**FQE QUESTONS 2016**

**Anatomy questions**

Q1.which of the following statements is not true about the sciatic nerve.

1. Root value, l4 l5, S1, S2, S3.
2. It emerges from the greater sciatic foramen below piriformis
3. **It crosses the anterior surface of ischium.**
4. It is crossed by the long heads of biceps femoris
5. It divides into tibial nerve and common peroneal nerve

Q2. About the lungs it is true that

1. The right lung has two lobes the upper and lower
2. The pulmonary artery carries oxygenated blood back to the heart.
3. **The lungs are innervated by the vagus nerve and symphathetic trunk.**
4. The left lung has three lobes

Q3. The muscles and accessory muscles of respiration include the following .which one is

odd?

1. **Trapezius**
2. The diaphragm
3. Serratus anterior
4. Sternocleidomastoid

Q4.which of the following statements is not true about the flexor compartments of the

forearm.

1. **The superficial flexors arise from the common tendon attached to the lateral epicondyle of humerus**
2. Inflammation of the common flexor tendon gives rise to medial epicondylitis
3. The deep flexors may arise from the forearm bones and interrosseous membrane
4. The vessels and nerves lie between the superficial and deep muscle layers

Q5. The following ligaments stabilize the sacroiliac joint except?

1. Sacrospinous
2. Sacrotuberous
3. **Psoas major**
4. Illio lumbar

Q6. Which of the following statements is false about the pelvic floor?

1. It is called the pelvic diaphragm
2. It is formed by the levator ani and coccygeus muscle
3. **It is pierced by two structures only the urethra and the rectum**
4. Muscle is fused to the perineal body

Q7. A patient has altered sensation on the sole of the foot and has weakness in the ability to

planter flex at the ankle. The nerve that is likely to have been lessioned is?

1. Common peroneal nerve
2. **Tibial**
3. Sural
4. Saphenous

Q8. A boy playing football has suffered trauma to the medial meniscus from a blow to the

lateral aspect of the knee and the knee has become unstable. What other structure is most

likely to be injured.

1. Deltod ligament
2. Lateral meniscus
3. **Anterior cruciate ligament**
4. Patellar ligament

Q9. S1 nerve root irritation will result to pain located along the

1. Anterior aspect of the thigh
2. Medial aspect of the thigh
3. Anteromedial aspect of the leg
4. **Lateral side of the foot**

Q10. After radical mesectomy there was injury to the long thoracic nerve. The integrity of the

nerve can be tested at the bedside by asking the patent to?

1. Shrug the shoulders
2. **Raise the arm above the head on the affected side**
3. Touch the opposite shoulder
4. Lift a heavy object from the ground

Q11. Which nerve is likely to be injured in fracture of the upper end of radius

1. median
2. Ulnar
3. Radial
4. **Posterior interrosseous**

Q12. The following are types of synovial joint. choose the incorrect pair.

1. wrist : ellipsoid
2. calcaneo-cuboid: saddle
3. **atlanto- axial: ellipsoid**
4. temporo-mandiblar: condylar

Q13. All the following nerves are affected in erbs palsy. Except.?

1. nerve to subclavius
2. axillary
3. **subscapular**
4. suprascapular

Q14. Choose the incorrect statement about the cranial nerves

1. **abducent has the longest intracranial course**
2. trochlear is the slimmest
3. olfactory is the shortest
4. cranial nerves with parasymphathetic flow are 3,7,9,10

Q15. In walking the hip bone of the suspended leg is raised by which of the following

muscles acting on the supported side of the body.

1. **Obturator Externus**
2. Gluteus Maximus
3. Gluteus Mediums
4. Gluteus Minimums

Q16. The following muscles insert at the proximal phalanx of the thumb. Which one is odd?

1. Abductor pollicise braves
2. First palmer interosseous
3. Adductor pollicis
4. **Abductor pollicis longus**

Q17. injury to the radial nerve at the wrist leads to?

1. Wrist drop
2. **Sensory loss on adjacent sides of 3 and 4 fingers**
3. Paralysis of adductor pollicis
4. Loss of supination in extended position.

Q18. The following muscles form the floor of the femoral triangle. Which one is odd?

1. Pectineus
2. Psoas major
3. Illiacus
4. **Adductor brevis**

Q19. The stability of the ankle joint is maintained by all the following except?

1. **Planter calcaneo navicular ligament**
2. Deltoid ligament
3. Lateral ligament
4. Shape of the superior talar articular surface

Q20. The most common nerve dermaged in supracondylar fracture is

1. Median
2. Ulnar
3. Anterior interrosseous
4. **Radial**

Q21. Development occurs in a specific order depending with the nervous system.

identify the correct order from the following.

