Biology:

Support & Motion

1. Question1 points

Which of the following is the largest bone in the human body?

1. A. Femur
2. B. Sternum
3. C. Scapula
4. D. Hummers

Correct

Explanation A

The head of the femur articulates with the acetabulum in the pelvic bone forming the hip joint, while the distal part of the femur articulates with the tibia and patella forming the knee joint. By most measures the femur is the strongest bone in the body. The femur is also the longest bone in the body.

2. Question1 points

Which part of the skeletal muscle contracts?

1. A. Origin
2. B. Insertion
3. C. Belly
4. D. None of the above.

Correct

Explanation C

Belly is the region between origin and insertion that contracts.

3. Question1 points

How many vertebrae are present in vertebral column of man?

1. A. 33 vertebrae
2. B. 33 pairs of vertebrae
3. C. 25 vertebrae
4. D. 25 pairs of vertebrae

Correct

Explanation A

4. Question1 points

Bone matrix is hardened by the

1. A. Harversian canals
2. B. Canaliculfs
3. C. Bone marrow tissue
4. D. Calcium phosphate

Correct

Explanation: D

Connective tissue with a matrix hardened by minerals (calcium phosphate)

Individual bones consist of bone tissue, marrow, blood, cartilage and periosteum

Continually remodels itself

Functions of the skeletal system

ü Support, protection, movement, electrolyte balances, acid-base balance and blood formation

5. Question1 points

Which one of the following is a bone of axial skeleton?

1. A. Femur
2. B. Ribs
3. C. Radius
4. D. Clavicle

Correct

Explanation B

Ribs are a part of axial skeleton. The axial skeleton is the part of the skeleton that consists of the bones of the head and trunk of a vertebrate. In the human skeleton, it consists of 80 bones and is composed of six parts; the skull (22 bones), also the ossicles of the middle ear, the hyoid bone, the rib cage, sternum and the vertebral column.

6. Question1 points

Axial skeleton consist of how many bones?

1. A. 79
2. B. 80
3. C. 81
4. D. 82

Correct

Explanation B

Axial Skeleton Consist of 80 bones.

7. Question1 points

How many vertebrae are present in coccyx?

1. A. 7
2. B. 12

3. C. 5

4. D. 4

Correct

Explanation D

8. Question1 points

Skeletal muscle has how many parts?

1. A. 5

2. B. 4

3. C. 3

4. D. 2

correct

Explanation C

Skeletal muscle has three parts:

1. Origin

2. Belly

3. Insertion

9. Question1 points

Each end of muscle is attach to the bone by which of the following?

1. A. Ligament

2. B. Tendon

3. C. Fascia

4. D. Connective tissue

Correct

Explanation B

Tendons attach the muscles with bones

Muscles attaches to bones by tendons at both ends

The less movable end (anchor) is called the origin

The end where bones moves is called the insertion

10. Question1 points

Which of the following is a ball and socket joint?

1. A. Elbow
2. B. Knee
3. C. Shoulder
4. D. Both B and C

Correct

Explanation C

Shoulder and Hip joints are the example of ball and socket joints while knee and elbow are hinge joints.

11. Question1 points

Rigor mortis i.e. stiffening of body after death results from which of the following?

1. A. Accumulation of rigid protein molecule in sarcoplasm
2. B. Unavailability of ATP, which is necessary to break the link between actin and myosin
3. C. Decrease in body temperature after death
4. D. None

Correct

Explanation B

Depletion of ATP results in rigor mortis after death

RIGOR MORTIS

Lack of oxygen – no energy – not ATP – glycolysis – lactic acid – acid cytoplasm – actin and myosin bind

“Stiff muscle”

Factors affects Rigor Mortis:

Level of glycogen

Level of lactic acid

Body built

12. Question1 points

Last four vertebrae in humans are fused to form a structure called:

1. A. Sacrum
2. B. Cervical vertebrae
3. C. Coccyx
4. D. Pubis

Correct

Explanation C

Coccyx is form by fusion of four vertebrae and it is a part of vertebral column.

13. Question1 points

Which of the following bone is not present in the hind-limb?

1. A. Femur
2. B. Tibia
3. C. Radius
4. D. All of these

Correct

Explanation C

Radius is the bone of Fore-limb

14. Question1 points

The calcium ion released during muscle fiber contraction attach with?

1. A. Myosin
2. B. Actin
3. C. Tropomyosin
4. D. Troponin

Correct

Explanation D

SKELETAL MUSCLE FIBER CONTRACTION

Impulse reaches the sarcoplasmic reticulum

Calcium ions diffuse from the SER into the sarcoplasm

Ca+2 bind to troponin (on action) → changes shape

15. Question1 points

The number of bones forming skull in man is:

1. A. 8
2. B. 14
3. C. 20
4. D. 22

Correct

Explanation D

16. Question1 points

According to sliding filament theory, when muscle fibers are stimulated by nervous system, which of the following changes occur?

1. A. I-bands shorten
2. B. H-zone become visible
3. C. A-bands broaden
4. D. None

Correct

Explanation A

As the I bands are composed of actin filaments, and the A bands principally of myosin filaments; so when muscle fibres are stimulated the actin filaments are contracted i-e I-band shortens.

17. Question1 points

Which of the following muscles are non-striated?

1. A. Cardiac muscles
2. B. Skeleton muscles
3. C. Smooth muscles
4. D. Both A and C.

Correct

Explanation C

Only smooth muscles are non-striated (unstriped).

18. Question1 points

Where we can find H-zone in the figure of fine structure of skeletal muscle’s myofibril?

1. A. In the mid of "A-band"

2. B. Beside the "Z-line"

3. C. In "I-band"

4. D. Along the "I-band"

Correct

Explanation A

19. Question1 points

Sarcomere is the region of a myofibril between two successive:

1. A. M-lines

2. B. Z-lines

3. C. I-bands

4. D. T-tubules

Correct

Explanation B

Sarcomere is the region of a myofibril between two successive Z-lines as indicated in the diagram.

20. Question1 points

Which of the following joint has the highest degrees of movement?

1. A. Hinge joint

2. B. Cartilaginous joint

3. C. Fibrous joint

4. D. Ball and Socket joint.

Correct

Explanation D

Ball and socket joints have maximum flexibility.

21. Question1 points

Arthritis is

1. A. Inflammation of muscles.
2. B. Inflammation of joints.
3. C. Inflammation of bone.
4. D. Inflammation of tongue.

Correct

Explanation B

Arthritis is a general term that describes inflammation in the joints

22. Question1 points

When muscle contracts the length of actin and myosin filaments?

1. A. Increases
2. B. Decreases
3. C. Remains same
4. D. May expand or contract depending on the motion.

Correct

Explanation C

During muscle contraction H-zone disappear I-band shorten but the length of actin and myosin remains the same. The actin filaments slide past the myosin filaments toward the middle of the sarcomere. The result is shortening of the sarcomere without any change in filament length

STRUCTURES INVOLVED

Myofibril: A cylindrical organelle running the length of the muscle fiber, containing actin and myosin filaments.

Sarcomere: The functional unit of the myofibril, divided into: I, A & H bands.

Actin: A thin, contractile protein filament, containing ‘active’ or ‘binding sites.

Myosin: A thick, contractile filament, with protrusions known as myosin heads

Tropomyosin: An actin-binding protein which regulates muscle contraction

Troponin: A complex of three proteins, attached to Tropomyosin

23. Question1 points

Which part of the skeletal muscle moves the bone?

1. A. Origin
2. B. Insertion
3. C. Belly
4. D. Both A and B.

Correct

Explanation B

Insertion is the end of the muscle that moves the bone.

24. Question1 points

The joint that allows the movements in several directions is called;

1. A. Hinge joint
2. B. Ball and socket joint
3. C. Gilding joint
4. D. Fibrous joint

Correct

Explanation B

25. Question1 points

The disease in which high level of blood uric acid is a characteristic is known as

1. A. Arthritis
2. B. Gout
3. C. Rheumatism
4. D. Rheumatic heart

Correct

Explanation B

Gout is caused by the accumulation of uric acid in the blood. It is one of the most painful forms of arthritis. Uric acid comes from the breakdown of purines. When uric acid levels are high in the blood, it is also called hyperuricemia.

Arthritis refers to inflammation of joints leading to joint pain or stiffness.

Rheumatism is the inflammation of joints and muscles.

Rheumatic fever refers to the damage caused to the heart valves.

Thus, the correct answer is option B.

1. Question1 points

Human and mammalian skeleton can be divided into two parts, axial skeleton and:

1. A. Appendicular skeleton
2. B. Exo skeleton
3. C. Fibrous skeleton
4. D. Hydrostatic skeleton

Correct

Explanation A

The 2 main parts of the human skeleton are the:

1) There is the axil skeleton (consists of the 80 bones in the head and trunk of the human body)

2) The Appendicular Skeleton (consists of 126 bones in the human body which make motion possible and protects the organs of digestion, excretion, and reproduction

2. Question1 points

The total number of cervical and thoracic vertebrae in human beings is?

1. A. 7
2. B. 19
3. C. 32
4. D. 14

Correct

Explanation B

The cervical vertebrae in humans are 7 while thoracic are 12 so the total number of thoracic and cervical vertebrae together is 19.

3. Question1 points

When more energy is required for muscle contraction then that energy can be produced by _____ as a secondary source.

1. A. Glucose
2. B. Fructose
3. C. Phosphocreatine
4. D. Lactic acid

Correct

Explanation C

Phosphocreatine, also known as creatine phosphate (CP) or PCr (Pcr), is a phosphorylated creatine molecule that serves as a rapidly mobilizable reserve of high-energy phosphates in skeletal muscle and the brain.

4. Question1 points

How many bones are there in adult human body?

1. A. 206

2. B. 208

3. C. 248

4. D. 270

Correct

Explanation A

Human skeleton is composed of 270 bones at birth – this total decreases to 206 bones by adulthood after some bones have fused together.

5. Question1 points

The sarcolemma of the muscle fibril folds inwards and forms a system of tubes which runs through the sarcoplasm called:

1. A. Myofilament

2. B. Sarcoplasmic Reticulum

3. C. Z-lines

4. D. Transverse tubules

Correct

Explanation D

The sarcolemma of the muscle fibril folds inwards and forms a system of tubes which runs through the sarcoplasm called Transverse Tubules.

