REV-01
BPT/04/10

2022/12

SET A

BACHELOR OF PHYSIOTHERAPY
THIRD SEMESTER
BIOMECHANICS(REPEAT)
BPT-306
[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs. **Full Marks: 70**

Objective

Time: 30 mins. **Marks: 20**

Choose the correct answer from the following: *1×20=20*

1. In anatomical position of human body, the COG lies approximately anterior to _____ vertebra.
   a. L1 b. L2
   c. S2 d. T1

2. The most common type of collagen found in Hyaline cartilage:
   a. Type I b. Type II
   c. Type III d. Type IV

3. Recruitment of motor unit is based on:
   a. Energy conservation b. Previous experience
   c. Nature of task d. All of the above

4. During pronation and in full elbow flexion, the carrying angle:
   a. Disappears b. Increases
   c. Decreases d. Remains the same

5. The study of the condition in which objects remains at rest is called as:
   a. Kinetics b. Kinematics
   c. Statics d. Dynamics

6. Valgus stabilizers of knee include all, except:
   a. Anterior cruciate ligament b. Posterior cruciate ligament
   c. Arcuate ligament d. Miniscofemoral ligament

7. At rest, the Gravity acting on the humerus produce
   a. Abduction b. Adduction
   c. Rotation d. Extension

8. Functional position for Wrist is:
   a. Slight extension(20°) with slight Ulnar deviation (10°) b. Slight extension(35°) with slight Radial deviation (10°)
   c. Slight extension(20°) with slight Radial deviation (15°) d. Slight extension(30°) with slight Ulnar deviation (10°)

9. Strongest plantar flexor of the ankle is:
   a. Plantaris b. Gastro-soleus
   c. Tibialis posterior d. Peroneus

10. The body weight is directly over the supporting extremity at:
    a. Heel off
    b. Foot flat
    c. Midstance
    d. Terminal stance

11. The intervertebral disc increases in size from the _____ to _____ region.
    a. Cervical to Lumbar
    b. Cervical to Sacral
    c. Cervical to Mid Lumbar
    d. Lumbar

12. The structure attach to the periphery of the glenoid cavity is called as___:
    a. Cup
    b. Cavity
    c. Labrum
    d. All the above

13. For the movement to take place between two joint surfaces, the joint should have:
    a. Rolling
    b. Gliding
    c. Spinning
    d. Joint play

14. _____ muscle play vital role in lateral prehension.
    a. Lumbricals
    b. Interossei
    c. FDP
    d. EDC

15. The bending moment along the head and neck of femur is increased:
    a. Coxa vara
    b. Coxa valga
    c. Anteversion
    d. Retroversion

16. Abdominal contract and produce _____ force to Vertebral column.
    a. Distraction force
    b. Compression force
    c. Torsion
    d. Axial rotation

17. Muscle creates movement based on the:
    a. Insertion
    b. Origin
    c. Net force produced by it
    d. Muscle bulk

18. Normal cadence is in between
    a. 40-80 steps per minute
    b. 80-120 steps per minute
    c. 100-120 steps per minute
    d. 80-100 steps per minute

19. All of the following muscles originate from medial epicondyle of Humerus except:
    a. FRC
    b. FCU
    c. Palmaris longus
    d. FDP

20. When the agonist and antagonist contract simultaneously it is called:
    a. Contraction
    b. Co-contraction
    c. Facilitation
    d. Irritation

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Descriptive

Time : 2 hrs. 30 mins. **Marks : 50**

[Answer question no.1 & any four (4) from the rest]

1. Write in detail the static and dynamic stabilization of Glenohumeral joint. Describe in brief the Sternoclavicular joint. 5+5=10

2. Describe the Flexion and Extension mechanism of the Hand. Also write the types of Prehension of the Hand 5+5=10

3. What is the role of the Menisci in the Knee joint? Write notes on 'screw home mechanism' of the Knee. 5+5=10

4. What are the Plantar arches? Write the structure and function of plantar arches, and mention the weight distribution on the Foot. 8+2=10

5. Write the kinetics and kinematics of Cervical Vertebra. Also mention the structure of Intervertebral Disc of Cervical Vertebra 5+5=10

6. Describe the structural adaptation of the Hip joint to weight bearing and the coordinated motions of femur, pelvis and lumbar spine. 10

7. Define Gait. Elaborate Gait Cycle and its Kinematics. 10

8. Write in detail the composition of muscle fibre. Explain the Sliding filament Theory with a suitable diagram. 5+5=10

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