Test Booklet Serial No.	102837
Test Booklet Code	ABC

Candidate's Roll No.						

Time: 2 hours **Maximum Marks: 100**

Read the following instructions carefully before you begin to answer the questions.
This Booklet contains questions in English only

WRITTEN TEST FOR THE POST OF JUNIOR PHYSIOTHERAPIST – AUGUST 2014

INSTRUCTIONS TO CANDIDATES:

1. Before you start please check whether:
   a. **The Test Booklet Serial No. and the OMR Answer Sheet Serial No. are same.**
   b. All the pages in the question book are in order, and intact; and
   c. Questions 1 to 100 are available.

Note: If you find any defect/s in the above mentioned points in this Test Booklet/OMR Sheet, you must inform the Invigilator and get both of them replaced with another set immediately.

2. Use only the **BLACK/BLUE BALL POINT PEN** that is provided to you to write/mark in the answer sheet.
3. Write your Roll Number in the box above.
4. This Booklet contains 100 questions
5. All the questions carry equal marks. Each Correct response will be given 1 (One) mark.
6. Negative marks will be there for wrong answers. 0.25 marks will be deducted for each wrong answer.
7. You have to use only the OMR Answer Sheet which is given along with this Question Booklet for answering the questions. You must complete the details in the prescribed places in the OMR Answer Sheet failing which your OMR Answer Sheet will not be evaluated.
8. The questions are of multiple-choice type. **FOUR** suggested answers **A, B, C** and **D** follow each question. Only one of them is the most appropriate. Select the most appropriate answer and **DARKEN THE CORRESPONDING OVAL IN THE ANSWER SHEET.** For eg: 

9. ONLY ONE answer is to be darkened for each question. No correction is feasible as the marking is to be done with pen. Marking of wrong options as well as multiple markings will be treated as wrong and negative marks will be awarded accordingly.
10. As the Answer Sheet will be evaluated by a machine only, the marking of the answers by shading of the ovals may be done carefully.
12. Rough work **should not be done on the answer sheet or in the Question Booklet** other than in the 'Space for Rough Work' provided at the end of the Question Booklet.
13. Mobile phones, wireless communication devices or any other devises/equipments are completely banned within the examination halls/rooms. Candidates are advised not to bring any such devises/equipments into the examination hall/room even by switching them off as these will not permitted inside the hall/room. The candidature of those candidates who do not comply with these instructions will be cancelled without further notice and they will not be allowed to appear in the written test.
14. This booklet should be **RETURNED INTACT** at the end of the examination failing which the candidature of the candidates will be cancelled without intimation and his/her Answer Sheet will not be evaluated.

StudySite.org

ABC

1) Which has the highest wavelength among the given choices
   a) X rays
   b) Ultra violet rays
   c) Infrared rays
   d) Microwave

2) Which of the following is a not measure the central tendency of data
   a) Median
   b) Mean
   c) Mode
   d) Standard deviation

3) Froment sign is seen in injury of the
   a) Ulnar nerve
   b) Median nerve
   c) Radial nerve
   d) Musculocuteneous nerve

4) Which of the following nerves contain no cutaneous sensory fibres?
   a) Long thoracic
   b) Axillary
   c) Musculocutaneous
   d) Tibial

5) In cryotherapy, ice should be applied for
   a) 20 to 30 minutes every 2 hours
   b) 10 to 20 minutes every 2 hours
   c) 20 to 30 minutes every 4 hours
   d) 10 to 20 minutes every 2 hours

6) Normal motor nerve conduction velocity in the upper limb is
   a) Less than 40 m/s
   b) 45 to 70 m/sec
   c) 70 to 80 m/sec
   d) None of the above

7) The instrument used to measure current intensity is
   a) Wheatstone bridge
   b) Potentiometer
   c) Voltmeter
   d) Ammeter

StudySite.org

StudySite.org

8) All are common with elbow dislocation except
   a) Brachial artery injury
   b) Myositis ossificans
   c) Median nerve palsy
   d) Volkman's contracture

9) Which of the following measures is most important in preventing post- operative pulmonary embolism
   a) Deep breathing
   b) Incentive spirometry
   c) Coughing
   d) Ankle pumps

