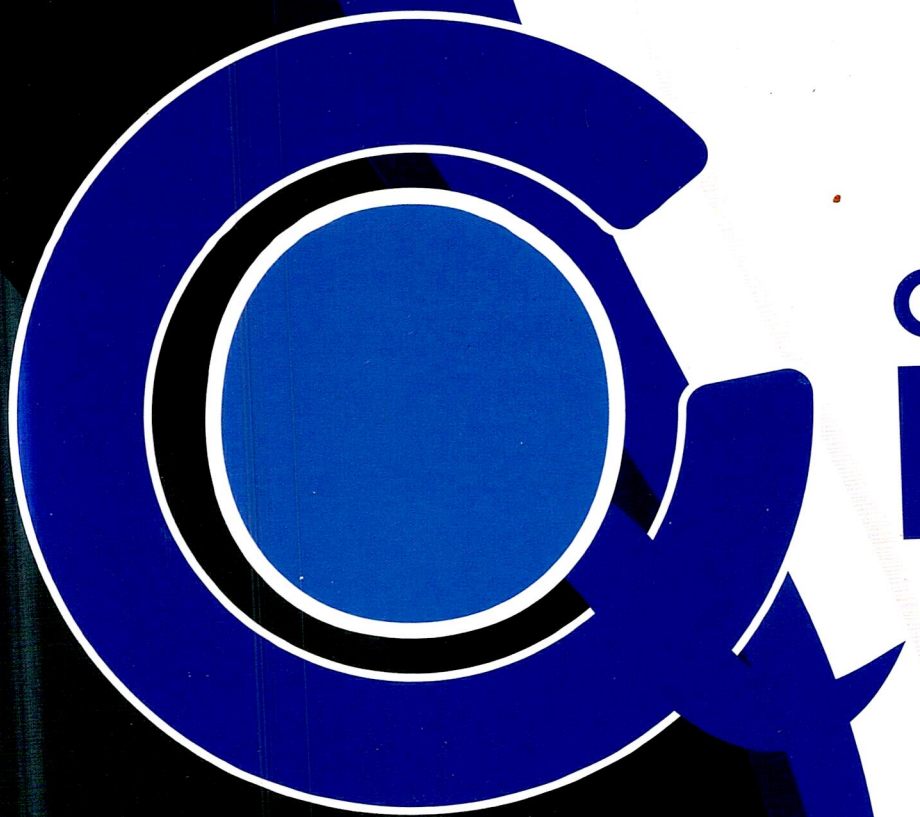
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Applied Anatomy

Chapter 1

Applied Anatomy

1.1. Which of the following regarding Thoracic Outlet is true?

A. There are two potential areas in the thoracic outlet region where compression can occur
B. The portion where the brachial plexus divisions lie is the costoclavicular space
C. The cervical rib is of three types
D. The cervical rib has to be excised in all cases
E. Nerve conduction studies are not required when a suspicion of Thoracic outlet syndrome is present

Ans

1.2. The ventral rami of C5 and C6 combine to form

A. Superior trunk
B. Middle trunk
C. Lower trunk
D. Dorsal scapular nerve
E. Long thoracic nerve

Ans

1.3. There are lateral, medial and posterior cords formed from the various divisions of the trunks. These cords lie

A. Over the pectoralis minor
B. Beneath the pectoralis minor
C. Pierce the pectoralis minor
D. Over the pectoralis minor except for the posterior cord
E. Beneath the pectoralis minor except for the lateral cord

Ans

1.4. Each cord divides into two end branches. The axillary nerve is an end branch of the

A. Medial cord B. Lateral cord
C. Middle cord D. Posterior cord
E. Both lateral and the middle cord

Ans

1.5. What is true about Erb's Palsy?

A. Adduction + Internal rotation
B. Supination seen
C. C5, C6 roots affected
D. Lower trunk injury causes this deformity
E. Claw hand is seen

Ans

1.6. Which of the following is not true about Klumpke's paralysis?

A. Involves lower trunk of brachial plexus
B. Intrinsic muscles of hand are paralyzed
C. Claw hand is a feature
D. Horner's syndrome can never be associated
E. None Of Above

