

**BACHELOR OF PHYSIOTHERAPY
THIRD SEMESTER (SPECIAL REPEAT)
BIOMECHANICS
BPT-306**

(Use separate answer scripts for Objective & Descriptive)

Duration: 3 hrs.

Full Marks: 70

[PART-A: Objective]

Time: 20 min.

Marks: 20

Choose the correct answer from the following:

1 × 20 = 20

1. GENU VALGUM is also known as
 - a. Knock knees
 - b. Bow knees
 - c. Coxa valga
 - d. Anteversion
2. Linear distance between two successive events that are accomplished by the same lower extremity during gait is known as
 - a. Step length
 - b. Stride length
 - c. Cadence
 - d. Width of BOS
3. MOUTH OPENING is also known as
 - a. Mandibular elevation
 - b. Mandibular protrusion
 - c. Mandibular retrusion
 - d. Mandibular depression
4. Squatting is a/an
 - a. Closed kinematic chain exercise
 - b. Open kinematic chain exercise
 - c. Weight bearing exercise
 - d. Both a and c
5. Cubitus valgus is
 - a. Increase in carrying angle
 - b. Decrease in carrying angle
 - c. Increase in Q angle
 - d. Decrease in Qangle
6. 70-80% quite inspiration is done by
 - a. Pectoralis major
 - b. Diaphragm
 - c. Intercostal muscles
 - d. Sternocleidomastoid
7. Cylindrical grip is a type of
 - a. Precision handling
 - b. Power grip
 - c. None
 - d. Both a and b
8. Deltoid ligament is present in
 - a. Shoulder joint
 - b. Elbow joint
 - c. Ankle joint
 - d. Knee joint
9. Body weight is directly over the progressing limb during
 - a. Foot flat
 - b. Mid swing
 - c. Heel strike
 - d. Toe off
10. Synchondrosis is a type of
 - a. Diarthrorial joint
 - b. Synarthrorial joint
 - c. Fibrous joint
 - d. None

11. During standing COG passes through
 - a. S1
 - b. S2
 - c. L1
 - d. L2
12. During unilateral stance cane should be held
 - a. Ipsilaterally
 - b. Contralaterally
 - c. Does not matter
 - d. None
13. Distraction injury in children is known as
 - a. Nursemaid's elbow
 - b. Bunnell's sign
 - c. Housemaid's knee
 - d. Cross eyed patella
14. Screw home mechanism of the knee is also known as
 - a. Locking mechanism of the knee
 - b. Unlocking mechanism of the knee
 - c. Axial rotation
 - d. None
15. Mechanical disadvantage is seen in
 - a. 1st order lever
 - b. 2nd order lever
 - c. 3rd order lever
 - d. None
16. Angle of inclination in humerus is
 - a. 130-150 degree
 - b. 150-180 degree
 - c. 110-130 degree
 - d. 180-210 degree
17. Movement occurring inside the joint during movement is known as
 - a. Osteokinematics
 - b. Arthokinematics
 - c. Osteokinetics
 - d. Orthokinetics
18. Negative pressure inside the glenohumeral joint helps in
 - a. Dynamic stabilisation
 - b. Joint lubrication
 - c. Friction
 - d. Static stabilisation
19. Hip joint is an example of
 - a. Saddle joint
 - b. Ball and socket joint
 - c. Multiaxial joint
 - d. Both b and c
20. Degree of toe out is
 - a. 5 degree
 - b. 6 degree
 - c. 7 degree
 - d. 8 degree

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(PART-B : Descriptive)

Time : 2 hrs. 40 min.

Marks : 50

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

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| 1. Broadly classify joints with examples. Write about joint lubrication. | 10 |
| 2. a. Define gait and phases of gait.
b. Write about determinants of gait. | 5+5=10 |
| 3. a. Describe static stabilisation of shoulder joint.
b. Explain passive insufficiency. | 5+5=10 |
| 4. a. Explain reduction of muscle force in unilateral stance by using cane in contralateral side.
b. Describe angle of torsion. | 5+5=10 |
| 5. Explain the mechanism that occurs in unilateral stance. Write about the compensation that can be done to reduce the total joint compression force. | 5+5=10 |
| 6. What are the various factors which affects muscle function? Explain passive insufficiency. Mention the effects of immobilisation and aging on muscles. | 3+4+3=10 |
| 7. Explain the composition of skeletal muscle fibre. Write about the contractile unit of the muscles. | 5+5=10 |
| 8. Short notes on:
a. Coupling pattern
b. Reciprocal click
c. Load deformation curve | 4+3+3=10 |

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