10) The attitude of policeman taking tip indicates which of the following
   a) Injury to the upper brachial plexus
   b) Injury to the lower brachial plexus
   c) Injury to the radial nerve
   d) Injury to the musculocutaneous nerve

11) A patient reports feeling a frequent need to urinate and often leaks urine before reaching the bath room. Which type of incontinence is most likely present?
   a) Stress incontinence
   b) Urge incontinence
   c) Overflow incontinence
   d) Functional incontinence

12) A decubitus ulcer extends through the cutaneous tissue and has subcutaneous fat visible at the bottom of the wound. What is the stage of this decubitus ulcer?
   a) Stage I
   b) Stage II
   c) Stage III
   d) Stage IV

13) During initial evaluation of a patient, which of the following helps best in assessing the general willingness of a patient to use an affected body part?
   a) Bony palpation
   b) Active movement
   c) Passive movement
   d) Sensory testing

14) Which of the following will not reduce ankle swelling following a sprain?
   a) Ice towel
   b) Ice massage
   c) Cryo pressure
   d) Evaporative coolant

StudySite.org

StudySite.org

15) The tractive force applied for the lumbar spine in prolapsed inter vertebral disc is
a) 50% of body weight
b) 25% of body weight
c) 75% of body weight
d) None of the above

16) In contrast bath, the period of immersion in hot and cold bath is
a) Hot water 30 seconds, cold water 10 seconds
b) Hot water 10 seconds, cold water 30 seconds
c) Hot water 3 to 4 minutes, cold water 1 minute
d) Hot water 1 minutes, cold water 3 to 4 minutes

17) Meniscal calcification is a feature of
a) Gout
b) Hyperparathyroidism
c) Pseudogout
d) Ankylosing spondylitis

18) Conventional TENS is
a) High intensity, low frequency stimulation
b) Low intensity, low frequency stimulation
c) High intensity, high frequency stimulation
d) Low intensity, high frequency stimulation

19) The depth of penetration of microwave diathermy is
a) 0.5 cm
b) 3 cm
c) 1.3 cm
d) 9 cm

20) Which of the following modality is most suitable for reducing spasticity
a) Ultrasonic
b) TENS
c) Cryotherapy
d) Hot packs

21) The resting membrane potential of skeletal muscle fiber is
a) Minus 90 mV
b) Minus 9 mV
c) Minus 90 microV
d) Minus 9 microV

StudySite.org

StudySite.org

22) The following are true about muscle blood flow except
a) The resting muscle blood flow is 5 to 10ml/100g/min
b) The muscle blood flow during exercise may reach as high as 50 to 100ml/100g/min
c) Skeletal muscle accounts for 20 percent of the resting cardiac output
d) During extreme exertion, 80 percent of the cardiac output may be flowing through the muscles

23) One patient is having difficulty with rapid alternating movements while performing neurologic testing. The best term to describe this specific impairment is:
a) Ataxia
b) Dysmetria
c) Dysarthria
d) Dysdiadocokinesia

24) An elderly lady with right hemiplegia due to stroke presents 8 weeks later, for rehabilitation. She complains of right shoulder pain during functional upper extremity movements and bed mobility exercises. On examination, the head of the humerus is found to be inferiorly displaced. Which of the following would be the most appropriate for her condition?
a) Functional Electrical Stimulation (FES)
b) Transcutaneous Electrical Nerve Stimulation (TENS)
c) Short Wave Diathermy (SWD)
d) Interferential Current (IFC) Stimulation

25) A 60 year old male presents with left shoulder pain. The patient notices pain on walking fast or climbing stairs. He has to stop walking or climbing because of pain. The pain gets relieved within a few minutes of rest. What is the best course of action to follow next
a) Begin passive range of motion exercises
b) Postpone treatment and refer the patient to his physician for further evaluation.
c) Instruct the patient on activity modification.
d) Begin the patient with rotator cuff exercises and instruct patient on activity modification.

26) A patient complains of pain in the right hip while she is ambulating. Upon examination, you notice that the patient has a significant drop of the left hip while in midstance on the right leg. The most appropriate treatment for this impairment would be:
a) Standing hip abduction of the left leg.
b) Standing hip abduction of the right leg.
c) Standing flexion of the left leg.
d) Standing flexion of the right leg.

