EXERCISE-I

AXIAL SKELETON

1. In man ribs are attached to
(A) Clavicle (B) Ileum
(C) Sternum (D) Scapula

2. The first vertebra, the atlas by its articulation with axis vertebra facilitates a
(A) Noding movement
(B) Sideway movement
(C) Rotatory movement
(D) Backward movement

3. The second vertebra, the axis which helps in a rotatory movement of the head has a knob like process called
(A) Hypapophysis
(B) Metapophysis
(C) Odontoid process
(D) Zygapophysis

4. The vertebra in which the centrum is absent is
(A) Cervical (B) Atlas
(C) Axis (D) Thoracic

5. The vertebratrial canal is present in the vertebrae that are
(A) Sacral (B) Caudal
(C) Lumber (D) Cervical

6. In the case of most of the mammals including man and Giraffe, the number of cervical vertebrae are
(A) 8 (B) 7
(C) 9 (D) 10

7. The number of vertebrae in rabbit is
(A) 40 (B) 33
(C) 44 (D) 46

8. Lumber vertebra are found in
(A) Neck region
(B) Abdominal region
(C) Hip rigion
(D) Thorax

9. Of the following, the membrane bone in frog is
(A) Fronto-parietal (B) Sphenethmoid
(C) Pro-otics (D) Exo-occipital

10. The opening at the base of the skull for the spinal cord is called
(A) Foramen Magnum
(B) Foramen of Monro
(C) Obturator foramen
(D) Foramen of Magendie

11. Which bone during its development is not a cartilage
(A) Malleus (B) Humerus
(C) Incus (D) Nasal

12. In man the nasal cavity is separated from the buccal cavity by a bone which is known as
(A) Palate complex (B) Lingual bone
(C) Soft palate (D) Hyoid apparatus

13. The notochord in vertebrates is modified into
(A) Vertebral column
(B) Centrum of vertebrae
(C) Body of vertebrae
(D) Transverse process of vertebrae

14. Inter-vertebral disc is a
(A) Fibro cartilage between the centrum of vertebrae
(B) Pad in the centrum of bone
(C) Cartilage bone in the body
(D) Body of vertebrae

15. The hardest substance present in the
(A) Bone– Ossein (B) Chitin – Protein
(C) Tooth– Enamel (D) Muscle–Myosin

16. In mammals, the largest vertebra is
(A) Cervical (B) Lumbar
(C) Caudal (D) acral

17. What is correct about human body
(A) There are 5 vertebra in the neck
(B) Brain box is made up of 4 bones
(C) There are 15 pairs of ribs
(D) There are 12 thoracic vertebra

18. In mammals, the zygomatic arch is formed by
(A) Maxilla, premaxilla and squamosal
(B) Periotic, jugal and palatine
(C) Maxilla, squamosal and jugal
(D) Jugal, maxilla and periotic

19. Arytenoid cartilages are found in
(A) Hyoid (B) Sternum
(C) Larynx (D) Nose

20. The bones that form a bridge between the cranium and the upper jaw dorsally and ventrally, are respectively
(A) Squamosal and pterygoid
(B) Quadratojugal and pro-otic
(C) Both the exo-occipitals
(D) Maxillary and quadrate

21. The smallest bone in rabbit's or man's skeleton is
(A) Nasal (B) Stapes
(C) Patella (D) Palatine

22. Innominate is a
(A) Nerve (B) Muscle
(C) Animal (D) Part of skeleton

23. Which one of the following is enclosing the tympanum in mammals
(A) Tympanic membrane
(B) Tympanic bulla
(C) Mastoid
(D) Periotic and tympanic bulla

24. Part of axial skeleton which includes upper jaw, lower jaw, hyoid apparatus and gill arches is called as
(A) Splanchnocranium
(B) Neurocranium
(C) Dermocranium
(D) Chondrocranium

25. Posterior terminal part of the vertebral column in man and other tailless apes is known as
(A) Coccyx (B) Filum terminale
(C) Telson (D) Urostyle