Ans

1.7. Erb's palsy involves injury to:

A. C5, C6 roots
B. C6 C7 roots
C. C7, C8 roots
D. C8, T1 roots
E. None Of Above

Ans

1.8. Brachial plexus injury with Horner's syndrome, nerve root level involved is.

A. C5 B. C6
C. C7 D. T1
E. None Of Above

Ans

1.9. Which of the following deformity is evident in case of Erb's palsy?

A. Policeman tip deformity
B. Winging of scapula
C. Claw hand
D. Wrist drop
E. None Of Above

Ans

1.10. Aeroplane splint is used in:

A. Radial nerve injury
B. Ulnar nerve injury
C. Brachial plexus injury
D. Scoliosis
E. None Of Above

Ans

1.11. Muscles paralyzed in Erb's paralysis are all except:

A. Biceps B. Triceps
C. Brachioradialis D. Brachialis
E. None Of Above

Ans

1.12. Klumpke's paralysis involves:

A. C1–2
B. C4–5
C. C5–6
D. C8 T1
E. None Of Above

Ans

1.13. Which of the following is a correct statement with regards to ossification centers around elbow?

A. Capitellum → lateral epicondyle → trochlea → olecranon
B. Capitellum → radial head → trochlea → olecranon
C. Capitellum → trochlea → radial head → olecranon
D. Capitellum → medial epicondyle → radial head → olecranon
E. Capitellum → medial epicondyle → radial head → lateral epicondyle

Ans

1.14. Erb's palsy all the movements are lost except:

A. Supination
B. External rotation at shoulder
C. Abduction at shoulder
D. Pronation
E. None Of Above

Ans

1.15. A 45-year-male present with abrupt onset, pain, weakness, loss of contour of shoulder and wasting of muscle of arm on 5th day of tetanus toxoid immunization in deltoid. Likely cause is:

A. Radial nerve entrapment
B. Thoracic outlet syndrome
C. Brachial neuritis
D. Hysteria
E. None Of Above

Ans

1.16. All are true regarding brachial plexus injury, except:

A. Preganglionic lesions have a better prognosis than postganglionic lesions
B. Erb's palsy causes paralysis of the abductors and external rotators of the shoulder
C. In Klumpke's palsy, Homer's syndrome may be present on the ipsilateral side
D. Histamine test is useful to differentiate between the preganglionic and postganglionic lesions
E. None Of Above

Ans

1.17. Retraction of conjoint tendon cause what nerve injury ?

A. Radial
B. Musculocutaneous
C. Ulnar
D. Median
E. All of the above

Ans

1.18. Most common cause of neurological deficit in upper limb is:

A. Polio
B. Erb's palsy
C. C1–C2 dislocation
D. Fracture dislocation of cervical spine
E. None Of Above

Ans

1.19. Which of the following is the nerve root of the phrenic nerve?

A. C4
B. C5
C. C3
D. C3, C4
E. C3, C4, C5

Ans

1.20. The following form the superior boundary of the subacromion space except

A. Acromion
B. Coraco-acromial ligament
C. Coracoid
D. Coraco acromial arch
E. Clavicle

Ans

Chapter 2

Applied Anatomy

2.1. Which of the following reduction parameters of the lower end of radius is not acceptable?

A. Radial shortening of 4 mm at the DRUJ
B. Radial inclination of 16 degree
C. Intraarticular step of 1mm
D. Articular incongruity of 1 mm at the sigmoid notch
E. Volar tilt of 21 degree

Ans

2.2. The Modified Henry's approach is performed between

A. FCR and the radial artery
B. FCR and the Palmaris longus
C. Brachioradialis and the radial artery
D. Brachioradialis and the first extensor compartment
E. None of the above

Ans .

2.3. Which of the following is the largest muscle among the rotator muscle groups?

A. Teres minor
B. Teres major
C. Supraspinatus
D. Subscapularis
E. Infraspinatus

Ans

2.4. Which of the following statements regarding the intrinsic muscles of the hand are true?

A. There are a total of 3 lumbricals and 4 interossei
B. The tendon of the dorsal component of the DI passes almost directly over the axis of rotation of the joint and thus may extend, flex, or abduct the phalanx; its angle of attack is 0 to 5 degrees.
C. The palmar components of the dorsal and the palmar interossei attack the joint well below the axis and thus are capable of flexing the MCP joint more strongly, as well as of extending the interphalangeal joints; their angle of attack is 20 to 25 degrees.
D. Each lumbrical approaches the MCP joint palmar to the transverse metacarpal ligament and is mechanically best suited to initiate flexion of the MCP and to insert force on the joint when in flexion; their angle of attack is 35 degrees.
E. All except (a) is true

Ans .

