Online Examinations (Even Sem/Part-I/Part-II Examinations 2020 - 2021

Course Name - Basics of Biomechanics Course Code - BPT204

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Answer all the questions. Each question carry one mark.

9. 1. Which is not a saddle joint?

- Carpometacarpal of thumb
- Ankle
- Sternoclavicular
- Acromio clavicular

10. 2. Normal carrying angle is

Mark only one oval.

0 – 20 degree

0-30 degree

- 0-10 degree
- 0-40 degree
- 11. 3. Which class is lever of power

Mark only one oval.

- _____1st _____2nd
- 3rd
- _____ 4th
- 12. 4. Which is not an anatomical pulley

- FDP contraction
- Quadriceps contraction
- Hamstring contraction
- Peroneal contraction

13. 5. A small carrying angle means there is a risk of

Mark only one oval.

Inferior dislocation

Posterior dislocation

Superior dislocation

Anterior dislocation

14. 6. The range of abduction of shoulder is less when shoulder is

Mark only one oval.

- Externally rotated
- 📃 In neutral
- In flexion
- 15. 7. Static stabilization of glenohumeral articular surface is provided by

Mark only one oval.

Coracohumeral ligament

- Coraco clavicualar ligament
- Superior joint capsule
- Coraco humeral ligament and superior joint capsule

16. 8. Which is the most important muscle to produce upwards rotation of the scapula

Mark only one oval.

\bigcirc	Serratus anterio
\bigcirc	Trapezius

- Levator scapulae
- Deltoid
- 17. 9. The role of gastrocnemius at knee is

Mark only one oval.

- 🔵 Static stabilizer
- Mobilizer for flexion
- Dynamic stabilizer
- Synergistic for knee flexion
- 18. 10. Which one of the muscle is not included in pes anserinus

Mark only one oval.

Gracilis

- Semimembranosus
- 🔵 Semi tendinosus
- 🔵 Sartorius

19. 11. Which two muscles act to prevent entrapment of menisci during knee motion

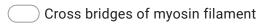
Mark only one oval.

- Semitendinosus & popliteus
- Semimembranosus & popliteus
- 🔵 Sartoris & popliteus
- Gastrocnemius & popliteus
- 20. 12. The joint which is able to withstand the most compressive force

Mark only one oval.

- Facet joint
- 🔵 Hip joint
- Knee joint
- Ankle joint
- 21. 13. The primary contributor to the resistance to passive stretching is

Mark only one oval.



- Thixotrophy of muscle
- Stiffness of tendon

22. 14. Second class lever will always have a lever arm

Mark only one oval.

Equal to 1
More than 1
Less than 1

- More than 2
- 23. 15. In pulled elbow syndrome there is dislocation of

Mark only one oval.

- 📃 Radio-humeral joint
- 🔵 Radio-ulnar joint
- Humero-ulnar joint
- 🔵 Wrist joint
- 24. 16. In triceps paralysis which shoulder muscle can substitute for it

- Anterior deltoid
- Posterior deltoid
- 🔵 Supraspinatus
- Short head of biceps brachi

25. 17. The resultant pull of quadriceps femoris in frontal plane is

Mark only one oval.

- 7degree to 10 degree medially
- 15 degree to 20 degree laterally
- 10 degree to 15 degree medially
- Option 4
- 26. 18. Patellofemoral joint reaction force is maximum at

Mark only one oval.

- Knee extension force
- 15 degree knee flexion
- 60 degree knee flexion
- 100 degree knee flexion
- 27. 19. Hyaline cartilages are found in

Mark only one oval.

____ Ears

- Epiglottis
- Joints

28. 20. Zone of weakness in femur is that

Mark only one oval.

- Where system trabeculae is relatively thin
- Blood supply is less
- muscle coverage is less
- Ligaments are slack
- 29. 21. Quadriceps femoris shows peak force at

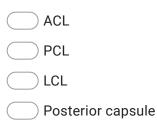
Mark only one oval.

- Outer range
- Inner range
- Mid range
- Through out the range muscle force same
- 30. 22. Delayed onset muscle soreness is most severe at

- 5-10 hours
- 10 30 hours
- 30 45 hours
- ____ 45 60 hours

31. 23. Which knee joint ligament helps in locking

Mark only one oval.



32. 24. Instability occurs at which degree sprain?

Mark only one oval.

- 1 degree
 2 degree
 3 degree
 2 & 3 degree
- 33. 25. In functional position of hand which muscle length is kept at optimal length



- Wrist flexor
- Finger extensor
- Finger flexors

34. 26. For meniscus injury there should be

Mark only one oval.

- Shear of compressed knee
- Torsion of compressed knee
- Shear and torsion of knee
- Torsion of extended knee
- 35. 27. The arthrokinematics of shoulder flexion is

Mark only one oval.

- Roll and slide along joints longitudinal diameter
- Roll and slide along transverse diameter
- Spin movement of articular surface
- A roll of the articulating surface
- 36. 28. During complete shoulder abduction the clavicular movement is

- Elevation and anterior rotation
- Elevation and posterior rotation
- Depression and posterior rotation
- Option 4

37. 29. In which condition muscle force production is more?

Mark only one oval.

