Multiple Choice Questions

1. Ribs and articular caps are formed of cartilage  A) elastic   B) hyaline   C) fibrocartilage   D) none of these

2. Intervertebral discs and pubic symphysis are formed of  A) elastic   B) hyaline   C) fibrocartilage   D) none

3. Phalanges belong to category of ------ bones  A) irregular   B) flat  C) long     D) short

4. Bone functions do not include
   A) blood cell formation    B) storage of minerals   C) synthesis of vitamin D   D) act as levers

5. Bones are covered with a fibrous layer having blood vessels called
   A)perichondrium   B)endosteum   C) sarcolemma   D) periosteum

6. Osteogenesis is done by  A) osteoblasts   B) osteoclasts C) osteocytes   D) chondrocytes

7. Hematopoietic tissue produces  A) bone matrix   B) cartilage matrix  C) blood cells   D) osteocytes

8. Central canal surrounded by concentric layers of bone material having spaces and cells in it is
   A) lamella   B) osteon   C) lacuna  D) trabecula

9. Thin filament is formed of  A) actin   B) troponin   C) tropomyosin   D) all of these

10. Ca$^{2+}$ ions are released by ---------- during muscle contraction
   A) t-tubules   B) terminal cisternae   C) sarcolemma   D) neuromuscular junction

11. During muscle contraction  A) thin filaments contract   B) thick filaments contract  C) thick filaments slide over thin filaments   D) thin filaments slide over thick filaments

12. Joining of Ca$^{2+}$ to troponin  A) separates myosin head from actin   B) result in power stroke  C) exposes binding sites of actin   D) changes ATP to ADP

13. Each fascicle is covered by connective tissue covering
   A) perimysium   B) endomysium   C) epimysium   D) sarcolemma

14. Part of sarcomere with only thick filaments is  A) A-band   B) D-band   C) H-zone   D) Z-line

15. Biceps brachii and triceps brachii are  A) synerists  B) antagonists  C) agonists  D) contract simultaneously

16. T-tubules carry A) Ca$^{2+}$   B) blood and nutrients   C) wave of depolarisation   D) oxygen

17. Bending of neck backwards from normal position, is  A) flexion   B) extension   C) hyperextension   D) adduction

18. Lateral movement of wrist in anatomical position is  A) flexion   B) abduction    C) adduction   D) extension

19. Anterior movements of arm / shoulder is  A) flexion   B) abduction   C) adduction   D) extension

20. Contraction of gastrocnemius and soleus muscles result in  A) plantar flexion   B) dorsiflexion   C) leg flexion   D) none
**Match the terms**

<table>
<thead>
<tr>
<th>21. Osteon is present in</th>
<th>A. 80 bones</th>
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<tr>
<td>22. Vitamin D or Calcium deficiency causes</td>
<td>B. Spongy bone</td>
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<tr>
<td>23. Epiphysis has</td>
<td>C. Compact bone</td>
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<tr>
<td>24. Axial skeleton</td>
<td>D. 126 bones</td>
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<td>25. Appendicular skeleton</td>
<td>E. Osteomalacia / rickets</td>
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<tr>
<th>26. Polarisation = resting potential</th>
<th>A. sarcomere</th>
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<td>27. Depolarization = action potential</td>
<td>B. femur</td>
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<td>28. Part of myofibril b/w 2 Z-lines</td>
<td>C. – ions dominate inside membrane</td>
</tr>
<tr>
<td>29. Head, trochanters, condyles</td>
<td>D. + ions dominate outside membrane</td>
</tr>
<tr>
<td>30. Head, tubercles, trochlea</td>
<td>E. humerus</td>
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**Small Answer Questions – Each Question = 2 marks**

31. Distinguish between compact and spongy bones.

32. Write a brief note about arrangement of thin and thick filaments in a sarcomere.

33. What are antagonist muscles? Give one example from thigh.

34. Name muscles for abduction and adduction of arm / shoulder.

35. What is a keystone bone? Name keystone bones of cranium and face.

**Completion Questions**

36. Epiphyses of bones are formed of -------- bone and diaphysis is formed of ------ bone.

37. -------------- is the chemical secreted in synapse by axon terminals.

38. A biceps muscle has ---- origins and a triceps muscle has ------ origins.

39. During muscle contraction -------- moves closer to -------- of muscle.

40. Brachialis and brachioradialis muscles act as ------------ for biceps brachii.

41. Bulk of muscle lies ------------ to insertion of the muscle.

42. -------------- joint is most complex joint of body but ------- joint is most freely moveable joint of body.

43. Wrist has ------ carpals and ankle has ------ tarsals.
44. Ulna lies -------- to radius and fibula lies -------- to tibia.

45. Head of Femur articulates with ---------- of coxal bone and head of humerus articulates with -------- of scapula.