2.5. Which of the following about Dorr classification is false?

A. Type A Dorr femurs have thick cortex and a narrow canal
B. Type A Dorr is also known as Champagne flute
C. Type B Dorr is also known as Champagne flute
D. Type C Dorr is also known as Stove pipe
E. Type C Dorr has a wide canal with narrow cortex

Ans

2.6. The root value of the sciatic nerve is

A. L4, L5, S1
B. L4, L5, S1, S2
C. L4, L5, S1, S2, S3
D. L5, S1, S2, S3, S4
E. S1, S2, S3, S4, S5

Ans

2.7. What is false regarding the Stoppas approach?

A. It is an extension to the ilioinguinal approach
B. It helps in visualising the quadrangular plate better
C. It helps in visualizing the pelvic brim
D. It is not very useful in obese patients
E. It was first described by Cole and Bolhofner

Ans

2.8. The following are few statements that describe the skin incisions over the hand. Which of the following are false?

A. The subcutaneous fat is plenty in the deep crease area and should be preferred for incision
B. Z plasty incision is preferred for a Dupuytren's contracture
C. Straight line incisions have to be avoided
D. Straight line incisions can be used on the dorsal aspect while treating a Rheumatoid deformity of the hand
E. All are false

Ans

2.9. All of the following regarding hip aspirations are true except

A. A lateral, anterior and medial approach can be used for aspiration
B. While performing a medial approach one should place the needle inferior to the adductor longus tendon
C. While performing an anterior aspiration the needle is inserted 2.5 cm medial and distal to the palpable femoral artery
D. An additional arthrogram should be used when ever it is possible
E. The position of ease in a hip effusion is flexion and abduction

Ans

2.10. The following is the principle of Ganz safe surgical dislocation of the femoral head

A. Posterior dislocation of the hip is the safest
B. The medial circumflex artery lies posteriorly and hence an anterior dislocation is preferred
C. The obturator externus is the only structure that is sacrificed to prevent AVN
D. A trochanter osteotomy is avoided to prevent damage to the blood supply
E. None

Ans

2.11. Which of the following is true about LobenhofferApproach?

A. It is the posterior approach to fix the elbow
B. It is the posterior approach to the hip
C. It is lateral approach to release the compartment syndrome
D. It is the posteromedial approach to the proximal tibia
E. It is the both posteromedial and posterolateral approach to the proximal tibia

Ans

2.12. Which of the following is true about the joint reaction force in a hip?

A. Twice during SLRT
B. 6 times in single leg stance
C. 2 times in walking
D. Upto 5 times while running
E. Increased on using a cane

Ans

2.13. Which of the following were Sir John Charnley's concepts to improve the hip function in arthroplasty?

A. Shorten the lever arm of the body weight by deepening the acetabulum
B. centralize the femoral head
C. Lengthen the lever arm of the abductor mechanism by reattaching the osteotomized greater trochanter medially.
D. Moment produced by the body weight is increased and the counterbalancing force that the abductor mechanism must exert also is increased improving the hip biomechanics.
E. Both A and B

Ans

2.14. Which of the following closely resembles the hip biomechanics?

A. Can opener B. Plier
C. Cantilever D. Wheel barrow
E. None

Ans

2.15. The ankle follows which class of lever

A. Class 1 B. Class 2
C. Class 3 D. Class 4
E. Class 1 while stance and class two while swing

Ans

2.16. Which of the following is not possible by a pelvic osteotomy?

A. Relief in pain
B. Realign the coverage
C. Improve the alignment
D. Correct limb length discrepancy
E. Improve abductor function

Ans

2.17. Which of the following regarding functional cast bracing is true?

A. It encourages the osteogenesis
B. Promotes tissue healing
C. Prevents joint stiffness
D. All of the above
E. None of the above

