

**W1-2-60-1-6**

**JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY**

# **UNIVERSITY EXAMINATIONS 2014/2015**

**FIRST YEAR TRIMESTER I EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN PHYSIOTHERAPY**

**IPT 2108 : EXERCISE THERAPY I**

**DATE: DECEMBER 2014 TIME: 2 HOURS**

**INSTRUCTIONS:**

**ANSWER ALL QUESTIONS IN ALL SECTIONS**

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**SECTION A [MCQ’S]**

1. The motor unit comprises of a spinal anterior cell and :
2. Its motor axon
3. Muscle fiber it supplies
4. Both A and B
5. None of the above
6. The following assessment procedure is important to confirm the diagnosis
7. Related histories
8. Sensory assessment
9. Motor assessment
10. All of the above
11. Muscle atrophy is presents commonly in:
12. Upper motor neuron lesions
13. Lower motor neuron lesions
14. Both A and B
15. None of the above
16. Mental functions are assessed by:
17. Level of consciousness
18. Orientation
19. Memory & emotional state
20. All of the above
21. Which of the following factors influence the strength of normal muscle
22. Motivation of the patient
23. Speed of contraction
24. Type of muscle contraction
25. All of the above
26. The following factors contribute to muscle hypertrophy except:
27. Increase in the amount of protein in the muscle fiber
28. Increase in the density of the capillary bed
29. Increase in the density of the capillary
30. Biochemical changes in the muscle fiber
31. Which of the following is not true about muscle endurance
32. Ability of muscle to contract and overcome the resisting force in one maximal effort
33. Ability of muscle to generate tension and sustain it over a prolonged period of time
34. Ability of muscle to perform a greater number of contractions over an extended period of time
35. All of the above

8. Which of the following soft tissue is responsible for impaired mobility

(a) Skin

(b) Connective tissue

(c) Muscle

(d) All of the above

9. The benefits of passive range of motion include the following Except:

(a) Enhance synovial fluid movement and diffusion of materials in the joint

(b) Maintain the patients awareness of movement

(c) Stimulate muscle to generate tension and increase strength of contraction

(d) Inhibit pain

10. Hip extension (Hyperextension) movement can be performed to full range in

(a) prone lying position

(b) spruce lying position

(c) side lying position

(d) A and C

11. Which of the following is a cause of fount dysfunction

(a) contracture

(b) pain

(c) muscle spasticity

(d) All of the above

1. In which of the following will a muscle contraction against resistance generate greatest strength
2. Middle range of concentration
3. Inner range of concentration
4. Outer range of concentration
5. All of the above
6. In which position is the human body most stable
7. Prone kneeling
8. Prone lying
9. Standing
10. Crook lying
11. Which of the following is not a derived position from the standing fundamental position
12. Toe standing
13. Stride standing
14. Wing-standing
15. Knee –stride standing
16. Which of the following is an appropriate purpose for selecting a suitable position for a therapeutic exercise
17. To train balance
18. To modify the effect of an exercise to improve ROM
19. To achieve adequate fixation when movement is to be localized to a specific joint.
20. All of the above
21. If action filament is pulled towards the myosin filament, shortening of the muscle takes place resulting in a contraction.
22. Concentric
23. Eccentric
24. Isometric
25. Isokinetic
26. The cytoplasm in a muscle is called:
27. Sarcomere
28. Sarcolema
29. Sarcoplasm
30. Protoplasm
31. Reposition of tropomyosin molecules during cross bridging is caused by:
32. Calcium ions
33. Phosphate ions
34. Sodium ions
35. Potassium ions
36. Motor assessment includes:
37. Muscle assessment
38. Range of motion
39. Tone and gait
40. All of the above
41. Which of the following depicts the appropriate sequence of patient’s assessment and programme development
42. Assess needs, develop plan, evaluate plan, implement plan
43. Assess needs, develop plan, implement plan, evaluate plan
44. Develop plan, assess needs, implement plan, evaluate plan
45. Develop plan, implement, assess needs, evaluate plan.
46. Which of the following is not a true SI unit of Torgue
47. N.M
48. NM-1
49. Kg.m2s-2
50. All of the above
51. Which of the following group of muscles are not actively contracting during Toe-standing
52. The calf muscles
53. The knee extensors
54. The knee flexors
55. The hip extensors
56. While administering exercise therapy, the starting position is selected based on:
57. Patients ability to assume the position
58. Use of gravity for resistance or assistance
59. Use of sort or long lever arm
60. All of the above
61. Which of the following describes grade 2 muscle strength on exford scale ?
62. Movement against gravity only
63. Movement with gravity eliminated
64. A flicker of muscle contraction but no movement
65. Movement against gravity with some resistance
66. The following types of exercise are most appropriate for strength training of weak knee extensors @ grade 2 on o oxford scale
67. Patient in high sitting raising weight on his foot
68. Patient in pronolymp affected lower limb supported on plinth, actively bends knee then lowers the leg
69. Patient inside lying affected limb upmost , thigh and leg suspended on slings, straightens and bends the knee alternatively
70. None of the above
71. Passive movement can be used to evaluate inert structure by:
72. Determining limitations of motion
73. Determining joint stability
74. Determining muscle elasticity ‘
75. All of the above
76. The following statement is true about active -assisted ROM
77. Maintain physiologic elasticity of contracting muscle
78. Prevent thrombus formation
79. Develop coordination
80. All of the above
81. Which of the following is not True about eccentric muscle contraction
82. Muscle fibers lengthens as they contract
83. Muscle contraction used to decelerate the body parts
84. Muscle contraction velocity remains constant
85. Lowers the load gently
86. Which of the following is true about isotonic muscle contraction
87. There is concentric and eccentric isotonic contraction
88. Muscles length remains unchanged
89. Muscles tension changes
90. None of the above
91. Which of the following is not true about muscle power
92. It is the rate of tongue production at a joint
93. It is affected by both strength and velocity
94. It is a critical component of explosive movements
95. It is predominantly produced in slow twitch fibers.
96. The following is not true about isometric muscle contraction
97. Work is done in isometric contraction
98. Muscle contracts without shortening
99. Tension developed in the muscle is less than that needed to move the load
100. All of the above
101. Which of the following is not a goal of exercise therapy
102. Release contracted tendon and fascra
103. Reduce rigidity
104. Promote relaxation
105. All of the above

**SECTION B**

1. Briefly describe four(4) indications of passive range of motions [4 marks]
2. Differentiate active movement from active -assisted movement [4 marks]
3. For a patient who is in a supine position indicate four movements in the shoulder joint which you are able to perform passively to full range of motion. [4 marks]
4. Briefly explain how you will position the patient to carryout passive ROM of the neck to full range. [4 marks]
5. Describe four causes of peripheral joint dysfunction [4 marks]
6. Define the following terms:
7. Muscle strength
8. Muscle power
9. Muscle endurance
10. Work [4 marks]

**SECTION C**

1. Discuss the goals of passive range of motion.