26. The presence of auditory capsule, called tympanic bulla is characteristic of
(A) Skull of frog (B) Skull of rabbit
(C) Skulls of both (D) None of these

27. The odontoid process of axis vertebra in mammals is regarded as
(A) A process of neural spine
(B) Rib of axis vertebra
(C) Centrum of atlas vertebra
(D) Remainant of centrum of atlas

28. Which one of the following vertebrae of rabbit has long and backwardly directed neural spine
(A) Cervical (B) Lumbar
(C) Sacral (D) Thoracic

29. In man the thoracic basket is composed of
(A) Ribs and thoracic vertebrae
(B) Ribs and sternum
(C) Ribs, sternum and vertebrae
(D) Ribs, sternum and thoracic vertebrae

30. In man the axial skeleton is made up of
(A) 80 bones (B) 100 bones
(C) 103 bones (D) 106 bones

31. A *Y*–shaped bone is
(A) Squamosal (B) Palatine
(C) Quadrato-jugal (D) Pterygoid

32. The number of floating ribs in human body is
(A) 6 pairs (B) 3 pairs
(C) 5 pairs (D) 2 pairs

33. Long neck of camel is due to
(A) Increase in length of cervical vertebra
(B) Due to bony plate between two vertebra
(C) Due to muscle in between two vertebra
(D) None of the above

34. Sella turcica is found in which bone
(A) Alesphenoid (B) Parietal
(C) Frontal (D) Basi-sphenoid

35. Sternum of mammal consists of
(A) A xiphisternum and a xiphoid cartilage
(B) 4 sternebrae, a xiphisternum and a xiphoid
(C) 6 sternebrae, a xiphisternum and a xiphoid
(D) 6 sternebrae and a xiphoid cartilage

36. Foramen magnum, occipital condyles are found in
(A) Parietal bone (B) Ethmoid bone
(C) Sphenoid bone (D) Occipital bone

37. Zygomatic arch in the skull of mammal (rabbit) is formed of
(A) Jugal and squamosal
(B) Quadrato jugal and pterygoid
(C) Squamosal and palatine
(D) Palatine and jugal

38. Elastic cartilage is found in
(A) The trachea
(B) The auditory tube
(C) The intervertebral disc
(D) None of the above

39. The vertebrae in which centrum is absent and transverse process are present is known as
(A) Lumber vertebrae (B) Anterior thoracic
(C) Axis vertebrae (D) Atlas vertebrae

40. Nucleus pulposus is
(A) A type of special cell found in myelin sheath of a nerve cell of vertebrate
(B) A depression for pituitary is found in mammalian skull
(C) A large nucleus found in Schwann cells of nerve fibre
(D) A remain of embryonic notochord found in the central portion of inter-vertebral discs of vertebrae of mammals

41. The vertebrae in birds are mostly
(A) Procoelous (B) Amphicoelous
(C) Opisthocoelous (D) Heterocoelous

42. Bone related to skull is
(A) Atlas (B) Caracoid
(C) Artenoid (D) Pterygoid

43. Mentomeckelian is specially characteristic bone of
(A) *Equus* (B) *Rana tigrina*
(C) *Bos indicus* (D) *Felis domesticus*

44. In birds, some of the vertebrae are fused to form
(A) Keel (B) Synsacrum
(C) Syncytium (D) Furcula

45. The number of cervical vertebrae in camels is
(A) Same as that in rabbit
(B) Same as that in frog
(C) Less than that in giraffe
(D) More than that in horse

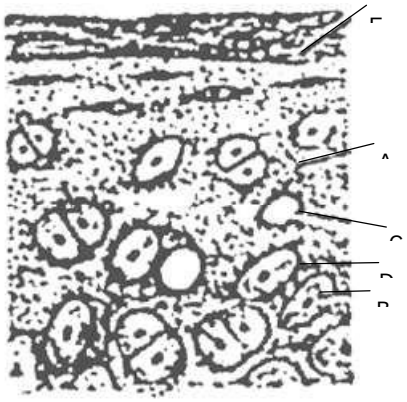
46. Cervical vertebrae are located in
(A) Thoracic region
(B) Abdominal region
(C) Neck region
(D) Lumbar region