Ans

2.18. The blood supply to the fracture site is increased by

A. Muscle contraction
B. Loading
C. Micromotion at the fracture site
D. Absolute stability
E. All except d

Ans

2.19. Which of the following regarding cast index is true?

A. It was described by Sarmiento
B. It is the ratio between the width of the cast in an AP xray to that in the lateral view
C. It was used traditionally for forearm fractures
D. Ideal cast index should be more than 1
E. Cast index less than 0.8 indicates poor casting

Ans

2.20. Which of the following is true regarding padding index?

A. It is the ratio of padding thickness in the plane of maximum deformity correction and the greatest interosseus distance in the AP view.
B. It was described by Bhatia and Housden in 2006
C. The value should be below 0.3
D. It indicates a 3 point fixation of the fracture if padding is adequate
E. All of the above

Ans

Chapter 3

Applied Anatomy

3.1. Shoulder flexion is done by:

A. Posterior fibres of deltoid
B. Pectoralis major
C. Pectoralis minor
D. Latissimus dorsi
E. None of Above

Ans

3.2. What is the normal orientation of humeral head?

A. Retroversion of 80 degrees
B. Retroversion of 30 degrees
C. Anteversion of 15 degrees
D. Anteversion of 50 degrees
E. None of Above

Ans

3.3. Which of the following structure passes through the quandrangular space?

A. Axillary nerve
B. Radial nerve
C. Median nerve
D. Brachial artery
E. Musculocutaneous nerve

Ans

3.4. Dynamic stabilisers of shoulder joint:

A. Glenoidal labrum
B. Rotator cuff muscles
C. Glenohumeral ligament
D. Coracohumeral ligament
E. Brachial plexus

Ans

3.5. For long the muscle was not given its due importance and was called Forgotten muscle of rotator cuff which one is it?

A. Subscapularis
B. Supraspinatus
C. Infraspinatus
D. Teres minor
E. Teres major

Ans

3.6. Rotator interval is between:

A. Supraspinatus and teres minor
B. Teres major and teres minor
C. Supraspinatus and subscapularis
D. Subscapularis and infraspinatus
E. None of Above

Ans

3.7. Muscle crossing through the shoulder joint is:

A. Biceps short head
B. Biceps long head
C. Triceps long head
D. Coracobrachialis
E. None of Above

Ans

3.8. Weakest portion of shoulder joint capsule is:

A. Anterior
B. Posterior
C. Inferior
D. Superior
E. None of Above

Ans

3.9. 1st Carpal bone to ossify:

A. Trapezoid
B. Capitate
C. Lunate
D. Pisiform
E. None of Above

Ans

3.10. Ossification center of scaphoid appears at:

A. 1–6 months
B. 1 to 2 years
C. 2 to 4 years
D. 4 to 6 years
E. None of Above

Ans

3.11. Axis of upper limb passes through:

A. Capitulum
B. Trochlea
C. Olecranon
D. Radial styloid
E. DRUJ

Ans

3.12. A patient came with complaint of difficulty in climbing upstairs. When he is made to stand on his right leg left side of pelvis fell to a lower level. When he stands on left leg then right side of pelvis can be drawn up. Which of the following nerve of him has got affected?

A. Right inferior gluteal
B. Right superior gluteal
C. Left superior gluteal
D. Left inferior gluteal
E. None of Above

Ans

3.13. Which of the following has not been shown in the literature to increase the risk of heterotopic ossification?

A. Prolonged ventilator time in multiply traumatized patients
B. Spinal cord injury
C. Amputation through the zone of injury in patients injured in blasts
D. Open fractures
E. Severe burns

Ans

3.14. Which of the following is the boundaries of the Babcocks triangle?

A. Medially- physis of the head of the femur
B. Laterally- primary compressive trabeculae
C. Inferiorly- inferior border of neck of femur
D. All of the above
E. Laterally- secondary compressive trabeculae

Ans

3.15. Singhs index. False is

A. Stage 1- loss of secondary tensile trabeculae
B. Stage 2- loss of secondary compression trabeculae
C. Stage 3- loss of primary tensile trabeculae
D. Stage 4- loss of primary compression trabeculae
E. Stage 5- loss of secondary compression trabeculae