Less velocity middle range

- More velocity middle range
- Less velocity outer range
- More velocity inner range
- 38. 30. When two forces applied from one point as the angle between the forces decrease the resultant force.

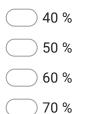
Mark only one oval.

- Decrease
- Increase
- Remains same
- Becomes twice
- 39. 31. Location of centre of mass of body segment is at ______% from proximal end

- 0.4
- 0.45
- 0.55

40. 32. Weight of HAT is about ______% of bodyweight

Mark only one oval.



41. 33. The centre of gravity of HAT is at

Mark only one oval.



42. 34. The lever arm of gastrosoleus muscle force ankle joint



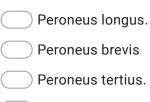
43. 35. At slow speed injury the failure of ligament results in

Mark only one oval.

Ligament disruption
Avulsion

- Complete tear
- Mild tear
- 44. 36. The inability to control pronation by ______ results in tendonitis.

Mark only one oval.



- Opponens pollicis
- 45. 37. Which muscle may not be an extensor of wrist when the forearm is pronated

Mark only one oval.

ECRL

Extensor digitorum

ECRB

ECU

46. 38. Which muscle is the key extensor of the wrist because of its force production

Mark only one oval.

ECRL ECRB

- ____ ECU
- ____ ED
- 47. 39. External rotation of a segment occurs in _____.

Mark only one oval.

- 🔵 a sagittal plane
- 🔵 a transverse plane
- 🔵 a frontal plane
- 🔵 a longitudinal plane
- 48. 40. These cells are responsible for forming new bone.

- Osteoclasts
- Osteopaths
- Osteocytes
- 🔵 Osteoblasts

49. 41. A diarthrodial joint is also known as a _____ joint.

Mark only one oval.

hinge

- ____ condyloid
- synarthrodial
- 🔵 synovial
- 50. 42. The most mobile type of joint is the _____ joint.

Mark only one oval.

- ball-and socket
- saddle)
- ____ pivot
- 🔵 hinge

51. 43. Stress is

- the ratio of the change in length to the resting length
- the amount of force at a particular strain
- the force per unit area
- the stored mechanical energy

52. 44. As a person sits from a standing position, what is the predominant contraction type in the lower extremity?

Mark only one oval.

- Concentric
- Eccentric
- Isotonic
- Isometric
- 53. 45. A single neuron and all the muscle cells it innervates is _____.

Mark only one oval.

- 🔵 a peripheral nerve
- 🔵 a spinal nerve
- 🔵 a motor pool
- 🔵 a motor unit
- 54. 46. The GTO is sensitive to ____.

- ____ muscle length
- ____ movement
- joint position
- muscle tension

55. 47. Which muscle is biarticular?

Mark only one oval.

📃 Biceps brachii

Brachialis

- Brachioradialis
- Coracobrachialis
- 56. 48. The biceps brachii can develop the most force ____.

Mark only one oval.

- when the forearm is pronated
- when the forearm is supinated
- when the forearm is in the neutral position
- when the shoulder is flexed

57. 49. Which structure is not on the scapula?

- Inferior angle
- 📃 Glenoid fossa
- Coracoid process
- 📃 Radial notch

58. 50. Rotator cuff problems can be exacerbated by shoulder _____.

Mark only one oval.

flexion

- extension
- abduction
- adduction
- 59. 51. Power is _____

Mark only one oval.

- the rate of change of velocity
- _____ the product of length and tension

_____ the product of torque and acceleration

- the product of force and velocity
- 60. 52. The connective tissue component of a skeletal muscle that surrounds fibers is called the _____.

- perimysium
- 🔵 epimysium
- endomysium
- tendomysium

61. 53. The all-or-none principle refers to ____.

Mark only one oval.

🔵 a muscle

- 🔵 a muscle fiber
- a muscle fascicle
- 🔵 a motor unit
- 62. 54. The synaptic gap occurs ____.

Mark only one oval.

- 🔵 at a node of Ranvier
- 🔵 in the soma
- at the neuromuscular junction
- _____ at a collateral branch of the nerve
- 63. 55. The structure that connects the radius to the ulna is the _____.

- interosseous membrane
- 🔵 annular ligament
- 🔵 ulnar collateral ligament
- 🔵 radial collateral ligament

64. 56. The sacral movements are ____

Mark only one oval.

flexion, extension, abduction, adduction, and rotation

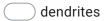
flexion, extension, nutation, and counternutation

flexion, extension, and rotation

- flexion and extension
- 65. 57. The axon of motoneurons is fairly large, making it capable of transmitting impulses up to ____ m/s.

Mark only one oval.

- 30
- ______100
- 300
- 500
- 66. 58. Projections on the cell body receive information called



- 🔵 ganglia
- schwann cells
- ____ microglia

67. 59. What is the muscle structure from smallest to largest?

Mark only one oval.

- Myofilaments, myofibrils, fascicles, fibers, muscle
- Myofibrils, myofilaments, fascicles, fibers, muscle
- Myofibrils, myofilaments, fibers, fascicles, muscle
- Myofilaments, myofibrils, fibers, fascicles, muscle
- 68. 60. This characteristic of bone suggests that the stiffness depends on the rate of loading.

Mark only one oval.

Isotropic Anisotropic Anisotonic Viscoelastic

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