1. **Cephalo-caudal, distal-proximal, fine –gross**
2. Caudal – cephalo, proximal-distal, gross-fine
3. Cephalo-caudal, proximal-distal, gross-fine
4. Caudal-cephalo, distal-proximal, fine - gross.

Q22. Which of the following tissues is not of mesodermal origin?

1. Smooth muscle
2. Spleen
3. Gonads and their ducts
4. **Enamel of the teeth**

Q23. Which of the following are only found in the dermis layers of the skin?

1. A top layer of flattened dead cells
2. Sensory receptors
3. Adipose tissue
4. **Sebaceous glands**

Q24. A fascicle is a……..

1. Muscle fibre
2. **Bundle of muscles fibres enclosed by a connective tissue sheath**
3. Bundle of myofibrils
4. Group of myofilaments

Q25. The arrangement of muscle fibres in which fibres are arranged obliquely to central longitudinal tendon is called ?

1. Circular
2. Longitudinal
3. **Pennate**
4. Parrarel

Q26.Which of the following characteristics does not fit the radius bone.

1. It is a long bone
2. It has a styloid procees
3. **The proximal end bears the olecranon process**
4. The distal end is broad and flat anteriorly

Q27.Which of the following does not fit the characteristics of neurons?

1. Extreme longevity
2. Amitotic
3. **Anaerobic**
4. High metabolic rate

Q28.The articulation between the distal heads of fibula and tibia is classified as?

1. **Synarthrodial joint**
2. Diarthrodial joint
3. Amphiarthrodial joint
4. Gomphosis

Q29. A compressive pressure on a previously uninjured c7 nerve root will generally cause a fatiquable weakness. In which of the following muscles

1. Triceps and finger extensors
2. Triceps and finger flexors
3. Triceps and wrist extensors
4. **Triceps and wrist flexors**

**Q30. A** patient who is a soccer player came to you with complains of anterior hip pain made worse with kicking the ball. What structures could be the source of his pain?

1. **Adductors and hip flexors**
2. Gluteus maximus and rectus femoris
3. Gluteus medius and hip flexors
4. Semimembranossus and hip flexors

Q31. A patient complains of left posterior knee pain that is made worse with bending his knee

and at walking. What structures could be the cause of his complains.

1. Solleus and gastoc muscles
2. Harmstring and gastroc
3. Piriformis nad anterior tibialis muscle
4. **Quards and harmstrings**

Q32. If you suspect that a patient with an l2 nerve root compression is suffering from motor

Weakness, which muscles would you test

1. Gluteus minimus
2. Piriformis
3. **Psoas major**
4. Quardriceps

**Q33.**  A 47 year old female report of a three year history of numbness and tingling in the

Palmer side of the digits 1 to 3 when turning the knob to open the door. This

par aesthesia is noted to increase at night . What is the most likely site of this patients

pheripheral entrapment

1. **Median nerve, pronator teres**
2. Radial nerve, arcade of frohse
3. Radial nerve, ligament of strathus
4. Ulnar nerve , cubital turnel

Q34. Which of the following statements regarding the elbow capsule are most correct?

1. It includes two joints
2. It is unaffected by prolonged immobilisation of the joint
3. The capsule is stronger anteriorly and posterior than laterally
4. **The capsule does not provide significant stability to the elbow complex**

**Q35.** Which segment of the skull is the foramen magnum located ?

1. Frontal
2. Parietal
3. **Occipital**
4. temporal

Q36. Regarding the clavicle bone. The following are correct except.

1. **It is an example of short bone**
2. It is the first bone to ossify in the fetal life
3. It ossify in membrane
4. It has no medullary cavity

Q37. Paralysis of serratus anterior muscle causes

1. **Winging of the scapula**
2. Claw hand
3. Ape hand
4. Wrist drop

Q38. Muscles that rotate the scapula downward are attached to

1. Ventral lip of the medial border of scapula
2. **Dorsal lip of the medial border of scapula**
3. Upper lip of the crest of the spine
4. Lower lip of the crest of the spine

Q39. Cubital fossa is bounded by

1. Pronator quadrates
2. **Brachioradialis**
3. Coracobrachialis
4. Biceps tendon

Q40. Muscle s innervated by the median nerve include the following except

1. Pronator teres
2. Pronator quadrates
3. Flexor pollicis longus
4. **Adductor pollicis**

**Exercise physiology (20 items)**

1. The trigger to initiate the contractile process in skeletal muscle is:

1. Potassium binding to myosin
2. Calcium binding to tropomyosin
3. **Calcium binding to troponin**
4. ATP binding to the myosin cross bridges