27) A patient presents to the clinic with right shoulder pain and complains of difficulty reaching overhead. The patient reports great weakness and pain with throwing a ball. 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

StudySite.org

StudySite.org

28) The best position for postural drainage of right middle lobe is
a) Supine on a wedge with the left shoulder elevated on pillows with the head lower than the pelvis.
b) Prone with the right shoulder elevated on pillows and the head on the same plane as the pelvis.
c) Prone with the left shoulder elevated on pillows and the head on the same plane as the pelvis.
d) Supine on a wedge with the right shoulder elevated on pillows with the head lower than the pelvis.

29) A patient with a stroke affecting the right middle cerebral artery has difficulty walking, especially over uneven surfaces. Which of the following describes the most appropriate initial treatment to improve the patient's ability to walk over uneven surfaces?
a) Fit the patient with a 4-wheeled walker and instruct him to use a 4-point gait pattern.
b) Fit the patient with axillary crutches and instruct him to use a 4-point gait pattern.
c) Place a single point cane in the patient's left hand and train him to use a step-to gait pattern.
d) Place a single point cane in the patient's right hand and train him to use a step-to gait pattern.

30) A patient with spinal cord injury is able to press up from the wheelchair using elbow extensors. Which spinal level must be intact to perform this maneuver?
a) C4
b) C5
c) C6
d) C7

31) Which of the following will strengthen the infraspinatus and teres minor muscles
a) Medial rotation of the shoulder with elastic tubing
b) Extension of the shoulder with dumbbell weights
c) Flexion of the shoulder with dumbbell weights
d) Lateral rotation of the shoulder with elastic tubing

32) The physiotherapist suspects that a patient's persistent shoulder pain is due to injury to a specific muscle. Which of the following provides the therapist with maximal information to identify the specific muscle?
a) Active range of motion
b) Active-assistive range of motion
c) Passive range of motion
d) Resisted isometrics

StudySite.org

StudySite.org

33) The following are all true of levers except
a) Bottle opener is an example for a class 2 lever
b) Crowbar is an example of class 1 lever
c) Wheel barrow is an example of class 3 lever
d) Mandible is an example of class 3 lever

34) The following are true of ankylosing spondylitis except
a) Strong association with HLA B27
b) Back pain with morning stiffness of more than ½ hour
c) Sacro iliac joint is characteristically involved
d) Back pain characteristically increases with activity

35) The following are true of complex regional pain syndrome except
a) Allodynia and hyperalgesia
b) Local edema
c) Pain and stiffness out of proportion to original trauma
d) Osteosclerosis on the X ray

36) The following are tests for evaluation of integrity of the cruciate ligaments of the knee except
a) Anterior drawer test
b) Apprehension test
c) Lachman test
d) Pivot shift test

37) What is the first functional task that should be taught to a patient with T2 spinal cord injury
a) Self range of motion
b) Ambulation with long leg braces
c) Rolling
d) Bed to wheelchair transfer

38) Milwaukee brace is used in
a) Scoliosis
b) Fracture skull
c) Fracture tibia
d) CTEV

39) In the cervical spine, psoterior vertebral separation occurs at a flexion angle of
a) 5 degree
b) 15 degree
c) 20 to 30 degree
d) None of the above

StudySite.org

StudySite.org

40) Which of the following is a contra indication to traction
a) Cord signs
b) Prolapsed inter vertebral disc
c) Muscle spasm
d) None of the above

41) A patient with an above knee prosthetic limb is displaying lateral trunk bending toward the involved lower extremity while ambulating. Which of the following would be the most likely cause of this gait abnormality?
a) Socket is too small
b) Prosthetic limb is too long
c) Poor suspension
d) Medial wall too high

42) Thalamus and hypothalamus belong to which of the following
a) Telencephalon
b) Mesencephalon
c) Metencephalon
d) Diencephalon

43) A patient with a complete C5 spinal cord injury is preparing to perform therapeutic exercises on the floor. Which of the following lifts would be most appropriate to use to transfer the patient to the floor?
a) Slide board transfer
b) Dependent squat pivot lift
c) Hoyer lift
d) Two person lift

44) A patient who has suffered a stroke is having difficulty walking due to an extensor synergy in the lower extremity. Which of the following will be most beneficial initial intervention to improve the patient's ability to walk?
a) Fit the patient with an ankle-foot orthosis.
b) Begin training with a single Lofstrand crutch to maintain balance.
c) Practice moving the patient out of the synergy pattern to assist in limb advancement.
d) Begin weight shifting exercises to encourage weight-bearing through the involved lower extremity.