47. The number of lumbar vertebrae in human vertebral column is
(A) 12 (B) 7
(C) 5 (D) 2

48. How many ribs are present in human beings
(A) 6 pairs (B) 9 pairs
(C) 12 pairs (D) 15 pairs

49. The parasphenoid bone in frog forms
(A) Base of cranium
(B) Floor of cranium
(C) Dorsal side of cranium
(D) Dorsolateral side of cranium

50. In the diagram of section of Hyaline cartilage, the different parts have been indicated by alphabets; choose the answer in which these alphabets correctly match with the parts they indicate



(A) A = perichondrium B= Chondrocyte C= Lacuna D= Capsular matrix E= Chondrin

(B) A= Capsular matrix B= Chondrocyte C= Lacuna D= Perichondrium E= Chondrin

(C) A= Chondrin B= Chondrocyte C= Lacuna D= Capsular matrix E= Perichondrium

(D) A= Chondrin B= Lacuna C= Chondrocyte D= Capsular matrix D= Perichondrium

APPENDICULAR SKELETON

51. The bone of mammals contains Haversian canals which are connected by transverse canals known as

(A) Bidder's canal
(B) Inguinal canal
(C) Volkmann's canal
(D) Semicircular canal

52. The cup-shaped cavity for the articulation of the head of the femur is called

(A) Glenoid cavity (B) Acetabulum
(C) Obturator (D) Sigmoid notch

53. Outer covering of cartilage is

(A) Perichondrium (B) Periosteum
(C) Endo-osteum (D) Peritonium

54. Which is modified to form sesamoid bone

(A) Tendon (B) Ilium
(C) Pubic (D) Coracoid

55. Transverse process of sacral vertebrae are attached to which part of pelvic girdle

(A) Mastoid process (B) Ilium
(C) Ischium (D) Pubis

56. Haversian system is found in

(A) Atlas of man (B) Ilium of man
(C) Femur of man (D) Lumbar of man

57. The function of Haversian canal is

(A) Nutrition
(B) Respiration
(C) Excretion
(D) Both nutrition and respiration

58. The pelvic girdle of birds is attached to a complex structure formed by the fusion of last thoracic, all lumbar and first five caudal vertebra. This structure is called

(A) Synsacrum (B) Symphysis
(C) Synkaryon (D) Sympelvis

59. Cartilage is formed by

(A) Osteoblasts (B) Chondriocytes
(C) Fibroblasts (D) Epithelium

60. The total number of ear bones in man is

(A) 3 (B) 6
(C) 4 (D) 2

61. The total number of bones in your right arm is

(A) 30 (B) 32
(C) 35 (D) 40

62. Bone which is formed by ossification in the tendon of muscle, is

(A) Investing (B) Cartilaginous
(C) Sesamoid (D) Membranous

63. An acromian process is characterisically found in rabbit/mammals in
(A) Pelvic girdle (B) Pectoral girdle
(C) Skull (D) Sternum

64. Which pair does not have corresponding bone
(A) Humerus and femur
(B) Pectoral and pelvic girdle
(C) Atlas and coccyx
(D) Carpals and tarsals

65. Which one of the following component is the part of pectoral girdle
(A) Acetabulum (B) Hilum
(C) Sternum (D) Glenoid cavity

66. Which of the following movements in man are directly concerned with locomotion
(A) Bending of arm at elbow
(B) Rotation of head of femur in acetabulum
(C) Peristalic movements
(D) Contraction of the heart

67. Ends of long bones are covered with
(A) Cartilage (B) Muscles
(C) Ligaments (D) Blood cells

68. Olecranon process is found in
(A) Proximal end of ulna
(B) Distal end of ulna
(C) Proximal end of tibia
(D) Proximal end of humerus