6. Question1 points

The length of the myofibril from one Z-band to the next is describe as:

1. A. Sarcolemma

2. B. Sarcoplasm

3. C. Muscle fibre

4. D. Sarcomere

Correct

Explanation D

7. Question1 points

Which of the following bones are present in pectoral girdle?

1. A. Clavicle
2. B. Scapula
3. C. Both
4. D. None

Correct

Explanation C

Pelvic girdle is made up of clavicle, and scapula. The clavicle connects scapula with sternum

8. Question1 points

How many muscles are there in the human body?

1. A. 250
2. B. 350
3. C. 450
4. D. 650

Correct

Explanation D

650 Muscles are there in Normal human body

THE MUSCULAR SYSTEM

The ability to move is an essential activity of the human body

½ our body weight comes from muscles

Consists of over 600 individual muscles.

3 purposes:

Body movement

Body shape

Body heat (maintain temp.)

9. Question1 points

Which structure holds the bones together?

1. A. Joints
2. B. Cartilages
3. C. Ligaments
4. D. Fibrous capsule

Correct

Explanation C

10. Question1 points

Which one of the following cartilage is the most abundant in human body?

1. A. Elastic
2. B. Fibro
3. C. Hyaline
4. D. None

Correct

Explanation C

11. Question1 points

The repeated protein pattern of myofibrils is called?

1. A. Sarcomere

2. B. Zymogene

3. C. Sarcolemma

4. D. Cross Bridges

Correct

Explanation A

Muscles are composed of tubular cells called myocytes, known as muscle fibers in striated muscle, and these cells in turn contain many chains of myofibrils. These proteins are organized into thick and thin filaments called Myofilament, which repeat along the length of the myofibril in sections called sarcomeres.

12. Question1 points

Which of the following is not true about cardiac muscles?

1. A. Their cells have one nuclei.

2. B. Their cell shape is branched.

3. C. Their contraction is spontaneous.

4. D. They have regular stripes.

correct

Explanation D

Cardiac muscles have irregular stripes

13. Question1 points

The disorders that arise when the immune system destroys ‘self cells’ are called autoimmune disorders. Which of the following would be classified under this?

1. A. Rheumatoid arthritis

2. B. Asthma

3. C. Rhinitis

4. D. Eczema

Correct

Explanation A

Rheumatoid arthritis is a type of autoimmune disease in which the body's immune system attacks the joints and the tissue of the body in the joints. This creates inflammation. This results causes the tissue which lines the inside of joints to thicken. This results in swelling and pain in the joints. It affects the joints of the hands, feet, wrists, elbows, knees and ankles.

Thus, the correct answer is option A.

14. Question1 points

First vertebra of cervical region of vertebral column is known as:

1. A. Axis
2. B. Sacral
3. C. Thoracic
4. D. Atlas

Correct

Explanation D

15. Question1 points

Which one of the following is not a paired facial bone?

1. A. Nasal
2. B. Palatine
3. C. Maxilla
4. D. Vomer

correct

Explanation D

Facial bones = 14, Paired facial bones = 6 pairs Unpaired facial bones = 2 so, the Vomer is not a paired facial bone

16. Question1 points

Which one of the following cells is responsible for the formation of bone?

1. A. Osteoblast
2. B. Osteoclast
3. C. Osteocytes
4. D. None of these

Correct

Explanation A

Osteoblasts are bone forming cells.

17. Question1 points

The most important function of troponin is?

1. A. To cover the binding sites on actin molecules.
2. B. To bind with Tropomyosin.
3. C. To bind with Ca ions.
4. D. All of the above

Correct

Explanation: D

Troponin is a three polypeptide complex one complex bind with calcium ions, other bind with actin and the third bind with Tropomyosin

TROPONIN

Troponin – in skeletal as well as cardiac muscle

Troponin has three subunits, TnC, TnT, and TnI

Troponin-C binds to calcium ions

Troponin-T binds to Tropomyosin

Troponin-I binds to actin in thin Myofilament to hold the troponin- Tropomyosin complex in place

18. Question1 points

What is the main function of cross bridges in myosin?

1. A. They provide support to muscles.
2. B. They produce lactic acid.
3. C. They link thick and thin Myofilament together during expansion.
4. D. They link thick and thin Myofilament together during contraction.

Correct

Explanation D

Cross bridges link thick and thin Myofilament together during contraction

Actin-Myosin Orientation:

Myosin filament (thick)

Have long rod-shaped tails with 2 globular heads.

The heads form cross bridges

19. Question1 points

W.O.F changes occurs when skeletal muscles contract:

1. A. I-band shortens only
2. B. A-band shortens and Z-lines move apart
3. C. I-band shortens and Z-line comes close to each other
4. D. Actin filament contracts

Correct

Explanation C

20. Question1 points

There are how many main types of cartilage?

1. A. Two
2. B. Three
3. C. Four
4. D. Five

Correct

Explanation: B

There are 3 types of cartilage

i) Elastic cartilage

ii) Hyaline cartilage

iii) Fibrous cartilage

21. Question1 points

Osteoblast produce which type of collagen?

1. A. Type-I
2. B. Type-II
3. C. Type-III
4. D. All of these

Correct

Explanation: A

Osteoblast are immature bone cells that form bone matrix. Bone matrix contain collagen type I. Thus osteoblast produce collagen type-I.

⇒ Collagen type-II is present in cartilage.

COLLAGEN TYPE

Collagen Type I: Skin, Tendon, Vascular, Ligature, Organs, Bone

Collagen Type II: Cartilage

Collagen Type III: Constructive fibres

Collagen Type IV: Forms sources of cell basement membrane

22. Question1 points

The incorrect statement about cartilage?

1. A. Made of chondrocytes
2. B. Do not contain blood vessels
3. C. Contain collagen type-I
4. D. It heals very slowly

Correct

Explanation: C

Cartilage contain collagen type-II

⇒ Cartilage is made of cells called chondrocytes. Also they do not contain any blood vessels as a result they heals very slowly.

⇒ so all options are correct except option “C”.

COLLAGEN TYPE

Collagen Type I: Skin, Tendon, Vascular, Ligature, Organs, Bone

Collagen Type II: Cartilage

Collagen Type III: Constructive fibres

Collagen Type IV: Forms sources of cell basement membrane

23. Question1 points

The organic portion of bone’s providing all but?

1. A. Tensile strength
2. B. To resist stretch
3. C. Flexibility

4. D. Hardness

Correct

Explanation: D

Bone is made of 35% organic substances (Protein, collagen) which provides the bone:

⇒ Tensile strength

⇒ Flexibility ⇒ Resistance to stretch

but hardness is provided by inorganic substances

COMPOSITION OF BONE

65% Inorganic matter (Hydroxyapatite)

Mostly Calcium and inorganic orthophosphate deposited between collagen

35% Organic

28%-30% collagen

5-7% non-collagenous proteins.

Osteocalcin

Bone Sialoprotein

Phosphoprotein

Osteonectin

Bone morohogenic protein

24. Question1 points

Bones are constantly reshaped by?

1. A. Osteoblasts and Osteoclasts
2. B. Osteoblasts and Osteocytes
3. C. Osteocytes and Osteoclasts
4. D. Osteoclasts, Osteoblasts and Osteocytes

Correct

Explanation: A

⇒ Bone is constantly reshaped by osteoblasts and osteoclasts

BONE GROWTH

Bones are remodeled and reshaped by the osteoblasts and osteoclasts.

Necessary during growth so bones keep normal proportions and strength.

Bones become thicker and stronger where larger muscles need to attach.

25. Question1 points

The macrophages of bones are?

1. A. Osteoblasts
2. B. Osteoclasts
3. C. Osteocytes
4. D. Periosteum

Correct

Explanation: B

Macrophage have phagocytic activity, in our body some organs have their own macrophages. For example

⇒ Liver have Kupffer cells, blood have monocytes, and bone have osteoclasts.

⇒ Osteoclast remove calcium from bones to maintain calcium level in blood.

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1. Question1 points

Correct statement about cartilage is?

1. A. They have no inorganic salts
2. B. Cartilages are not reshaped
3. C. Cartilages have no blood circulation
4. D. All of these

Correct

Explanation: D

All the statements given about cartilage are correct.

⇒ Cartilage have no inorganic salts while bones have,

⇒ similarly bones can be reshaped but cartilages cannot be reshaped.

⇒ Cartilage also have no blood circulation.

2. Question1 points

Select the incorrect statement about osteocytes?

1. A. Responsible for maintenance of bone and calcium
2. B. They are mono nucleated
3. C. Regulate bone's response to stress
4. D. Responsible for mineralization of bone

Correct

Explanation: D

⇒ Mineralization of bone is done by osteoblasts not by osteocytes

Osteocytes are mature bone cells. They are responsible for maintenance of bone and calcium. They also regulate bone's response to stress. Moreover they are also mononucleated.

3. Question1 points

Cells of the bone that are engaged in metabolic exchange with blood that flows through the bone are?

1. A. Osteocytes
2. B. Osteoblasts
3. C. Osteoclasts
4. D. Chondrioblasts

Correct

Explanation: A:

⇒ Bone contain cells called osteocytes which are mature bone cells.

These cells engage in metabolic exchange with the blood that flows through the bone.

4. Question1 points

Joints cavity is present in which joints?

1. A. Fibrous joints
2. B. Cartilaginous joints
3. C. Synovial joints
4. D. Both A and B

Correct

Explanation: C

Synovial joints does not have any joints cavity, that is why they are Immovable

⇒ Fibrous joints and cartilaginous movable or slightly movable.

While synovial joints have joint cavity that is why they are freely movable joints.

5. Question1 points

All are correct about Striated muscle Except

1. A. Voluntary Control
2. B. Move Skeleton
3. C. Multinucleated
4. D. All are correct

correct

Explanation: D

Skeletal muscle cells are elongated or tubular. They have multiple nuclei and these nuclei are located on the periphery of the cell voluntary Muscle. Skeletal muscle is striated. Smooth muscle cells have a single centrally located nucleus.

6. Question1 points

Which joints allow movement freely in all directions?