45) A patient is receiving physical therapy treatment for weakness and difficulty transferring following an above-knee amputation approximately 4 weeks ago. Which of the following will be the most important initial treatment to improve gait mechanics?
a) Have the stump fitted for a custom prosthesis
b) Begin performing progressive sidelying hip abduction exercises
c) Perform prone hip extension stretching
d) Initiate progressive well-leg strengthening

StudySite.org

StudySite.org

46) When using the parallel bars for gait training, what is the appropriate adjustment of height that will optimize stability and security for the patient?
a) A height that allows for elbow flexion of approximately 0 degrees.
b) A height that allows for elbow flexion of approximately 10 degrees.
c) A height that allows for elbow flexion of approximately 15 degrees.
d) A height that allows for elbow flexion of approximately 20 degrees.

47) When treating a patient with Human Immunodeficiency Virus (HIV), which of the following is the most important consideration?
a) Thoroughly disinfect all surfaces touched by the individual.
b) Treat the patient in a private room and avoid contact with other patients.
c) Use protective equipment when in contact with blood products.
d) Reduce workloads and use primarily low-impact drills to avoid stress on weight-bearing joints.

48) During ambulation, what is the normal range of motion for ankle plantar flexion?
a) 0-5 degrees
b) 0-10 degrees
c) 0-15 degrees
d) 0-20 degrees

49) Which of the following cervical spine joints is primarily responsible for the flexion and extension of the cranium that occurs when a person is nodding "yes"
a) Atlanto-occipital joint
b) Atlanto-axial joint
c) C2-3 zygapophyseal joint
d) C3-4 zygapophyseal joint

50) Aquatic running is planned for a patient. If the water level is at the patient's mid-chest, which of the following best describes the percentage of body weight loaded through the lower extremities?
a) 10 %
b) 25%
c) 50%
d) 75%

51) A patient reports feeling dizzy and lightheaded upon standing. He also notices blurring of the vision at that time. He feels better on lying down. This is highly suggestive of
a) Benign paroxysmal positional vertigo
b) Orthostatic hypotension
c) Meniere's disease
d) Transient ischemic attack

StudySite.org

StudySite.org

52) Pain and tenderness just inferior to the medial malleolus is suggestive of sprain of which ligament
   a) Anterior talofibular ligament
   b) Deltoid ligament
   c) Posterior talofibular ligament
   d) Calcaneofibular ligament

53) When asked to demonstrate how to brush his teeth, the patient takes the toothbrush and begins brushing his hair. Which of the following conditions best represents the patient's impairment?
   a) Ataxia
   b) Apraxia
   c) Aphasia
   d) Abulia

54) A physical therapist instructs a patient with right lower limb weakness to descend stairs. The most appropriate position for the therapist to guard the patient is
   a) In front of the patient toward the left side
   b) In front of the patient toward the right side
   c) Behind the patient toward the left side
   d) Behind the patient toward the right side

55) In high steppage gait there is weakness of
   a) Ankle plantar flexors
   b) Ankle dorsiflexors
   c) Knee extensors
   d) Hip extensors

56) A patient with right knee injury has been advised to walk without bearing weight on the affected lower limb. The most appropriate gait pattern for this patient is
   a) Two point
   b) Three point
   c) Four point
   d) Swing to

57) Which of the following will improve the quality of gait of a patient with Parkinsonism
   a) Decrease stride length
   b) Increase trunk rotation
   c) Increase forward head posture
   d) Decrease base of support

StudySite.org

StudySite.org

58) For a patient with residual quadricep weakness following a knee surgery, which of the following electrical stimulation modalities will be most effective at increasing quadricep strength?
a) Interferential current
b) Neuromuscular electrical nerve stimulation
c) Transcutaneous electrical nerve stimulation
d) Iontophoresis

59) Handicap is best defined as:
a) Biomechanical abnormality of the human organism
b) Abnormality of a tissue, organ, or body system
c) Inability to participate in a task or participate in an activity considered normal for a human being.
d) Disadvantage that prevents fulfillment of a role that is normal.