69. The articulation of vertebrae in vertebral column is when
(A) Post-zygapophyses of a vertebra in front fit beneath the pre-zygapophyses of the another vertebra behind
(B) Post-zygapophyses of a vertebra in front fit over the pre-zygapophyses of another vertebra behind
(C) Pre-zygapophyses of a vertebra fit over the post-zygapophyses of the vertebra in front
(D) Pre and post-zygapophyses of vertebra simply touch one another

70. Which part of mammalian body has a single pair of bones
(A) External ear (B) Lower jaw
(C) Pelvic girdle (D) Wrist

71. Presence of furcula is a characteristic feature of
(A) Frogs (B) Reptiles
(C) Birds (D) Mammals

72. In children the bones are more flexible and brittle because their bones have
(A) Large quantity of salts and little organic substances
(B) Large quantity of organic substances and little salts
(C) Well developed Haversian system
(D) Large number of osteoblasts

73. Rotation of thigh on lateral sides is facilitated by
(A) Gluteus medius
(B) Gluteus minimus
(C) Iliacus
(D) Obturator externus

74. Triceps muscle joins ulna with
(A) Radius (B) Humerus
(C) Phallanges (D) Suprascapula

75. Bones act as reservoir of which mineral salts
(A) Sodium and magnesium
(B) Calcium and sodium
(C) Calcium and magnesium
(D) Copper and iron

76. Innominate or hip bone is formed by the fusion of how many bones
(A) 2 (B) 3
(C) 4 (D) 5

77. The pelvic girdles of females are ..... than those of males
(A) Narrower (B) Broader
(C) Stoughter (D) (A) and (B) both

78. Phallangeal formula of hand of man is
(A) 1, 2, 2, 2, 2 (B) 2, 1, 1, 1, 1
(C) 2, 3, 3, 3, 3 (D) 2, 3, 3, 2, 2

79. Thumb (great toe) of foot is called
(A) Pollex (B) Hollex
(C) Pallux (D) Hallux

80. Obturator foramen in pelvic girdle of mammal is formed by
(A) Pubis and ischium
(B) Pubis and ilium
(C) Ilium and ischium
(D) Ilium, ischium and pubis

81. The sigmoid notch is present in
(A) Femur (B) Tibio-fibula
(C) Humerus (D) Ulna

82. Ankle bones have 6 tarsals and arranged in three rows then 1st row have
(A) Astragalus and calcaneum
(B) Pterygoid and astragalus
(C) Pterygoid and calcaneum
(D) None of these

83. What will happen if a bone is kept in 10% *KOH* solution for 3 days
(A) Remain unchanged
(B) Dissolved
(C) Become soft and elastic
(D) Break

84. What is the difference between the bone of rabbit and that of frog
(A) In the bone of rabbit haversian canal is found
(B) Yellow marrow is found
(C) Osteocytes are of different types
(D) Bone of frog is spongy

85. Patella is associated with
(A) Elbow (B) Knee
(C) Neck (D) Wrist

86. Which one of the cartilage helps in early birth of a child, without damage to the pelvic girdle
(A) Hyaline cartilage (B) Elastic cartilage
(C) Calcified cartilage (D) Fibrous cartilage

87. Red bone marrow is present in
(A) Tips of long bones
(B) Tips of short bones
(C) Bones of skull
(D) Shaft of long bones

88. Olecranon process is a kind of
(A) Investing bone (B) Membrane bone
(C) Cartilaginous bone (D) Sesamoid bone

89. Haversian canals are found in
(A) Spinal cord (B) Brain
(C) Long bones (D) Sponge

90. In mammals each half of pectoral girdle consists of
(A) Supra scapula (B) Scapula
(C) Coracoid (D) All the above

JOINTS

91. Joints are lubricated by
(A) Epidermis
(B) Dermis
(C) Tympanic membrane
(D) Synovial fluid

92. The joint between the lower jaw and the skull is
(A) Gliding (B) Hinge
(C) Perfect joint (D) Saddle joint

93. Ball and socket joints can be seen in
(A) Wrist (B) Fingers
(C) Neck (D) Shoulders

94. The type of joint between the human skull bones is
(A) Synarthrodial joint (B) Synovial joint
(C) Cartilaginous joint (D) Fibrous joint