1. A. Hip joints
2. B. Elbow joints
3. C. Knee joints
4. D. Ankle joints

Correct

Explanation: A

Ball and Socket joints are types of synovial joints that allow movement in all directions.

⇒ The shoulder and hip joints are the example of ball and socket joints. Thus they are freely movable in all directions.

7. Question1 points

Suture joints belongs to which category of joints?

1. A. Ball and socket joints
2. B. Cartilaginous joints
3. C. Fibrous joints
4. D. Hinge joints

Correct

Explanation: C

Suture are joints formed between the bones of skull. They are immovable joints having no joint cavity. That is way they belong to fibrous joints category

8. Question1 points

Muscles are derived from?

1. A. Ectoderm

2. B. Endoderm

3. C. Mesoderm

4. D. Nerve crest cells

Correct

Explanation: C

Muscles are specialized tissue of mesodermal origin. They make nearly half the human body mass.

THE MUSCULAR SYSTEM DEVELOPS FROM

Mesoderm, except for

The muscles of the iris, which develop from neuroectoderm, and

The muscles of the esophagus, which are believed to develop by transdifferentiation from smooth muscle.

9. Question1 points

Select the one not related to all types of muscles?

1. A. Mesodermal origin

2. B. Transform chemical energy to mechanical

3. C. Capable of exerting force

4. D. Myogenic in nature

Correct

Explanation: D

Following are the characteristics of muscles

⇒ They have mesodermal origin

⇒ They are capable of exerting force for example lifting of stone needs force.

⇒ They convert chemical energy (ATP) into mechanical.

⁎ However all the muscles are not myogenic in nature. Only cardiac muscles are myogenic.

10. Question1 points

The longest muscle cell among the following?

1. A. Skeletal muscle cell
2. B. Cardiac muscle cell
3. C. Smooth muscle cell
4. D. Glandular muscle cell

Correct

Explanation: A

⇒ skeletal muscle cells are longest muscle cells

11. Question1 points

Which type of muscles have intercalated disc?

1. A. Smooth muscles
2. B. Cardiac muscles
3. C. Skeletal muscles
4. D. All of these

Correct

Explanation: B

Cardiac muscles have special type of discs called intercalated disc.

⇒ Intercalated disc represents the undulating double membranes where two cells are tightly bounded together by desmosome.

⇒ Intercalated discs allow cardiac muscles to contract in a wave-like pattern

12. Question1 points

The incorrect statement about muscle fibre is?

1. A. It has diameter of 10-100 μm

2. B. It is cylindrical

3. C. Its nuclei are located near periphery

4. D. It is highly branched

Correct

Explanation: D

Muscle fibres are cylindrical, unbranched, having diameter 10-100μm. Also each muscle fiber consists of sarcoplasm, large number of mitochondria and nuclei at the periphery.

Thus option D is incorrect.

13. Question1 points

Which structure has light and dark bands due to which skeletal muscles are called striated muscles?

1. A. Muscle bundle

2. B. Muscle fiber

3. C. Myofibril

4. D. Myofilament

Correct

Explanation: C

The sarcoplasm of myofibril contains many contractile element called myofibrils. Each myofibril has light and dark bands which give the fiber its striped appearance. It is because of this that skeletal muscles are also called striated muscles.

14. Question1 points

Pick up the correct statement about skeletal muscles?

1. A. The functional unit of contraction is in muscles is sarcomere

2. B. The dark bands are isotropic

3. C. Light bands are anisotropic

4. D. All of these

Correct

Explanation: A

Myofibrils consist of smaller contractile units called sarcomere, which is the functional unit of contraction process in the muscle.

⇒ Actually dark bands are anisotropic and light bands are isotropic.

Thus only option A is correct.

SACROMERES

v The smallest contractile unit of a muscle

v The region of a myofibril between two successive Z discs

v Composed of myofilaments made up of contractile proteins

v Myofilaments are of two types – thick and thin

15. Question1 points

Sarcoplasm of muscle fibres differs from cytoplasm of other cells as it contains usually?

1. A. Stored starch
2. B. Stored lipid
3. C. Hemoglobin
4. D. Myoglobin

Correct

Explanation: D

Sarcoplasm is the cytoplasm of muscle fibre. It mainly contain unique oxygen binding protein called myoglobin. It stores oxygen to be used during exercise

16. Question1 points

Light and dark bands of muscles give the muscle cell its?

1. A. Nourishment
2. B. Striped appearance

3. C. Protection

4. D. Strength

Correct

Explanation: B

The myofibril of muscle fibre has light and dark bands that gives muscle cells striped appearance. Due to this reason skeletal muscles are called striped or striated muscles.

17. Question1 points

Which of the following is made of thick and thin filaments?

1. A. Myofilament

2. B. Muscle bundle

3. C. Muscle fibre

4. D. Muscle bundle

correct

Explanation: A

⇒ Myofilament is made up of thick and thin filament. Furthermore thick filaments are made of myosin and thin filaments are made of action

18. Question1 points

Sarcomere is the region of myofibril between two successive _____ lines?

1. A. M

2. B. H

3. C. A

4. D. Z

Correct

Explanation: D

A sarcomere is the region of myofibril between two successive Z-lines. Moreover sarcomere is the functional unit of contraction process in the muscles.

SACROMERES

The smallest contractile unit of a muscle

The region of a myofibril between two successive Z discs

Composed of myofilaments made up of contractile proteins

Myofilaments are of two types – thick and thin

19. Question1 points

Muscle cell is considered as?

1. A. Muscle fiber
2. B. Sarcomere
3. C. Muscle bundle
4. D. Myofibril

Correct

Explanation: A

It is fact the actually muscle cell is muscle fiber

⇒ Muscle bundle consists of muscle fibres

⇒ Myofibril is the contractile element in sarcoplasm of muscle fiber

20. Question1 points

The protein filament which binds with calcium?

1. A. Myosin
2. B. Troponin
3. C. Tropomyosin

4. D. Creatinine

Correct

Explanation: B

According to sliding filament hypothesis calcium ions released from sarcoplasmic reticulum and attaches to troponin, causing reorientation of certain components. Thus permitting actin filaments of bind to myosin filaments.

21. Question1 points

The dark band of sarcomere is called?

1. A. H-band
2. B. I-band
3. C. A-band
4. D. M-band

Correct

Explanation: C

Myofibril consists of light bands and dark bands.

⇒ Dark bands are also called A-bands because they are anisotropic.

⇒ While light bands are also called I-bands because they are isotropic

22. Question1 points

Which property is common between smooth muscles and cardiac muscles?

1. A. They are multinucleated
2. B. Both have intercalated disc
3. C. Both are Involuntary
4. D. All

Correct

Explanation: C

Smooth muscles and cardiac muscles have the following properties in common;

⇒ Both are uninucleated

⇒ Both are involuntary

⇒ Both have nerve supply from ANS

Thus option “C” is correct answer.

23. Question1 points

The multinucleate cell among the following?

1. A. Osteoclast
2. B. Muscle fibre
3. C. Osteoblast
4. D. Both “A” and “B”

Correct

Explanation: D

There are certain cells in our body which are multinucleated means they have more than one nucleus.

⇒ Osteoclast are multinucleated cells that remove bone tissue.

⇒ Muscle fibre is the cell of skeletal muscle that is cylindrical, unbranched and multinucleated.

24. Question1 points

Cardiac muscles are

1. A. striated and voluntary
2. B. striated and involuntary
3. C. smooth and voluntary
4. D. smooth and involuntary

Correct

Explanation B

Cardiac muscles are predominantly found in heart wall. These are striated, involuntary contract quickly and do not get fatigued. These muscles continue rhythmic contraction throughout life under the control of ANS.

25. Question1 points

Total number of bones in the hind limb of a man is

1. A. 24
2. B. 30
3. C. 14
4. D. 21

Correct

Explanation B

Each hind limb consists of 30 bones -1 femur, 1 patella, 1 tibia, 1 fibula, 7 tarsals, 5 metatarsals and 14 phalanges.

1. Question1 points

Correct statement about cartilage is?

1. A. They have no inorganic salts
2. B. Cartilages are not reshaped
3. C. Cartilages have no blood circulation
4. D. All of these

Correct

Explanation: D

All the statements given about cartilage are correct.

⇒ Cartilage have no inorganic salts while bones have,

⇒ similarly bones can be reshaped but cartilages cannot be reshaped.

⇒ Cartilage also have no blood circulation.

2. Question1 points

Select the incorrect statement about osteocytes?

1. A. Responsible for maintenance of bone and calcium
2. B. They are mono nucleated
3. C. Regulate bone's response to stress
4. D. Responsible for mineralization of bone

Correct

Explanation: D

⇒ Mineralization of bone is done by osteoblasts not by osteocytes

Osteocytes are mature bone cells. They are responsible for maintenance of bone and calcium. They also regulate bone's response to stress. Moreover they are also mononucleated.

3. Question1 points

Cells of the bone that are engaged in metabolic exchange with blood that flows through the bone are?

1. A. Osteocytes
2. B. Osteoblasts
3. C. Osteoclasts
4. D. Chondrioblasts

Correct

Explanation: A:

⇒ Bone contain cells called osteocytes which are mature bone cells.

These cells engage in metabolic exchange with the blood that flows through the bone.

4. Question1 points

Joints cavity is present in which joints?

1. A. Fibrous joints
2. B. Cartilaginous joints
3. C. Synovial joints
4. D. Both A and B

Correct

Explanation: C

Synovial joints does not have any joints cavity, that is why they are Immovable

⇒ Fibrous joints and cartilaginous movable or slightly movable.

While synovial joints have joint cavity that is why they are freely movable joints.

5. Question1 points

All are correct about Striated muscle Except

1. A. Voluntary Control
2. B. Move Skeleton
3. C. Multinucleated
4. D. All are correct

correct

Explanation: D

Skeletal muscle cells are elongated or tubular. They have multiple nuclei and these nuclei are located on the periphery of the cell voluntary Muscle. Skeletal muscle is striated. Smooth muscle cells have a single centrally located nucleus.

6. Question1 points

Which joints allow movement freely in all directions?

1. A. Hip joints
2. B. Elbow joints

3. C. Knee joints

4. D. Ankle joints

Correct

Explanation: A

Ball and Socket joints are types of synovial joints that allow movement in all directions.