60) Large amplitude oscillation to the limits of available motion represents joint mobilization of which grade?
a) Grade II
b) Grade III
c) Grade IV
d) Grade V

61) Total plasma calcium:
a) Increases with phosphate
b) Decreases with a rise in albumin,
c) Changes its degree of ionisation with pH changes
d) Is decreased in osteoporosis

62) The velocity of conduction of a nerve action potential:
a) Is inversely related to the cross-sectional area of the axon
b) Is faster in a myelinated fibre than in an unmyelinated one
c) Is increased by cooling the nerve
d) Is highest in pre-ganglionic autonomic fibres

63) Regarding reflex action, all are true except:
a) May be carried out by skeletal, smooth or cardiac muscle or by glands
b) Is not influenced by higher centres in the brain
c) May involve simultaneous contraction of some skeletal muscles and relaxation of others
d) Can be monosynaptic or polysynaptic

64) Athletes differ from normal individuals in having:
a) A higher resting cardiac output
b) A higher resting heart rate
c) A decreased muscle mass
d) A higher maximum oxygen consumption

StudySite.org

StudySite.org

65) Stimulation of the parasympathetic nervous system:
a) Increases the heart rate
b) Decreases the rate of gastric emptying
c) Dilates the pupil
d) Causes contraction of the detrusor muscle in the bladder

66) In normal walking the pelvic tilt is about
a) 2 degree
b) 5 degree
c) 7 degree
d) 10 degree

67) Which of the following sensations requires the parietal lobe for final perception?
a) Graphesthesia
b) Pain
c) Position sense
d) Pressure sense

68) Ultrasonic effect is primarily due to
a) Slowing of the rate of diffusion of ions across the biologic membranes
b) Elevation of temperature from absorption of energy
c) Change in permeability of the membrane potential
d) Gaseous cavitation.

69) Hydro collator packs are heated in water up to
a) 90-100° F
b) 110-130° F
c) 140-160° F
d) 180-200° F

70) Lesion involving the posterior parietal region of the non dominant hemisphere will result in
a) Constructional apraxia
b) Kinetic apraxia (motor apraxia)
c) Ideational apraxia
d) Ideomotor apraxia

71) A power of 2+/5 on manual muscle test indicates
a) The patient is able to complete more than ½ of the available range of motion against gravity.
b) The patient is able to complete less than ½ of the available range of motion against gravity.
c) The patient is able to complete the available range of motion with gravity eliminated.
d) The patient is able to complete less than ½ of the available range of motion with gravity eliminated.

StudySite.org

StudySite.org

ABC

72) Spasticity is defined as:
a) Force dependent increase in tone
b) Force dependent decrease in tone
c) Velocity dependent increase in tone
d) Velocity dependent decrease in tone

73) The therapeutic frequency used in Ultrasound therapy (massage) is:
a) 22,000 – 25,000 KHz
b) 800 – 3,000 KHz
c) 5,000 – 10,000 KHz
d) 90 – 700 KHz

74) Measurement of axillary crutches:
a) 5cm below axilla and 15 cm laterally
b) 7cm below axilla and 10 cm laterally
c) 4cm below axilla and 10 cm medially
d) 5cm below axilla and 12 cm laterally

75) Shoulder dislocation is caused by vigorous:
a) Flexion with internal rotation
b) Flexion with external rotation
c) Abduction with external rotation
d) Abduction with internal rotation

76) Poliomyelitis is caused by viral infection in:
a) Posterior horn cell
b) Anterior horn cell
c) Muscle
d) Peripheral Nerves

77) Stimulation of the tenth cranial nerve causes all except:
a) Slowing of A-V conduction
b) Constriction of coronary vessels
c) Increased secretion of gastric acid
d) Drelaxation of the pylorus

78) On changing from the upright to the supine position the following does NOT occur
a) Baroreceptor activity increases
b) Leg vein pressure decreases
c) The blood volume in the pulmonary circulation increases
d) Renin activity decreases

StudySite.org

StudySite.org

79) Unilateral transection of dorsal nerve roots C3-T2 produces:
a) Motor paralysis
b) Loss of reflexes
c) Loss of sympathetic and sudomotor tone
d) Hypertonia

80) If a normal person hyperventilates for 2 hours to an arterial PCO_2 of 35 mm Hg
a) The cerebral blood flow increases
b) The standard bicarbonate decreases
c) The Hb-Oxygen dissociation curve shifts to the left
d) The ionised calcium concentration increases