95. Bone joints are made up of
(A) Cardiac muscles
(B) Elastin fibres
(C) Skeletal muscle fibres
(D) Collagen fibres

96. The knee joint in between the thigh and lower leg is a
(A) Hinge joint (B) Gliding joint
(C) Pivot joint (D) Fixed joint

97. When the head of humerus fits into glenoid cavity, joint is
(A) Ball and socket joint (B) Hinge joint
(C) Pivot joint (D) Saddle joint

98. Joint of wrist is of
(A) Hinge type
(B) Ball and socket type
(C) Pivot type
(D) None of these

99. The joint between the carpal bones and tarsal bones is
(A) Gliding joint
(B) Ball and socket joint
(C) Hinge joint
(D) Saddle joint

100. The joint between skull and atlas which allows nodding movement is called
(A) Atlanto-occipital joint
(B) Atlanto-axial joint
(C) Occipital condyle
(D) None of the above

101. The end of long bones are connected to each other by
(A) Muscles (B) Tendons
(C) Ligaments (D) Cartilage

102. Joint between ribs and sternum is
(A) Cartilagenous (B) Angular joint
(C) Fibrous joint (D) Gliding joint

103. Sutural joints are found between
(A) Parietals of skull
(B) Humerus and radio-ulna
(C) Glenoid cavity and pectoral girdle
(D) Thumb and metatarsal

104. Ball and socket joint is found between
(A) Ribs and vertebral
(B) Femur and tibio-fibula
(C) Humerus and olecranon fossa
(D) Humerus and pectoral girdle

105. Tendon is a structure which connects
(A) A bone with another bone
(B) A nerve with a muscle
(C) A muscle with a bone
(D) A muscle with a muscle

106. Synovial joints is
(A) Pivot joint
(B) Hinge joint
(C) Ball and socket joint
(D) All of these

107. .....acts as a shock absorber to cushion when tibia and femur came together
(A) Ligament (B) Cartilage
(C) Tendon (D) Disc

108. True joints are
(A) Synchondroses (B) Syndesmoses
(C) Synovial (D) Ball and socket

109. Achilles tendon is associated with
(A) Gluteus muscle
(B) Hamstring muscle
(C) Quadriceps muscle
(D) Gastrocnemius muscle