⇒ The shoulder and hip joints are the example of ball and socket joints. Thus they are freely movable in all directions.

7. Question1 points

Suture joints belongs to which category of joints?

1. A. Ball and socket joints

2. B. Cartilaginous joints

3. C. Fibrous joints

4. D. Hinge joints

Correct

Explanation: C

Suture are joints formed between the bones of skull. They are immovable joints having no joint cavity. That is way they belong to fibrous joints category

8. Question1 points

Muscles are derived from?

1. A. Ectoderm

2. B. Endoderm

3. C. Mesoderm

4. D. Nerve crest cells

Correct

Explanation: C

Muscles are specialized tissue of mesodermal origin. They make nearly half the human body mass.

THE MUSCULAR SYSTEM DEVELOPS FROM

Mesoderm, except for

The muscles of the iris, which develop from neuroectoderm, and

The muscles of the esophagus, which are believed to develop by transdifferentiation from smooth muscle.

9. Question1 points

Select the one not related to all types of muscles?

1. A. Mesodermal origin
2. B. Transform chemical energy to mechanical
3. C. Capable of exerting force
4. D. Myogenic in nature

Correct

Explanation: D

Following are the characteristics of muscles

⇒ They have mesodermal origin

⇒ They are capable of exerting force for example lifting of stone needs force.

⇒ They convert chemical energy (ATP) into mechanical.

⁎ However all the muscles are not myogenic in nature. Only cardiac muscles are myogenic.

10. Question1 points

The longest muscle cell among the following?

1. A. Skeletal muscle cell
2. B. Cardiac muscle cell
3. C. Smooth muscle cell

4. D. Glandular muscle cell

Correct

Explanation: A

⇒ skeletal muscle cells are longest muscle cells

11. Question1 points

Which type of muscles have intercalated disc?

1. A. Smooth muscles
2. B. Cardiac muscles
3. C. Skeletal muscles
4. D. All of these

Correct

Explanation: B

Cardiac muscles have special type of discs called intercalated disc.

⇒ Intercalated disc represents the undulating double membranes where two cells are tightly bounded together by desmosome.

⇒ Intercalated discs allow cardiac muscles to contract in a wave-like pattern

12. Question1 points

The incorrect statement about muscle fibre is?

1. A. It has diameter of 10-100 μm
2. B. It is cylindrical
3. C. Its nuclei are located near periphery
4. D. It is highly branched

Correct

Explanation: D

Muscle fibres are cylindrical, unbranched, having diameter 10-100μm. Also each muscle fiber consists of sarcoplasm, large number of mitochondria and nuclei at the periphery.

Thus option D is incorrect.

13. Question1 points

Which structure has light and dark bands due to which skeletal muscles are called striated muscles?

1. A. Muscle bundle
2. B. Muscle fiber
3. C. Myofibril
4. D. Myofilament

Correct

Explanation: C

The sarcoplasm of myofibril contains many contractile element called myofibrils. Each myofibril has light and dark bands which give the fiber its striped appearance. It is because of this that skeletal muscles are also called striated muscles.

14. Question1 points

Pick up the correct statement about skeletal muscles?

1. A. The functional unit of contraction is in muscles is sarcomere
2. B. The dark bands are isotropic
3. C. Light bands are anisotropic
4. D. All of these

Correct

Explanation: A

Myofibrils consist of smaller contractile units called sarcomere, which is the functional unit of contraction process in the muscle.

⇒ Actually dark bands are anisotropic and light bands are isotropic.

Thus only option A is correct.

SACROMERES

v The smallest contractile unit of a muscle

v The region of a myofibril between two successive Z discs

v Composed of myofilaments made up of contractile proteins

v Myofilaments are of two types – thick and thin

15. Question1 points

Sarcoplasm of muscle fibres differs from cytoplasm of other cells as it contains usually?

1. A. Stored starch
2. B. Stored lipid
3. C. Hemoglobin
4. D. Myoglobin

Correct

Explanation: D

Sarcoplasm is the cytoplasm of muscle fibre. It mainly contain unique oxygen binding protein called myoglobin. It stores oxygen to be used during exercise

16. Question1 points

Light and dark bands of muscles give the muscle cell its?

1. A. Nourishment
2. B. Striped appearance
3. C. Protection
4. D. Strength

Correct

Explanation: B

The myofibril of muscle fibre has light and dark bands that gives muscle cells striped appearance. Due to this reason skeletal muscles are called striped or striated muscles.

17. Question1 points

Which of the following is made of thick and thin filaments?

1. A. Myofilament
2. B. Muscle bundle
3. C. Muscle fibre
4. D. Muscle bundle

correct

Explanation: A

⇒ Myofilament is made up of thick and thin filament. Furthermore thick filaments are made of myosin and thin filaments are made of action

18. Question1 points

Sarcomere is the region of myofibril between two successive _____ lines?

1. A. M
2. B. H
3. C. A
4. D. Z

Correct

Explanation: D

A sarcomere is the region of myofibril between two successive Z-lines. Moreover sarcomere is the functional unit of contraction process in the muscles.

SACROMERES

The smallest contractile unit of a muscle

The region of a myofibril between two successive Z discs

Composed of myofilaments made up of contractile proteins

Myofilaments are of two types – thick and thin

19. Question1 points

Muscle cell is considered as?

1. A. Muscle fiber
2. B. Sarcomere
3. C. Muscle bundle
4. D. Myofibril

Correct

Explanation: A

It is fact the actually muscle cell is muscle fiber

⇒ Muscle bundle consists of muscle fibres

⇒ Myofibril is the contractile element in sarcoplasm of muscle fiber

20. Question1 points

The protein filament which binds with calcium?

1. A. Myosin
2. B. Troponin
3. C. Tropomyosin
4. D. Creatinine

Correct

Explanation: B

According to sliding filament hypothesis calcium ions released from sarcoplasmic reticulum and attaches to troponin, causing reorientation of certain components. Thus permitting actin filaments of bind to myosin filaments.

21. Question1 points

The dark band of sarcomere is called?

1. A. H-band
2. B. I-band
3. C. A-band
4. D. M-band

Correct

Explanation: C

Myofibril consists of light bands and dark bands.

⇒ Dark bands are also called A-bands because they are anisotropic.

⇒ While light bands are also called I-bands because they are isotropic

22. Question1 points

Which property is common between smooth muscles and cardiac muscles?

1. A. They are multinucleated
2. B. Both have intercalated disc
3. C. Both are Involuntary
4. D. All

Correct

Explanation: C

Smooth muscles and cardiac muscles have the following properties in common;

⇒ Both are uninucleated

⇒ Both are involuntary

⇒ Both have nerve supply from ANS

Thus option “C” is correct answer.

23. Question1 points

The multinucleate cell among the following?

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3. C. Osteoblast
4. D. Both “A” and “B”

Correct

Explanation: D

There are certain cells in our body which are multinucleated means they have more than one nucleus.

⇒ Osteoclast are multinucleated cells that remove bone tissue.

⇒ Muscle fibre is the cell of skeletal muscle that is cylindrical, unbranched and multinucleated.

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Correct

Explanation B

Cardiac muscles are predominantly found in heart wall. These are striated, involuntary contract quickly and do not get fatigued. These muscles continue rhythmic contraction throughout life under the control of ANS.

25. Question1 points

Total number of bones in the hind limb of a man is

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3. C. 14

4. D. 21

Correct

Explanation B

Each hind limb consists of 30 bones -1 femur, 1 patella, 1 tibia, 1 fibula, 7 tarsals, 5 metatarsals and 14 phalanges.

1. Question1 points

Which of the following ions help in muscle contraction?

A. K+ and Mg++

B. Na+ and K+

C. Ca++ and Na++

D. Ca++ and Mg++

1. A.

2. B.

3. C.

4. D.

Correct

Explanation D

In muscle contraction, both Ca2+ and Mg2+ are used. Ca2+ helps in the formation of actomyosin by combining actin and myosin proteins. This will provide contraction in muscle. ATPase activity of myosin requires both Ca2+ and Mg2+. This helps in release of energy. This energy is used up in the contraction of muscle.

2. Question1 points

Tendon and ligament are example of

1. A. Dense regular connective tissue
2. B. Dense irregular connective tissue
3. C. Loose connective tissue
4. D. Specialized connective tissue.

Correct

Explanation A

Fibres and fibroblasts are compactly packed in the dense connective tissues. Orientation of fibers show a regular or irregular pattern and are called dense regular and dense irregular tissues. In the dense regular connective tissues, the collagen fibers are present in rows between many parallel bundles of fibers. Tendons, which attach skeletal muscles to bones and ligaments which attach one bone to another are examples of this tissue.

3. Question1 points

A neurotransmitter generates an action potential in the sarcolemma.

1. A. GABA
2. B. Epinephrine
3. C. Glycine
4. D. Acetylcholine.

Correct

Explanation D

The axon terminals release acetylcholine at these junctions to transmit excitation impulses to the sarcolemma of the fibres. Acetylcholine depolarizes the sarcolemma and thus triggers a self-propagating action potential spreading towards both ends of the fibres. The conduction of the impulse in the sarcolemma is electrochemically similar to that found in the neurons.

1. Acetylcholine released from the axon terminal binds to receptors on the sarcolemma.
2. An action potential is generated and travels down the T tubule.
3. Ca2+ is released from the sarcoplasmic reticulum in response to the change in voltage.
4. Ca2+ binds troponin; Cross-bridges form between actin and myosin.
5. Acetylcholinesterase removes acetylcholine from the synaptic cleft.

6. Ca^{2+} is transported back into the sarcoplasmic reticulum.

7. Tropomyosin binds active sites on actin causing the cross-bridge to detach.

4. Question1 points

The contractile element present in a striated muscle fibril, between two successive Z-lines, is called

1. A. Sarcomere
2. B. Sarcoplasm
3. C. Sarcosomes
4. D. All of these.

Correct

Explanation A

A striated muscle fiber shows alternating dark and light cross bands, the striations or stripes, under the microscope, hence its name. Dark band is called {A} band. It has at its middle a light zone termed H zone. . Light band is known as I band. It is crossed through its center by a dark membrane called {Z} line. The part of the muscle fiber between two successive Z lines functions as a contractile unit termed sarcomere. The latter consists of the A band and half of each adjacent I band.