81) Sensation from the medial aspect of the leg is carried by
a) L 2 root
b) L 3 root
c) L 4 root
d) L 5 root

82) A rehabilitation technique least useful in cerebral palsy is
a) Electrical stimulation therapy
b) Neurodevelopmental therapy
c) Hippothrapy
d) Aquatic therapy

83) Ultraviolet B radiation has a wavelength of
a) 400 to 315 nm
b) 315 to 280 nm
c) 280 to 100 nm
d) < 100 nm

84) Trophic electrotherapy is used for
a) Strengthening normal muscle
b) Intact denervated muscle
c) Atrophic denervated muscle
d) Disuse atrophy of the muscle

85) Impingement position of rotator cuff of shoulder is
a) Abduction, flexion and internal rotation
b) Abduction, flexion and external rotation
c) Abduction, extension and internal rotation
d) Abduction, flexion and external rotation

StudySite.org

86) Muscle contracture is an adaptive change in
a) Normal muscle immobilized for a long time
b) Dystrophic muscles of myopathy
c) Muscles affected by hypocalcemic tetany
d) Muscles affected by myoclonic seizures

87) Hamstring muscles are
a) Tensor fascia lata, Biceps femoris, Semitendinosus, Semimembranosus
b) Semitendinosus, Semimembranosus, Biceps femoris, Adductor magnus
c) Biceps femoris, Gracilis, Semitendinosus, Semimembranosus
d) Semitendinosus, Semimembranosus,, Gracilis, Tensor fascia lata

88) The amount of oxygen consumed per kg of body weight per minute in one metabolic equivalent of activity is
a) 3.5 ml
b) 4.5 ml
c) 5.5 ml
d) 7.5ml

89) A child with cerebral palsy shows poor co participation in therapy. A reward system in the form of stickers for good behavior is implemented. After that, the child starts performing better during treatment sessions. This is an example of
a) Classical conditioning
b) Procedural learning
c) Declarative learning
d) Operant conditioning

90) A person is able to speak but he is unable to comprehend verbal commands. What is the type of language problem he has?
a) Expressive aphasia
b) Receptive aphasia
c) Global aphasia
d) Conduction aphasia

91) Tilting of pelvis occurs maximally
a) In mid stance
b) At push off
c) During swing through
d) At heel strike

92) In COPD pulmonary function test will not reveal
a) Increase in maximum breathing capacity
b) Decreased lung volume and expiratory flow rate
c) Decreased inspiratory capacity
d) Decrease in carbon mono oxide uptake

StudySite.org

93) Brandt-Daroff exercise is used for
a) In hospital treatment for cervical vertigo
b) Home exercise for cervical vertigo
c) In hospital treatment for BPPV
d) Home exercise for BPPV

94) Both chin tuck and supraglottic swallow is helpful in
a) Delayed swallowing reflex and decreased unilateral pharyngeal paralysis
b) Delayed swallowing reflex and decreased bilateral pharyngeal paralysis
c) Delayed swallowing reflex and decreased laryngeal closure
d) Delayed swallowing reflex and decreased opening of cricopharyngeal region

95) Level 3 of Rancho Los Amigo level of cognitive functioning scale corresponds to
a) Generalized response
b) Confused: agitated
c) Confused: inappropriate
d) Localized response

96) All the parameters of lung function test are reduced in obstructive lung disease except
a) Vital capacity
b) Forced expiratory volume
c) Maximal voluntary ventilation
d) Residual volume

97) Loading response in human gait cycle corresponds to
a) Initial contact
b) Footflat
c) Midstace
d) Terminal stance

98) The type of muscle training associated with highest risk of injury is
a) Plyometric
b) Isometric
c) Isotonic
d) Isokinetic

99) In disuse atrophy the muscle fobres that degenerate the earliest are
a) Type I A
b) Type I B
c) TypeI I A
d) TypeI I B

StudySite.org

StudySite.org

ABC

100) Regarding the quadriceps femoris muscle which of the following is false
a) Supplied by lumbar roots L 3, 4, 5
b) It is 3 times stronger than the hamstrings
c) Rectus femoris is a two joint muscle
d) Vastus medialis helps in knee locking

StudySite.org