Ans

3.16. Which of the following is the most common position of ease in a hip joint?

A. Flexion abduction and external rotation
B. Flexion adduction and external rotation
C. Flexion abduction and internal rotation
D. Extension abduction and external rotation
E. Extension abduction and internal rotation

Ans

3.17. Where in orthopedics, is the technique of 'rolling thumb' and 'three circles' used?

A. To palpate the femoral artery before technique of embolization
B. To palpate the hamstring graft
C. To palpate distal to the listers tubercle to place portals for arthroscopy
D. To palpate crepitus for fractures
E. To palpate the medial portal for the knee arthroscopy

Ans

3.18. Harmons posterolateral approach is used in case of?

A. Femur fracture
B. Proximal radius fracture
C. Tibia shaft fracture
D. Posterior proximal tibia fixation
E. None

Ans

3.19. Which of the following can prevent an injury to the posterior interosseus nerve while approaching the radius posteriorly with certainty?

A. Detaching the insertion of supinator
B. Subperiosteal elevation of the bone
C. Hold the forearm in maximum pronation
D. Hold the forearm in maximum supination
E. Full dissection of the nerve

Ans

3.20. Lobenhoffers approach was described to

A. Lateral approach to distal femur
B. Transtrochanteric approach to the hip
C. Posterolateral and posteromedial approach to the proximal tibia
D. Posterolateral approach to the posterior malleolus
E. Posterior approach to elbow

Ans

Basic Sciences

Chapter 4

Basic Sciences

4.1. The organic component of bone matrix, which includes collagen, proteoglycAns-, and other non-collagenous proteins, comprises what proportion of the dry weight of bone?

A. 20% B. 40%
C. 60% D. 80%
E. 95%

Ans

4.2. Most of the growth of the arm is contributed by

A. 60 percent by the proximal humerus
B. 50 percent by the lower end of the humerus
C. 85 percent by the proximal humerus
D. 30 percent by the proximal humerus
E. 20 percent by proximal humerus

Ans

4.3. Most of the growth of the forearm arm is contributed by

A. 60 percent by the proximal forearm
B. 75 percent by the lower end of the forearm
C. 85 percent by the proximal forearm
D. 30 percent by the proximal forearm
E. 20 percent by proximal forearm

Ans

4.4. Which of the following is responsible for calcification of the zone of provisional calcification?

A. Apoptosis of chondrocytes
B. Vascular invasion from the metaphyseal blood vessels
C. The arrangement of the cells
D. Hypertrophy of the chondrocytes
E. None of the above

Ans

4.5. Which of the following is the first to appear in an elbow radiograph of an infant ?

A. Capitellum B. Radial head
C. Medial epicondyle D. Lateral condyle
E. None

Ans

4.6. Which of the following is true regarding the growth of the lower limb?

A. More than two thirds of the growth of the lower limb occur at the ankle and the proximal femoral physis together
B. More than two thirds of the growth of the lower limb occur at the distal femur and the proximal tibial physis together
C. 30 percent of the lower limb growth is contributed by the distal femur
D. All of the above
E. None of the above

Ans

4.7. What is common in all types of rickets?

A. Low vitamin D
B. Low calcium
C. Abnormal matrix structure
D. Failure of provisional zone calcification
E. All of the above

Ans

4.8. Which of the following is common in most of infections in childhood?

A. Very common cause is trauma
B. Most common cause is exposure to low sunlight
C. Hematogenous spread happens in most cases
D. Diaphyseal involvement is very common
E. Epiphyseal infections are common in growing children

Ans

4.9. Which of the following are the proposed hypothesis for a slip in SCFE?

A. Genetic
B. Hormonal
C. High BMI
D. Relative weakness of the fibrous ring
E. All of the above

Ans

4.10. Which of the following is false?

A. Physis responds only to stresses
B. The stress across the physis helps it to grow
C. The compression across the physis can cause retardation of growth
D. The tensile side of the physis have more growth
E. Compression if not uniform across physis can lead

to deformities

Ans

4.11. Wolf law states that

A. Bone remodelling happens due to compression
B. Bone remodelling happens due to stresses across the bone
C. It states that the bone is mechano resistant
D. Increased stresses can lead to weakening of the bones
E. None of the above

Ans

4.12. Physeal injury patients are followed up till maturity occurs to look for growth arrest. When will you consider that the child has grown satisfactorily enough?