5. Question1 points

Basic unit of muscle contraction is

1. A. Collagen
2. B. Sarcomere
3. C. Bands
4. D. Myofibrils

Correct

Explanation B

A sarcomere is the basic unit of a muscle's cross-striated myofibril. Sarcomeres are multi-protein complexes composed of three different filament systems

SACROMERES

The smallest contractile unit of a muscle

The region of a myofibril between two successive Z discs

Composed of myofilaments made up of contractile proteins

Myofilaments are of two types – thick and thin

6. Question1 points

Smallest bone in human system is

1. A. Stapes
2. B. Patella
3. C. Malleus
4. D. Incus.

Correct

Explanation A

Stapes, one of the ear ossicles, is the smallest bone in human body.

7. Question1 points

Cardiac muscles fibres are

1. A. Involuntary.
2. B. Non-fatigue.
3. C. Striated.
4. D. All of these.

Correct

Explanation D

Cardiac muscle is striated muscle that is present only in the heart. It's involuntary, and fatigue free muscle or non-fatigue muscle.

8. Question1 points

Which one of the following is the shortest muscle?

1. A. Masseter
2. B. Sartorius
3. C. Stapedial muscle
4. D. Rectus abdominis

Correct

Explanation C

The smallest muscle in the human body is the stapedius which controls the stapes in the ear while masseter the strongest muscle based on its weight is the masseter.

9. Question1 points

Globular heads of myosin filaments link the thick and the thin myofilaments together during contraction, that is why they are sometimes called:

1. A. Cross links
2. B. Cross bridges
3. C. Cross connection
4. D. Cross heads

Correct

Explanation: B

10. Question1 points

The function of cardiac muscles is to:

1. A. To pump blood
2. B. To move the skeleton
3. C. To control movement of substances through hollow organs
4. D. To pump the lymph

Correct

Explanation: A

Rapid, involuntary contraction and relaxation of the cardiac muscle are vital for pumping blood throughout the cardiovascular system. To accomplish this, the structure of cardiac muscle has distinct features that allow it to contract in a coordinated fashion and resist fatigue.

11. Question1 points

If a cross section of a sarcomere is seen, each myosin is surrounded by how many actin molecules

1. A. 9
2. B. 5
3. C. 6
4. D. 7

Correct

Explanation: C

Each myosin filament is surrounded by 6 actin filaments on each end

12. Question1 points

Majority of muscles tissue in human body are _____ type

1. A. Smooth
2. B. Circular
3. C. Cardiac
4. D. Skeletal

Correct

Explanation: D

Majority of muscles tissue in your body are skeletal type

13. Question1 points

Term “Hele” means

1. A. Dark
2. B. Hollow
3. C. Compact
4. D. Bright

Correct

Explanation: D

Each A band has a lighter stripe in its mid-section called H-zone (H stands for “hele” mean bright).

14. Question1 points

The I band have midline called

1. A. M-line
2. B. Z-line
3. C. H-zone

4. D. I-band

Correct

Explanation: B

The I band have midline called Z–line (Z for zwishen means between).

15. Question1 points

Which one of the following is also called breast bone?

1. A. Clavicle
2. B. Sternum
3. C. Scapula
4. D. Humerus

Correct

Explanation: B

Sternum is also known as breast bone. (Glossary).

16. Question1 points

The cartilage matrix is covered by a dense layer of collagen fibres, called:

1. A. Perichondrium
2. B. Pericardium
3. C. Peritoneum
4. D. Periosteum

Correct

Explanation A

17. Question1 points

Secondary cell wall of sclerenchyma cells is impregnated with

1. A. Cellulose.
2. B. Peptidoglycan and murein.
3. C. Lignin.
4. D. Pectin.

Correct

Explanation: C

Mature sclerenchyma cells are usually dead cells that have heavily thickened secondary walls containing lignin.

18. Question1 points

Among the followings which is the longest supportive cell?

1. A. Tracheid’s.
2. B. Sclereids.
3. C. Trachea.
4. D. Collenchyma cells

Correct

Explanation: A

19. Question1 points

Movement shown by sperms of liverworts, mosses ferns towards archegonia are a

1. A. Chemotactic movement
2. B. Phototactic movement

3. C. Chemotropic movement

4. D. Phototropic movement

correct

Explanation: A

Sperms of liverworts, mosses, ferns move towards archegonia, this is an example of chemotactic movement

20. Question1 points

Which of the following cells gave angular thickening in their primary walls

1. A. Collenchyma

2. B. Sclerenchyma

3. C. Fibers

4. D. Vessels

Correct

Explanation: A

Collenchyma cells are present at the peripheral areas of herbaceous stems, petioles etc. The angular thickenings in collenchyma's are rich in cellulose. In a cross-sectional view, the thickenings occur at those places where several cells meet.

21. Question1 points

Bundle caps in sunflower stem are formed by

1. A. Sclerenchyma

2. B. Parenchyma

3. C. Mesenchyme

4. D. Collenchyma

correct

Explanation: A

Sclerenchyma lies on the outside of vascular bundles in the form of semicircular to semilunar patches called bundle caps. As the bundle caps are associated with the phloem part of vascular bundles, the sclerenchymatous pericycle (or bundle cap) is also called hard bast.

22. Question1 points

The movement in response to stimulus of touch i-e climbing vines is called

1. A. Hydrotropism
2. B. Thigmotropism
3. C. Phototropism
4. D. Geotropism

Correct

Explanation: B

Thigmotropism: It is the movement in response to the stimulus of touch, for instance, climbing vines.

23. Question1 points

The membrane that bounds vacuole is called

1. A. Protoplast
2. B. Chloroplast
3. C. Leucoplast
4. D. Tonoplast

Correct

Explanation: D

Plant vacuoles are fluid-filled organelles bound by a single membrane called the Tonoplast, and contain a wide range of inorganic ions and molecules.

24. Question1 points

It is also called tail bone

1. A. Pubis
2. B. Sacrum
3. C. Pelvis
4. D. Coccyx

Correct

Explanation: D

The end of the vertebral column is the coccyx or tail bone which consists of 4 small fused vertebrae. The coccyx is man's vestige of a tail.

25. Question1 points

All of the following are types of cartilage tissue in human body, EXCEPT

1. A. Hyaline cartilage
2. B. Elastic cartilage
3. C. Fibrocartilage
4. D. Osteocytes

Correct

Explanation: D

There are three types of cartilage tissue in human body: hyaline, elastic, and fibrocartilage.

26. Question1 points

Smooth reticulum are similar in structure to

1. A. RER
2. B. Microfilaments

3. C. Golgi bodies

4. D. Sarcoplasmic reticulum

Correct

Explanation: D

The sarcoplasmic reticulum (SR) is a membrane-bound structure found within muscle cells that is similar to the smooth endoplasmic reticulum in other cells. The main function of the SR is to store calcium ions (Ca2+).

27. Question1 points

The muscles attached to the skeleton and are associated with the movements of bones are called

1. A. Smooth muscles

2. B. Cardiac muscles

3. C. Skeletal muscles

4. D. Lumbar muscles

Correct

Explanation C

1. Question1 points

A connective tissue consisting of chondrocytes and type II collagen is:

1. A. Bone

2. B. Blood

3. C. Cartilage

4. D. All of them

Correct

Explanation: C

Cartilage made up of specialized cell called chondrocytes, produce type II collagen.

2. Question1 points

Epiglottis is an example of cartilage:

1. A. Hyaline
2. B. Elastic
3. C. Fibro
4. D. None of them

Correct

Explanation: B

Trachea, larynx and nasal cartilage are example of hyaline, while epiglottis and pinna are made up of elastic cartilage.

3. Question1 points

Cartilage matrix consists of:

1. A. Type I Collagen
2. B. Type II Collagen
3. C. Both types
4. D. No Collagen

Correct

Explanation: B

Cartilage matrix consist of type II collagen.

Bone matrix consist of type I collagen

4. Question1 points

30% matrix of a bone is composed of organic material, chiefly:

1. A. Protein
2. B. Collagen

3. C. Both of these

4. D. None of them

Correct

Explanation: C

35% matrix of a bone is composed of organic material chiefly collagen (90%) and protein (glycoprotein) and 65% inorganic matter (calcium phosphate, carbonate etc).

5. Question1 points

65% matrix of a bone is composed of inorganic salts, chiefly:

1. A. Calcium Phosphate

2. B. Sodium

3. C. Potassium

4. D. Bicarbonate

Correct

Explanation: A

65% of matrix composed of inorganic salt, chiefly calcium phosphate and carbonate

6. Question1 points

Initially the bone is formed by:

1. A. Osteocyte

2. B. Osteoclast

3. C. Osteoblast

4. D. All of them

Correct

Explanation: C

Bones are formed by osteoblast which show similar phagocytic mechanism like type I collagen and bones are dissolved by osteoclast.

7. Question1 points

Demineralization of bone resorption is carried by:

1. A. Osteoclast
2. B. Osteoblast
3. C. Osteocyte
4. D. Chondrocyte

Correct

Explanation: A

Bone resorb by osteoblast which show similar phagocytic mechanism like macrophage.

8. Question1 points

The organic portion of bone's matrix is important in providing all but:

1. A. Tensile Strength
2. B. Hardness
3. C. To Resist Stretch
4. D. Flexibility

correct

Explanation: B

The hydroxyapatite crystals give hardness to bones, while collagen fibers give them flexibility.

9. Question1 points

The remodeling of bone is a function of:

1. A. Chondrocytes and Osteocytes
2. B. Osteoblasts and Osteoclasts
3. C. Chondroblasts and Osteoclasts
4. D. Osteoblasts and Osteocytes

Correct

Explanation: B

Osteoblast and osteoclast are responsible for remodeling of bone.

10. Question1 points

Osteoclasts are:

1. A. Mononucleated Cells
2. B. Multinucleated Cells
3. C. Without Nuclei
4. D. None of them

Correct

Explanation: B

Osteoclasts are multinucleated cells responsible for demineralization.

11. Question1 points

Cardiac muscles are:

1. A. Voluntary
2. B. Involuntary
3. C. Both of these
4. D. None of them

Correct

Explanation: B

Only skeletal muscle are voluntary while smooth muscle and cardiac muscle are involuntary.