110. Which of the following lubricates ligament and tendons and is an important constituent of synovial fluid of bones

(A) Pectins

(B) Lipids

(C) Hyaluronidase

(D) Hyaluronic acid

MUSCLES

111. The sliding filament theory to explain muscular contraction was given by

(A) Corti

(B) H.E. Huxley

(C) A.F. Huxley

(D) Huxley and Huxley

112. The contraction of muscle of shortest duration is seen in

(A) Heart (B) Jaws

(C) Intestine (D) Eyelids

113. 'Gastrocnemius' is a muscle of

(A) Forelimbs

(B) Thigh

(C) Shank

(D) Abdomen of frog

114. Name the connective tissue sheath which surrounds the muscle bundles

(A) Epimysium (B) Endomysium

(C) Perimysium (D) Sarcomere

115. Muscles responsible for the movement of food in the stomach are

(A) Unstriated

(B) Striated

(C) Cardiac

(D) None of the above

116. What is sprain

(A) More pulling of tendon

(B) Less pulling of tendon

(C) More pulling of ligament

(D) Less pulling of ligament

117. Muscles are red because of the presence of

(A) Myoglobin and mitochondria

(B) Haemoglobin and golgi bodies

(C) Globulin and mitochondria

(D) Protein and lysosome

118. Black bands of myofibrils are known as

(A) Isometric band

(B) Anisotropic band

(C) Isotonic band

(D) Heterotropic band

119. The muscle fatigue occurs due to accumulation of

(A) Pyruvic acid (B) ATP

(C) Lactic acid (D) Eroman CO_2

120. The functional unit of the contractile system in the striped muscle is

(A) Z–band (B) A–band

(C) Myofibril (D) Sarcomere

121. Muscles of the heart are

(A) Voluntary striated

(B) Voluntary smooth

(C) Involuntary striated

(D) Involuntary smooth

122. At times the ligaments are overstretched or torn. It is called

(A) Dislocation (B) Fracture

(C) Sprain (D) Tension

123. Contraction of a muscle is caused by

(A) Myosin (B) Actin

(C) ATP (D) Actomyosin

124. The biceps and tricep muscles are found in
(A) Fore arm (B) Shank
(C) Shoulder (D) Lower jaw

125. The dark bands (A–bands) of a skeletal muscle are known as
(A) Isotropic bands
(B) Anisotropic bands
(C) Intercalated disc
(D) Cross bridges

126. Ciliary muscles are found in
(A) Diaphragm of a mammal
(B) Eyes of vertebrates
(C) Heart of vertebrates
(D) Stomach of frog

127. Intercostal muscles are found in
(A) Fingers (B) Thoracic ribs
(C) Femur (D) Radius-ulna

128. Heart beat is controlled by a nodal tissue which is made up of specialised cardiac muscles, called
(A) Purkinje fibres (B) Myonemes
(C) Collagen fibres (D) Telodendria

129. Papillary muscles are found in
(A) Haemocoel
(B) Heart of cockroach
(C) Arm
(D) Heart of mammal

130. During muscle contraction
(A) Chemical energy is changed into electrical energy
(B) Chemical energy is changed into mechanical energy
(C) Chemical energy is changed into physical energy
(D) Mechanical energy is changed into chemical energy

131. The time period between the beginning of electrical response and peak of tension recorded is
(A) Contraction time (B) Latent period
(C) Refractory period (D) Relaxation time

132. The special contractile protein actin is found in
(A) Thick filaments of A–bands
(B) Thin filaments of I–bands
(C) Both thick and thin bands
(D) Whole of myofibril

133. Which one of the following events is thought to be most closely related to the sliding process between the two types of filaments which bring about contraction of the fibril
(A) The liberation of acetyl choline at the motor end plates
(B) Splitting of an ATP myosin complex
(C) The influx of sodium ions through the sarco-lemma
(D) Binding of calcium ions

134. During muscular contraction, the
(A) I–zone will decrease in length
(B) A–zone will decrease in length
(C) Z–zone will decrease in length
(D) H–zone will decrease in length

135. The superior rectus muscle
(A) Closes lips
(B) Closes eye
(C) Flexes vertebral column
(D) Rolls eye ball upward

136. Action potential in a muscle fibre is
(A) – 90 mV (B) – 80 mV
(C) 45–50 mV (D) 90–mV

137. Oxygen can be stored in

(A) Red muscle fibres

(B) White muscle fibres

(C) (A) and (B) both

(D) None of the above

138. Tensor tympani is a small muscle that

(A) Holds the tympanum or ear drum in position

(B) Connects the stapes to the wall of the tympanic chamber in the ear of a mammal

(C) Connects the malleus to the wall of the tympanic chamber in the ear of a mammal

(D) Connects the incus to the wall of the tympanic chamber in the ear of a mammal

139. The term refractory period with reference of muscle tissue refers to

(A) A period when stimulation does not lead to contraction

(B) A period when maximum contraction occurs

(C) Time gap between application of stimulus and occurrence of contraction

(D) Loss of transluscency in muscle fibres due to death of animal

140. Cori's cycle operates in

(A) Liver

(B) Liver and muscles

(C) Nerve

(D) Muscles