A. Compare the child's height with the elder child
B. Compare the child's height with the arm span
C. Compare the child's height with that of the average of the parents height
D. Look for parallel Harris growth arrest lines on xrays
E. All of the above

Ans

4.13. What size of the growth plate bony bridge cannot be resected?

A. Bony bridge of surface area more than 20 percent size of the whole growth plate
B. Bony bridge of surface area more than 40 percent size of the whole growth plate
C. Bony bridge of surface area more than 60 percent size of the whole growth plate
D. Bony bridge of surface area more than 80 percent size of the whole growth plate
E. Bony bridge of surface area more than 20 percent size of the whole growth plate

Ans

4.14. Which of the following can affect the epiphysis of a child?

A. Osteogenesis imperfecta
B. Osteopetrosis
C. Achondroplasia
D. Enchondromatosis
E. Trevors disease

Ans

4.15. Pseudo achondroplasia affects which part of the bone

A. Diaphysis B. Metaphysis
C. Metadiaphyseal junction
D. Physis
E. Epiphysis

Ans

4.16. Which of the following is a basic back bone of bisphosphonates?

A. P-C-P B. P-O-P
C. P-N-P D. P-H-P
E. P-P-P

Ans

4.17. Which of the following is true regarding bisphosphonates?

A. The basic back bone structure is responsible for its activity
B. The basic back bone is resistant to phosphatases
C. The bisphosphonates act by directly stabilizing the hydroxyapatite crystal
D. It should not be used in cases of osteogenesis imperfecta
E. All except d

Ans

4.18. Warfarin is a anticoagulant which has a structure similar to that of vitamin K and it inhibits the Vitamin K dependent gama carboxylation of glutamate residues of all of the following except

A. Factor II B. Factor V
C. Factor VII D. Factor X
E. Factor IX

Ans

4.19. BMD by DEXA scan is the method to measure the level of mineral in the bones. Which of the following is true regarding BMD

A. It can give separate densities of the cortical and cancellous bone
B. It can give a better interpretation of osteoporosis on an AP view of the spine
C. If there is an associated fracture of the vertebra then there can be a false high density value
D. In the femur the density of the femoral neck alone is utilized
E. All are true

Ans

4.20. Which of the following is considered as a severe osteoporosis?

A. When T score is more than -1
B. When T score is in between -1 and - 2.5
C. When the T score is more than – 2.5
D. When the T score is more than -2.5 with any fragility fractures
E. Both C and D

Ans

Chapter 5

Basic Sciences

5.1. Which of the following regarding tendons are wrong?

A. Tendons transmit the tensile loads from muscle to bone
B. Tendons store energy
C. Tendons have a fibroblast: collagen ratio is 80:20
D. Tendons have less elastin than ligaments
E. Tendons help to give more exertion of movement of a joint

Ans

5.2. Which of the following is false about collagen?

A. More than 90 percent of collagen in tendons are type 1
B. Type 1 collagen has three polypeptide chains which are arranged in a right handed triple helix
C. Inter bonding is done by hydrogen
D. The arrangement of the collagen in tendons are staggered and not parallel
E. The ligaments have a more layered arrangement and this sustains the tensile stresses

Ans

5.3. The ligaments and tendons insert into the bone and consists of four zones of indirect insertion. Which of the following is true regarding the zones

A. Zone 1 has mineralized fibrocartilage and merges into the cortical bone
B. Zone 2 has onset of mineralization of the fibrocartilage
C. Zone 3 has collagen fibres intermesh with unmineralized fibrocartilage
D. Zone 4 has parallel collagen fibres at the end of the end of the ligament
E. Perforating fibres of Sharpey cross all 4 zones of the insertion

Ans

5.4. Tendons receive nutrition from

A. Small arterioles that supply it
B. Vincula
C. Mesotenon and paratenon
D. Through diffusion
E. All of the above

Ans

5.5. Bone formation occurs in several ways. Which of the following involves undifferentiated mesenchymal cells aggregating into layers, then differentiating into osteoblasts, and finally depositing an organic matrix that mineralizes?