12. Question1 points

Muscle fibres are cylindered unbranched and with diameter of:

1. A. 10–80μm
2. B. 20–60μm
3. C. 10–100μm

4. D. 10–60μm

Correct

Explanation: C

Muscle fibers (myocytes) are 10–100μm in diameter.

13. Question1 points

Which of the following statements concerning the role of Ca++ in the contraction of skeletal muscle is correct?

A. The mitochondria act as a store of Ca++ for the contractile process

B. Ca++ entry across the plasma membrane is important in sustaining contraction of skeletal muscle

C. A rise in intracellular Ca++ allows actin to interact with myosin

D. All of these

1. A.
2. B.
3. C.
4. D.

correct

Explanation: C

Ca+ store by sarcoplasmic reticulum.

14. Question1 points

The sites where the motor nerve impulse is transmitted from the nerve endings to the skeletal muscle cell membranes are the:

1. A. Neuromuscular Junctions
2. B. Sarcomeres
3. C. Myofilaments
4. D. Z-discs

Correct

Explanation: A

Sarcomere is the unit of contraction.

15. Question1 points

Myoglobin has a special function in muscle tissue:

1. A. It breaks down glycogen
2. B. It is a contractile protein
3. C. It holds a reserve supply of oxygen in the muscle
4. D. None of them

correct

Explanation: C

Myoglobin store and transport the O2 in muscles.

16. Question1 points

Region of a myofibril between two successive Z-lines is called:

1. A. Sarcolemma
2. B. Sarcomere
3. C. Cross Bridge
4. D. T-Tubule

Correct

Explanation: B

Region between two z–line and unit of contraction is called sarcomere.

17. Question1 points

When the electrical impulses reaching a muscle fibre cease the sarcoplasmic reticulum begins to re-accumulate the calcium ions by:

1. A. Diffusion

2. B. Active Transport

3. C. Both of these

4. D. None of them

Correct

Explanation: B

Reaccumulating of Ca+ ions occur by active transport.

18. Question1 points

Cross bridges are found on:

1. A. Actin

2. B. Myosin

3. C. Troponin

4. D. Tropomyosin

Correct

Explanation: B

Cross bridges are formed by actin and myosin.

19. Question1 points

Cross bridges are found on:

1. A. Actin

2. B. Myosin

3. C. Troponin

4. D. Tropomyosin

Correct

Explanation: B

Cross bridges are formed by actin and myosin.

20. Question1 points

Sliding filament hypothesis was proposed in:

1. A. 1930
2. B. 1941
3. C. 1954
4. D. 1980

Correct

Explanation: C

Slide filament hypothesis proposed by Huxley in 1954.

21. Question1 points

Which of the following changes occur when skeletal muscle contracts?

1. A. The A Band shorten
2. B. The I Band shorten
3. C. The Z-Line slide farther apart
4. D. The actin filament contract

Correct

Explanation: B

A–band do not change their length, whereas the I – band and H – zone shorten.

22. Question1 points

Thin filament in myofibrils consist of:

1. A. Actin, Tropomyosin, Troponin
2. B. Z-Line
3. C. Chloride ions
4. D. Sarcomere

Correct

Explanation: A

Myosin is a thick filament while actin, troponin and tropomyosin are thin filaments.

23. Question1 points

In skeletal muscles, calcium facilities contraction by binding to:

1. A. Tropomyosin
2. B. Troponin
3. C. Actin
4. D. Myosin

Correct

Explanation: B

Calcium binds with troponin, causes translocation of tropomyosin.

24. Question1 points

Which of these is a direct source of energy for muscle contraction?

1. A. ATP
2. B. Creatine Phosphate
3. C. Lactic Acid
4. D. Both A and B

correct

Explanation: D

The immediate source of energy for muscle contraction is ATP source of energy for muscle contraction are ATP and CP.

25. Question1 points

The cartilage present in trachea is:

1. A. Fibrous
2. B. Hyaline

3. C. Elastic

4. D. Neurotic

Correct

Explanation: B

Self Explanatory.

1. Question1 points

Which of the following statement is Incorrect?

1. A. Bone is where most blood cells are made
2. B. Bone is a dry and non-living supporting structure
3. C. Bone serves as a storehouse for various minerals
4. D. Bone protects and supports the body and its organs

Correct

Explanation: B

Self Explanatory.

2. Question1 points

The site where two or many bones meets are called

1. A. Joint
2. B. Articulation
3. C. Both A & B
4. D. Suture

Correct

Explanation: C

Both A and B

3. Question1 points

Joint of sternum and ribs is

1. A. Cartilaginous
2. B. Fibrous
3. C. Angular
4. D. Hinge joins

Correct

Explanation: A

Cartilaginous

4. Question1 points

Synovial fluid is secreted by

1. A. Blood
2. B. Bone
3. C. Cartilage
4. D. Synovial membrane

Correct

Explanation: D

Synovial membrane

5. Question1 points

Joint between metacarpals and phalanges is

1. A. Ball and socket
2. B. Pivot
3. C. Hinge
4. D. None of these

Correct

Explanation: C

Hinge joint allows movement in only 1 plan e.g. Hinge joint is present in elbow, knee etc.

6. Question1 points

Which joint is also known as suture

1. A. Cartilaginous joint
2. B. Synovial joints
3. C. Fibrous joints
4. D. Hinge joints

Correct

Explanation: C

Suture are present in skull and has fibrous joint

7. Question1 points

In joints the bones are hold in position by

1. A. Tendon
2. B. Ligament
3. C. Muscle
4. D. All of them

Correct

Explanation: B

Ligaments

8. Question1 points

Which of the following is concerned with rheumatoid arthritis?

1. A. Bone
2. B. Cartilage
3. C. Joints

4. D. All of them

Correct

Explanation: B

Cartilage

9. Question1 points

A cup like socket of shoulder joint is:

1. A. Glenoid
2. B. Acetabulum
3. C. Suture
4. D. Trochlea

Correct

Explanation: A

Glenoid is cup like cavity in shoulder.

10. Question1 points

Muscle is a specialized tissue of _____ origin.

1. A. Ectoderm
2. B. Mesoderm
3. C. Endoderm
4. D. None of these

Correct

Explanation: B

Ectoderm → CNS and skin

Mesoderm → Muscles

Endoderm → Lining of digestive, respiration, urogenital system and associated gland.

11. Question1 points

The muscle which are primarily involved in locomotion and changes of body posture:

1. A. Skeletal
2. B. Cardiac
3. C. Smooth
4. D. Both A & C

Correct

Explanation: A

Skeletal

12. Question1 points

How many types of muscles in the living organisms?

1. A. 1
2. B. 2
3. C. 3
4. D. 4

Correct

Explanation: C

Cardiac muscle

Skeletal muscle

Smooth muscle

13. Question1 points

Which types of muscles are present in organism?

1. A. Striated muscle
2. B. Visceral muscles
3. C. Cardiac muscles
4. D. All of these

Correct

Explanation: D

All of these

14. Question1 points

Smallest contractile unit of muscle fiber is

1. A. Myofilament
2. B. Fibrils
3. C. Tendons
4. D. Sarcomere

Correct

Explanation: D

Sarcomere

15. Question1 points

Heads joins thick and thin myofilament hence sometimes regarded as

1. A. Cross bridges
2. B. Bridges
3. C. Polypeptide complex
4. D. A-band

Correct

Explanation: A

Cross bridges

16. Question1 points

The functional partners of bone is

1. A. Tendon

2. B. Ligament

3. C. Skeletal muscle

4. D. Fasciae

correct

Explanation: C

Skeletal muscle → Skeleton cannot move itself. That job is performed by the Muscle Tissue.

Tendon connects bone to muscle. Ligaments join bone to bone.

17. Question1 points

Breathing, heart beating, and food digesting are examples of activities using type of muscles

1. A. Striated

2. B. Involuntary

3. C. Voluntary

4. D. Cardiac

Correct

Explanation: B

Involuntary

18. Question1 points

Muscles fatigue sets in due to non-availability of _____:

1. A. Calcium

2. B. ATP

3. C. Actin binding site

4. D. Mg cofactor

Correct

Explanation: B

ATP

19. Question1 points

By which tissue skeleton system is composed of?

1. A. Epithelial tissue
2. B. Connective tissue
3. C. Nervous tissue
4. D. Muscles tissue

Correct

Explanation: B

Skeletal system in our body is central framework. It consists of bones and connective tissue including cartilage, tendon, ligament

20. Question1 points

Bony skeleton is covered and attached by:

1. A. Skeleton muscle
2. B. Smooth muscle
3. C. Cardiac muscle
4. D. All of these

Correct

Explanation: A

Skeleton muscle

21. Question1 points

Myofibrils within muscle fibers contain thick and thin filaments made up of _____ and _____ respectively:

1. A. Myosin and actin
2. B. Globulin and albumin
3. C. Troponin and Tropomyosin
4. D. Fibrin and fibrinogen

Correct

Explanation: A

Myosin and actin

22. Question1 points

Gut, urinary bladder, and blood vessels are

1. A. Skeletal muscle
2. B. Smooth muscle
3. C. Cardiac muscle
4. D. None of them

Correct

Explanation: B

Smooth Muscle

23. Question1 points

Perichondrium is the membrane which surrounds:

1. A. Hard bone
2. B. Compact bone
3. C. Spongy bone
4. D. None

Correct

Explanation: D

Perichondrium is a dense layer of fibrous connective tissue that covers cartilage

24. Question1 points

Which of the following cells are multinucleated?

1. A. Osteoblasts

2. B. Osteocytes

3. C. Osteoclasts

4. D. Chondrocytes

Correct

Explanation: C

Osteoblast → Mononucleated

Osteoclast → Multinucleated

Osteocyte → Mononucleated

25. Question1 points

In sarcomere H-zone is dissected by_.

1. A. A-band

2. B. M-line

3. C. I-band

4. D. Z-line

Correct

Explanation: B

1. Question1 points

Which of the given muscle cell are multinucleated?

1. A. Cardiac

2. B. Skeletal

3. C. Smooth

4. D. Both A and C

Correct

Explanation: B

2. Question1 points

Which of the given muscles is/are striated muscles?

