plantar flexion with lateral rotation

**Sample #55: Upper Extremity Pathology** (600 Group 19 - *mix and match*)

Match the description (A-E) with the pathology or disorder

- cubital tunnel syndrome ( )
- Kienböck's disease ( )
- anterior interosseous nerve syndrome ( )
- posterior interosseous nerve syndrome ( )
- myositis ossificans ( )

- A. weakness of thumb to index pinch
- B. pain around the lateral epicondyle
- C. peripheral numbness after 5 minutes of elbow flexion
- D. ectopic bone deposit in injured tissue
- E. avascular necrosis of the lunate

**Sample #56: Lower Extremity Pathology** (610 Group 19 - *mix and match*)

Match the best description (A-E) with the pathology or disorder

- Achilles tendonitis (tendonitis) ( )
- thrombophlebitis of leg ( )
- Achilles tendon tear ( )
- Hoffa's disease of the fat pad ( )
- Shin splints ( )

- A. unable to walk, Thompson's calf test positive
- B. swelling around the tendon and joint line
- C. pain with walking, tenderness along tendon
- D. Homan's sign with calf pain and swelling
- E. exercise-induced medial leg pain

**Sample #57: Upper Extremity Clinical Reasoning and OMPT Treatment** (600 Group 20 - multiple choice)

After mobilizing the gleno-humeral joint in which moderate pain occurs before the restriction barrier and half way into expected range, the initial trial treatment resulted in a very small increase of range but no change in their pain.

The preferred next manual therapy step would be to:

- A. repeat the previous grade of mobilization for 1/2 minute
- B. progress to a technique with a larger amplitude
- C. change to mobilize in the opposite direction to the barrier to motion
- D. use a technique that vigorously challenges the resistance barrier

**Sample #58: Upper Extremity Clinical Reasoning and OMPT Treatment** (600 Group 20 - multiple choice)

To assess the flexion motion capability of the glenohumeral joint, the accessory or arthrokinematic test applied to the humerus that provides the most useful information is:

- A. anterior glide with compression
- B. posterior/inferior glide
- C. inferior (caudal) glide
- D. lateral distraction

**Sample #59: Lower Extremity Clinical Reasoning and OMPT Treatment** (610 Group 20 - multiple choice – null/negative question)

The objective test results that are **not** part of the description of the “sign of the buttock” are:

- A. hip flexion and straight leg raise equally limited
- B. non-capsular pattern at the hip
- C. spasm/hard end feel on full hip flexion
- D. painful weakness on resisted hip extension and abduction

**Sample #60: Lower Extremity Clinical Reasoning and OMPT** (610 Group 20 - multiple choice – null/negative question)

The most effective mobilization to gain the end range of plantarflexion of the ankle (talocrural) joint is:

- A. anterior glide with lateral rotation
- B. anterior glide with medial rotation
- C. posterior glide with lateral rotation
- D. posterior glide with medial rotation

*End of sample questions.*