A. Appositional ossification
B. Embryonic long bone formation
C. Enchondral ossification
D. Intramembranous ossification
E. Ossification of fracture callus

Ans

5.6. Which of the following characterizes fresh-frozen cortical allograft as a bone graft material?

A. Osteoconductive, osteogenic, good structural integrity
B. Osteoconductive, osteoinductive, osteogenic
C. Osteoconductive, osteoinductive, good structural integrity
D. Osteoconductive, osteogenic, low immunogenicity
E. Osteoconductive, osteoinductive, lacks structural integrity

Ans

5.7. Which of the following is false regarding healing?

A. Growth factors increase fibroblast proliferation
B. Steroids increase the adhesive property during the healing
C. Hyaluronic acid reduces the adhesive property during healing
D. Hyaluronic acid reduces the rate of tendon healing
E. Steroids can lead to infection during the healing process leading to halt in the whole process

Ans

5.8. Which of the following regarding meniscus is false?

A. Each meniscus covers more than two thirds of the corresponding condyle of the tibia
B. The peripheral border is concave
C. The peripheral border is attached to the capsule
D. The inner most edge of the meniscus is free
E. A meniscus trAns-plant can be offered in patients with in partial and post menis cectomy patients

Ans

5.9. What is the definition of creep of any material?

A. Increase in deformation or strain that occurs when a constant load is applied over an extended period and as time passes this strain becomes less pronounced
B. Is the loss of heat when load is applied on an object
C. Decrease in the stress in a body when exposed to constant pressure
D. When maturing the number of cross-linking increases
E. None of the above

Ans

5.10. Which of the following is an example of creep in orthopedics?

A. Bone cement setting
B. Ponsetti casting for deformity correction
C. Application of plate over the tensile side of the bone
D. Application of plate on the compressive side of the bone
E. Hoop stresses that arise when passing an intramedullary nail

Ans

5.11. Which of the following is true about the tendon strength?

A. When there is high loading, the tendon – bone complex is the weakest point
B. When there is low loading, the tendon itself is weak
C. The cross section of the muscle if less then more is the strain on the tendon
D. When a muscle is maximally contracted the tensile stress on the tendon is the highest
E. A concentric contraction can lead to more stress than an eccentric contraction on the tendon

Ans

5.12. Which of the following regarding meniscus is true?

A. It is a fibrocartilaginous structure
B. It has around 70 percent of water in the extracellular matrix
C. It has mainly collagen type 1
D. The collagen in the middle layer shows a circumferential orientation
E. The meniscus provides lesser contact area and more greater contact stress

Ans

5.13. What is true about healing by intramembranous ossification ?

A. It has a cartilaginous phase before getting converted into the osteogenic phase.
B. It is seen in development of most of the long bones and in fractures which attempt to heal with relative stability or secondary healing.
C. It has an anabolic phase where there is increase in chondroblasts
D. It has a catabolic phase when there is increased activity of osteoclasts and osteoblasts.
E. Happens in fracture healing by an interfragmentary lag screw compression

Ans

5.14. What is true about soft callus?

A. There is minimal mesenchymal cells derived from the marrow alone
B. The pericytes donot contribute to MSC at this stage
C. There is hypertrophy of the chondrocytes and is regulated by the Sox9 gene
D. Mainly occurs in fracture healing through intramembranous healing
E. The chondrocytes are weak and atrophied here and can later undergo apoptosis

Ans

5.15. Which of the following regarding SMOKING is false?

A. It causes decrease rate of fracture healing
B. inhibits growth of new blood vessels as bone remodels
C. increase risk of non-union
D. increases risk of pseudoarthrosis in spine fusion by 500%
E. it increases the strength of fracture callus

Ans

5.16. What is a tidemark in the articular cartilage?

A. It is the boundary between the calcified and the uncalcified cartilage
B. It is an area in the articular cartilage where there is maximum number of cells
C. It separates the superficial gliding zone and the middle trAns-itional zone
D. It separates the middle trAns-ition zone and the deep radial zone
E. None of the above