1. A. Skeletal
2. B. Cardiac
3. C. Both
4. D. None

Correct

Explanation: C

3. Question1 points

_____% of the energy expended in muscles contraction is used in work?

1. A. 65%
2. B. 35%
3. C. 56%
4. D. 70%

Correct

Explanation: B

White rest 65% raises the temperature of body

4. Question1 points

Which of the given cells play major role in matrix production?

1. A. Osteoblasts
2. B. Osteocytes
3. C. Osteoclasts
4. D. Myocytes

Correct

Explanation: A

5. Question1 points

Cartilage heals slowly because:

1. A. It has no osteoclasts
2. B. It has no collagen-I
3. C. It has no blood vessels
4. D. Both B and C

Correct

Explanation: C

6. Question1 points

Which of the following have role in bone resorption?

1. A. Parathormone
2. B. Osteoclasts
3. C. Calcitonin
4. D. Both A and B

Correct

Explanation: D

Self Explanatory.

7. Question bones have _____% of inorganic salt?

1. A. 35%
2. B. 65%
3. C. 30%
4. D. None

Correct

Explanation: B

Self Explanatory.

8. Question1 points

Branched cells, irregular striation and involuntary control are the characteristics of:

1. A. Skeletal muscles cells
2. B. Smooth muscles cells
3. C. Cardiac muscles cells
4. D. Both A and C

Correct

Explanation: C

Self Explanatory.

9. Question1 points

Which of the given characteristics is not correct about skeletal muscle cells?

1. A. Voluntary
2. B. Branched
3. C. Multinucleated
4. D. All are correct

correct

Explanation: B

Only cardiac muscles are branched

10. Question1 points

During muscular contraction the Ca++ attach with _____.

1. A. Actin
2. B. Tropomyosin
3. C. Troponin

4. D. Myosin

Correct

Explanation: C

Self Explanatory.

11. Question1 points

A-band is due to:

1. A. Actin
2. B. Tropomyosin
3. C. Troponin
4. D. Myosin

Correct

Explanation: D

Self Explanatory.

12. Question1 points

Diameter of myofibril is _____ μm?

1. A. 10-100
2. B. 10-20
3. C. 2-3
4. D. None

Correct

Explanation: D

Diameter of myofibril : 1–2 μm

13. Question1 points

The boundaries of sarcomere are _____?

1. A. Two H-zones
2. B. Two M-lines
3. C. Two Z-lines
4. D. None

Correct

Explanation: C

14. Question1 points

The sarcoplasmic reticulum of the muscle fiber re-accumulate the Ca++ by _____?

1. A. Active transport
2. B. Passive transport
3. C. Diffusion
4. D. None

Correct

Explanation: A

15. Question1 points

Which of the given bone/s have no joints?

1. A. Coxal bone
2. B. Sternum
3. C. Both
4. D. None

correct

Explanation: D

All given bones have joint

16. Question1 points

The joints in the wrist are _____ joints.

1. A. Cartilaginous
2. B. Fibrous
3. C. Synovial
4. D. None

correct

Explanation: A

17. Question1 points

Hip joint is the example of _____ joint.

1. A. Hinge joint
2. B. Ball and socket joint
3. C. Cartilaginous joint
4. D. Fibrous joints

Correct

Explanation: B

18. Question1 points

Which one is multinucleated cell?

1. A. Osteocyte
2. B. Skeletal muscle cell
3. C. Both
4. D. None

Correct

Explanation: B

Osteocyte → Mononucleated

Skeletal muscle cell → Multinucleated

19. Question1 points

_____% of organic portion of bone contain collagen.

1. A. 65%
2. B. 70%
3. C. 90%
4. D. 35%

Correct

Explanation: C

Bone → 35% organic Matter (90% collagen and 10% glycoprotein)

20. Question1 points

Which one causes resorption?

1. A. Cells of collecting ducts
2. B. Osteoclast cells
3. C. Cells of proximal
4. D. Both A & C

Correct

Explanation: B

21. Question1 points

Which cells have stopped their bone forming capacity?

1. A. Osteoblast cells
2. B. Osteoclast cells
3. C. Both
4. D. None

Correct

Explanation: B

22. Question1 points

Crystals of Hydroxyapatite are found in _____.

1. A. Hyaline cartilage
2. B. Fibrous cartilage
3. C. Elastic cartilage
4. D. None

Correct

Explanation: D

23. Question1 points

Longest cytoplasmic extensions are found in?

1. A. Osteoblasts
2. B. Osteocytes
3. C. Osteoclasts
4. D. Chondrocytes

Correct

Explanation: B

24. Question1 points

Cartilaginous joints are found in?

1. A. Knee
2. B. Wrist
3. C. Elbow
4. D. Hip

Correct

Explanation: B

25. Question1 points

Ankle joints are _____.

1. A. Ball & Socket
2. B. Synovial
3. C. Freely movable
4. D. Cartilaginous

Correct

Explanation: D

26. Question1 points

Hip joint and shoulder joints are examples of

1. A. Cartilaginous joint
2. B. Synovial joint
3. C. Hinge joint
4. D. Ball and socket joint

correct

Explanation: d

Hinge joint – elbow, knee

Ball and socket joint → shoulder, hip

Cartilaginous joint → vertebrae, wrist, ankle bone

27. Question1 points

Which of these is mismatched?

1. A. Slightly moveable joint vertebrae
2. B. Hinge joint hip
3. C. Synovial joint elbow

4. D. Immoveable joint sutures in cranium

Correct

Explanation: B

Ball and socket joint → hip and shoulder

1. Question1 points

Regeneration of cartilage is carried on by:

1. A. Collagenous fibers
2. B. Blood vessels
3. C. Perichondrium
4. D. Matrix

Correct

Explanation: C

The regeneration of cartilage can occur from its perichondrium as it contains mesenchymal cell like features which are progenitor cells. This enables it undergo chondrogenesis and Hence can help in cartilage regeneration at site of defective tissues.

2. Question1 points

Mature cells of cartilage are:

1. A. Chondrocytes
2. B. Osteocytes
3. C. Osteoblasts
4. D. Osteoclasts

Correct

Explanation: A

Chondrocytes are the mature cells of cartilage.

Mature cells of bones is called Chondrocytes

3. Question1 points

The bone dissolving cells are called:

1. A. Osteoclast
2. B. Osteoblasts
3. C. Osteocytes
4. D. Fibroblast

Correct

Explanation: A

Bone forming cells are osteoblast

Bone dissolving cells are called osteoclast

4. Question1 points

Bone is surrounded by a membrane called:

1. A. Perichondrium
2. B. Prostomium
3. C. Perimysium
4. D. Periosteum

Correct

Explanation: D

Cartilage → Perichondrium

Bone → Periosteum

Brain → Meninges

Lung → Pleura

Kidney → Peritoneum

Heart → Pericardium

5. Question1 points

Process of bone formation is called:

1. A. Haversian canal
2. B. Chondrification
3. C. Decalcification
4. D. Ossification

Correct

Explanation: D

Process of bone formation is called Ossification

Process of bone dissolving is called Decalcification

6. Question1 points

The number of Hyoid bones in human skull region is:

1. A. 1
2. B. 6
3. C. 22
4. D. 206

Correct

Explanation: A

There is only one bone in the neck which is Hyoid bone which is present under the tongue for its support. It is U-shaped bone. It ties at base of mandible where is acts as a site of attachment for anterior neck muscle. It starts from cervical 3 vertebrae

7. Question1 points

Bones are held together with each other, and at joints by:

1. A. Nerves
2. B. Ligament
3. C. Tendon
4. D. Smooth Muscles

Correct

Explanation: B

Ligament held together and hold the bones in position.

Tendons holds bone and muscles together

8. Question1 points

Contraction can be sustained for a long period of time by:

1. A. Skeletal Muscles
2. B. Smooth Muscles
3. C. Cardiac Muscles
4. D. All of these

Correct

Explanation: B

Smooth muscles are found in digestive tract, urinary blander and arteries. They contract more slowly than the skeletal muscles but they can sustain contraction for longer period of time. With the help of our smooth muscles food in stomach and in small intestines shows peristalsis without our conscious command.

9. Question1 points

Fatigue free muscles are:

1. A. Striped
2. B. Unstriped
3. C. Cardiac
4. D. Triceps

Correct

Explanation: C

Cardiac muscles are found in the heart wall of never show fatigue.

ANSWER: C. Page No: 71 (Sub Topic: 16.3.1)

10. Question1 points

Sarcolemma is the membrane around?

1. A. Bone
2. B. Joints
3. C. Muscle Fiber
4. D. Heat

Correct

Explanation: C

Each muscle fiber is surrounded by a membrane celled sarcolemma

ANSWER: C. Page No: 72 (Sub Topic:16.3.2)

11. Question1 points

Heart muscles are called:

1. A. Smooth muscles
2. B. Myogenic muscles
3. C. Striated muscles
4. D. Skeletal muscles

Correct

Explanation: B

Text Book Reference; Page#71

12. Question1 points

During muscles relaxation the calcium ions are

1. A. Released from sarcoplasmic reticulum into sarcoplasm
2. B. Forced back from sarcoplasm to sarcoplasmic reticulum
3. C. Further forced from sarcoplasmic reticulum into sarcoplasm
4. D. Neither released more nor forced back but remain constant

Correct

Explanation: B

Sarcoplasmic reticulum stores calcium ions and after relaxation reaccumulates ions

13. Question1 points

The colour of bone marrow is:

1. A. Red
2. B. Yellow
3. C. Orange
4. D. Both A and B

Correct

Explanation: D

14. Question1 points

A network of tubules that runs through compact bone is called the:

1. A. Haversian canal
2. B. Periosteum
3. C. Marrow
4. D. Joint

Correct

Explanation: A

Self Explanatory.

15. Question1 points

Which type of cartilage is the most abundant in human body?

1. A. Hyaline cartilage
2. B. Elastic cartilage

3. C. Fibrocartilage

4. D. None of these

Correct

Answer = A

16. Question1 points

Smallest bone of the body is _____?

1. A. Stapes

2. B. Femur

3. C. Clavicle

4. D. Coccygeal

Correct

Answer = A

17. Question1 points

Which option is incorrect about cartilage

1. A. Having many bloods vessels

2. B. A form of connective tissue

3. C. It covers ends of the bone at the joint

4. D. Both A and B

Correct

Answer = A

18. Question1 points

Cartilage has no blood vessels so _____.

1. A. No transport of material occurs

2. B. Transport through diffusion occurs

3. C. No needs of transport

4. D. Transport is faster than bones

Correct

Answer = B

19. Question1 points

Chose a correct option for cartilage, it is a _____.

1. A. Cardiac tissue

2. B. Connective tissue

3. C. Epithelial tissue

4. D. Nervous tissue

Correct

Answer = B

20. Question1 points

Calcium is released from _____ during muscle contraction.

1. A. Cytoplasm

2. B. Sarcolemma

3. C. Sarcoplasmic reticulum

4. D. Muscle fiber

Correct

Answer = C

21. Question1 points

A sarcomere is the distance between _____?

1. A. Z-line and M-line

2. B. M-line and I bard

3. C. I band and A band

4. D. Z-line and Z-line

Correct

Answer = D

22. Question1 points

The living cell of cartilage is called?

1. A. Osteocytes

2. B. Osteoblasts

3. C. Osteoclasts

4. D. Chondrocytes

Correct

Answer = D

23. Question1 points

Which body cells are osteocytes?

1. A. White blood cell

2. B. Bone cell

3. C. Brain cell

4. D. None of these

Correct

Answer = B

24. Question1 points

The structural unit of muscle is _____ and functional unit is _____?

1. A. Myofibril, Myofilaments

2. B. Myofibril, Muscle fiber

3. C. Muscle fiber, Myofilaments

4. D. Muscle fiber, Sarcomere

Correct

Answer = D

25. Question1 points

Cardiac muscles differ from skeletal muscles by which of the following property?

1. A. Structure
2. B. Involuntary control
3. C. Calcium binding protein
4. D. Sarcotubular system

Correct

Answer = B

26. Question1 points

Which protein of muscle behaves like enzyme during muscle contraction?

1. A. Actine
2. B. Myosine
3. C. Troponine
4. D. Tropomyosine

Correct

Answer = B

27. Question1 points

A type of muscle found in vertebrates is/are:

1. A. Cardiac muscles
2. B. Skeletal muscles

3. C. Smooth muscles

4. D. ALL A, B, C

Correct

Answer = D

28. Question1 points

Collagens fibers are secreted at the broken ends of bones by_?

1. A. Fibroblasts
2. B. Chondroblasts
3. C. Osteocytes
4. D. Osteoblasts

Correct

Answer = B

29. Question1 points

All of the following are true for Smooth muscles except

1. A. Sustained contraction
2. B. Involuntary
3. C. Unstripped
4. D. Multinucleated

Correct

Answer = D

30. Question1 points

Hyaline cartilage forms joint between:

1. A. Growing bone
2. B. Mature bones

3. C. Lamellar bone

4. D. Secondary bone

Correct

Answer = A

31. Question1 points

Striated skeletal muscle cells are under:

1. A. Voluntary control

2. B. Involuntary control

3. C. Both A and B

4. D. None of these

Correct

Answer = A

32. Question1 points

Which of the following muscle fiber contains single nucleus?

1. A. Smooth muscle

2. B. Cardiac muscle

3. C. Both A and B

4. D. Skeletal muscle

Correct

Answer = C

33. Question1 points

Which of the following grouping is incorrect?

1. A. Skeletal, striated, voluntary

2. B. Cardiac, striated, involuntary

3. C. Cardiac, striated, voluntary

4. D. Both B and C

Correct

Answer = C

34. Question1 points

The fibrous connective tissue which attaches muscle to bone is called:

1. A. Tendon
2. B. Ligament
3. C. Reticular tissue
4. D. Cartilage

Correct

Answer = A

35. Question1 points

Bone to bone connection is:

1. A. Tendon
2. B. Ligament
3. C. Reticular tissue
4. D. Cartilage

Correct

Answer = B

36. Question1 points

All are the character of cardiac muscles except?

1. A. Striated and branched
2. B. Multinucleated

3. C. Self-excitatory

4. D. None of these

Correct

Answer = B

37. Question1 points

The main unit of thick filament is:

1. A. Myofibril
2. B. Actin
3. C. Myosin
4. D. Z-line

Correct

Answer = C

38. Question1 points

A smallest contractile unit of muscle contraction called sarcomere is the area between two?

1. A. H zone
2. B. M line
3. C. Z line
4. D. Z zone

Correct

Answer = C

39. Question1 points

What is located at both sides of the A band?

1. A. Z-line
2. B. H zone

3. C. I band

4. D. Z zone

Correct

Answer = C

40. Question1 points

Which of the following occurs during muscular contraction?

1. A. Actin slides over myosin
2. B. ATP supplies energy
3. C. Calcium ions are involved
4. D. All of these

Correct

Answer = D

41. Question1 points

Skeletal muscles are made up of:

1. A. Actin
2. B. Myosin
3. C. Both A & B
4. D. Actin, myosin and tropomyosin

Correct

Answer = D

42. Question1 points

Dimeter of myofibrils are _____?

1. A. 10 – 100 μm
2. B. 1 – 2 μm

3. C. 1 – 2 nm

4. D. 10 – 100nm

Correct

Answer = B

43. Question1 points

Pick an option that correctly describes the composition of cartilage:

1. A. Chondrocytes & type II collagen
2. B. Chondrocytes and fibrous membrane
3. C. Chondrocytes & type I collagen
4. D. Chondrocytes and periosteum

Correct

Answer = A

44. Question1 points

Muscles are attached to bones by:

1. A. Ligaments
2. B. Cartilage
3. C. Both A & B
4. D. Tendons

correct

Answer = d

45. Question1 points

What type of enzyme is myosin?

1. A. ATP synthase
2. B. ATP hydrolase

3. C. ADP hydrolase

4. D. ADP synthase

Correct

Answer = B

46. Question1 points

Fluid present in synovial joint is:

1. A. Synovial fluid
2. B. Pericardial fluid
3. C. Plural fluid
4. D. Interstitial fluid

Correct

Answer = A

47. Question1 points

Among the following types of joints, pick the one those are partially moveable?

1. A. Fibrous joints
2. B. Cartilaginous joints
3. C. Hinge joints
4. D. Ball & socket joints

Correct

Answer = B

48. Question1 points

Embryo has 350 bones, adult has 206 bones, as a whole 144 bones reduces in number. This reduction in bones is because of _____.

1. A. Loss of bones

2. B. Bones convert into muscles

3. C. Bones are reduces by diseases like osteoporosis

4. D. Fusion of bones

Correct

Answer = D

49. Question1 points

Which sequence is correct about myofibril?

1. A. A band has I band

2. B. I band has H-zone and M-line

3. C. A band has H-zone and H-zone has M-line

4. D. A band has Z-line

Correct

Answer = C

50. Question1 points

During muscle contraction, Ca+ makes bond with _____.

1. A. Myosine

2. B. Actine

3. C. Troponine

4. D. Tropomyosine

Correct

Answer = C

51. Question1 points

During muscle contraction, the length of myofilaments _____?

1. A. Decreases

2. B. Increases

3. C. Remain same

4. D. Doubles in width half in length

correct

Answer = c

52. Question1 points

An entire skeletal muscle is surrounded by:

1. A. Sarcolemma

2. B. Microtubules

3. C. Both A and B

4. D. Epimysium

Correct

Answer = D

53. Question1 points

It is present in cardiac muscles but absent in smooth muscles:

1. A. Tropomyosin

2. B. Actin

3. C. Troponin

4. D. Myosin

Correct

Answer = C

54. Question1 points

Which of the following are multinucleated cells?

1. A. Osteoblast

2. B. Osteocytes

3. C. Osteoclasts

4. D. None

Correct

Answer = C

55. Question1 points

The only bone of neck is called?

1. A. Axis

2. B. Atlis

3. C. Hyoid

4. D. Coxal

Correct

Answer = C

56. Question1 points

Which of the following joints have joint cavity?

1. A. Fibrous joints

2. B. Cartilaginous joints

3. C. Hinge joints

4. D. Immoviable

Correct

Answer = C

57. Question1 points

What is hydrolysed during muscle contraction?

1. A. ACP

2. B. ADP

3. C. NAD

4. D. ATP

Correct

Answer = D

58. Question1 points

Actin and myosin are _____ proteins.

1. A. Globular

2. B. Fibrous

3. C. Functional

4. D. Both A and B

Incorrect

Answer = B

59. Question1 points

Skeletal muscles cause:

1. A. Constriction of blood vessels

2. B. Heart beat

3. C. Dilation of pupil

4. D. Eye movement

Correct

Answer = D

60. Question1 points

How many ATP are required for one cycle of muscle contraction and relaxation?

1. A. 1

2. B. 3

3. C. 2

4. D. 4

Correct

Answer = A

61. Question1 points

Which one pf the following condition is caused by bacteria?

1. A. Cramps

2. B. Muscle fatigue

3. C. Tetany

4. D. Tetanus

Correct

Answer = D

62. Question1 points

Largest bone of the body is_?

1. A. Stapes

2. B. Femur

3. C. Clavicle

4. D. Coccygeal

Correct

Answer = B

63. Question1 points

In cartilaginous joint:

1. A. Joint cavity is absent

2. B. Joint cavity is present
3. C. Both A and B
4. D. None

Correct

Answer = A

64. Question1 points

Sarcoplasm is different form cytoplasm:

1. A. It contains sarcoplasmic reticulum
2. B. It contains glycogen
3. C. It contains glycogen and oxygen binding protein, myoglobin
4. D. All of these

Correct

Answer = D

65. Question1 points

Which of the following is anisotropic?

1. A. Band
2. B. I band
3. C. M line
4. D. Z line

Correct

Answer = A

66. Question1 points

Region between two successive Z lines is:

1. A. Sarcomere

2. B. H zone

3. C. M line

4. D. A band

Correct

Answer = A

67. Question1 points

Joints are classified on the basis of:

1. A. The amount of movement allowed by them

2. B. Nature of structure they have

3. C. Type of bones they join

4. D. Both B and C

Correct

Answer = A