Ans

5.17. Which of the following is true about collagen 10?

A. Most abundant collagen
B. Is present in the uncalcified areas of the cartilage
C. It is associated with calcification of the cartilage
D. It is produced by the atrophied chondrocytes
E. It is absent in fracture callus

Ans

5.18. Which of the following is true about type 1 collagen?

A. Usually absent in articular cartilage but can occur in an injured cartilage with Fibrocartilage development
B. It is the collagen found in maximum Quantity in the articular cartilage
C. Helps in cartilage calcification
D. Found in bone tissue in least Quantity
E. Seen synovial tissue

Ans

5.19. What is true about osteoarthritis?

A. Chondrocytes mimic an enchondral bone formation
B. There is excessive collagen type X synthesis
C. There is increase in water content
D. There is formation of matrix vesicles and matrix calcification
E. All of the above

Ans

5.20. Which are the three most common primary tumors to metastasize to bone?

A. Lung, kidney, thyroid
B. Breast, brain, lung
C. Lung, breast, brain
D. Breast, prostate, lung
E. Breast, lung, thyroid

Ans

Chapter 6

Basic Sciences

6.1. Which of the following groups correctly identifies serologic tests that are required by the American Association of Tissue Banks (AATB) for musculoskeletal tissue allografts?

A. Cytomegalovirus, Hepatitis A, Hepatitis B, Hepatitis C, HIV, Syphillis
B. Cytomegalovirus, Hepatitis A, Hepatitis B, Hepatitis C, HIV
C. Hepatitis A, Hepatitis B, Hepatitis C, HIV, Syphillis
D. Hepatitis B, Hepatitis C, HIV, Syphillis
E. Hepatitis B, Hepatitis C, HIV

Ans

6.2. Which of the following study designs represent a level III evidence study?

A. Prospective, randomized controlled trial
B. Retrospective case-control study
C. Retrospective case series
D. Prospective cohort study
E. Expert opinion

Ans

6.3. Vitronectin is an important receptor involved in which of the following functions?

A. Interacts with RANK Ligand to stimulate osteoclasts
B. Osteoclasts attaching to bone
C. Competitive inhibition of RANK Ligand
D. Chemotaxis in fracture healing
E. Type II collagen formation

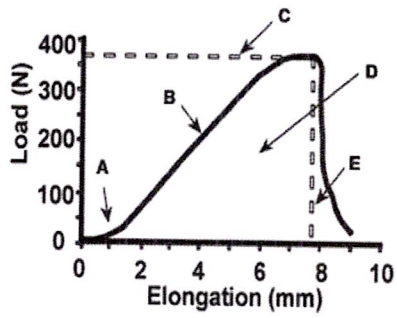
Ans

6.4. The femur radiograph of a healthy 25-year-old female is compared to the femur radiograph of a healthy 85-year-old female. Which of the following best describes the 25-year-old's femur?

A. Increased cortical thickness and a smaller medullary canal volume
B. Decreased cortical thickness and a larger medullary canal volume
C. Equivalent cortical thickness and medullary canal volume
D. Increased cortical thickness and larger medullary canal volume
E. Decreased cortical thickness and a smaller medullary canal volume

Ans

6.5. A typical load-elongation curve of a ligament is shown in Figure A. What region of the curve represents elastic deformation occurring after the crimped ligament fibrils have been straightened?



A. A
B. B
C. C
D. D
E. E

Ans

6.6. The active form of vitamin-D (calcitriol) is produced by the enzyme 1-alpha-hydroxylase. What hormone activates this enzyme?

A. Thyroid stimulating hormone (TSH)
B. Parathyroid hormone (PTH)
C. Estrogen
D. Progesterone
E. Testosterone

Ans

6.7. Using levels of evidence in research studies, which of the following represents a level II study?

A. Retrospective case control study
B. Prospective cohort study
C. Case report of 3 patients with the same disease
D. High-quality randomized prospective clinical trial
E. The opinion of a review panel at the annual AAOS meeting

Ans

6.8. The injury in the region of the groove of Ranvier can affect growth of the bone. What is this region of the growth plate responsible for?

A. Longitudinal bone growth
B. Appositional bone growth