2. Which of the following statements is correct about fast twitch fibres?

1. They have a relatively large number of mitochondria and low ATPase activity
2. They have a relatively small number of mitochondria and low ATPase activity
3. **They have a relatively small number of mitochondria and high ATPase activity**
4. They have a relatively large number of mitochondria and high ATPase activity

3. Which of the following statements represents the true characteristics of type I muscle?

Fibres:

1. White, glycolytic, slow, contracting
2. White, oxidative, slow contracting
3. Red, glycolytic, slow contracting
4. **Red, oxidative, slow contracting**

4. The initial energy source for very high force contractions lasting 1-2 seconds is from:

1. Glycolysis
2. Creatine phosphorylation
3. Phosphocreatine stores
4. **ATP stores**

5. The most rapid method to resynthesize ATP during exercise is through

1. Glycolysis
2. **Phosphocreatine breakdown**
3. Krebs cycle
4. Glycogenolysis

6. In general the higher the intensity of exercise, the greater the proportional

contribution of ?

1. Aerobic energy production
2. **Anaerobic energy production**
3. Fat oxidation
4. Krebs cycle to the production of ATP

7. If the mean rate of oxygen consumption of a male athlete during a training session is

2litres/min, then his rate of energy expenditure is approximately:

1. **400 kj/min**
2. 200 kj/min
3. 80 kj/min
4. 40 kj/min

8. How much energy expressed in K/CAL is the work in question 15 equal to:

1. **10 kcal**
2. 20 kcal
3. 40 kcal
4. 0.1kcal

9. Which of the following exercises is predominantly anaerobic

1. Jogging
2. Swimming
3. Stair climbing
4. **Weight lifting**

10. The average intensity of exercise during professional soccer play is about?

1. 25 % vo2 max
2. 50 % vo2 max
3. **75 % vo2 max**
4. 90 % vo2 max

11.During exercise skeletal muscle blood flow increases 15 to 25 times the resting

value . This is mainly due to:

1. Increased arterial blood pressure
2. Increased secretion of catecholamines
3. **Local metabolic factors**

12.According to the sliding filament mechanism of muscle contraction, during

Contraction

1. The thick filaments stay the same size but thin filaments shorten
2. **The sarcomeres shorten**
3. The thin filaments stay the same size but the thick filaments shorten
4. Both thick and thin filaments shorten

13.Which of the following components of fitness is defined as the bodys ability to sustain

prolonged exercise

1. Muscle endurance
2. Body composition
3. **Cardiorespiratory endurance**
4. Muscle strength

14.It is correct that during the process of excitation-contraction coupling

1. Acetyl choline binds to muscarinic receptors
2. The transverse tubules release calcium ions in response to deporalization of the cell through an unknown mechanism
3. Cross bridges form when ATP binds to myosin
4. **Release of calcium ions causes the binding sites on the thin filaments to be uncovered**

15.The contraction elicited by a single brief stimulus is referred to as

1. Wave summation
2. **A twitch**
3. Multiple motor unit summation
4. Fused tetanus

16.The muscle protein, which covers the active sites on the actin filaments at rest is:

1. Actin
2. Myosin
3. **Tropomyosin**
4. Troponin

17. The following changes are likely to occur during acclimatization to high attitudes.

Which one is odd?

1. Accelerated erythropoiesis
2. Increased hemoglobin concentration
3. Increased rate of pulmonary ventilation
4. **Respiratory acidosis**

18. Which of the following statements concerning the structure of muscle tissue is

correct?

1. Skeletal muscle has the same structure as cardiac muscle
2. Smooth muscle cells have no striations as they lack myosin filaments
3. Smooth muscle has a system of T-tubules
4. **The myofibrils of skeletal muscle are surrounded by the sarcoplasmic reticulum**

19. The maximum power that can be developed by a skeletal muscle :

1. Is independent of the initial length of the muscle
2. Occurs with an isometric contraction
3. **Occurs when the muscle is moving a load at about 1/3 of its maximum rate of shortening**
4. Occurs when the muscle is shortening at its maximum rate

20. Which of the following statements about endurance training is true?

1. It increases the muscles breakdown phosphocreatine
2. **It increases the muscles burn fat and carbohydrate**
3. It increases the muscles capacity to contract faster
4. It increases the muscles Generate energy anaerobically

Q1. A physiotherapist is performing postural stabilization exercises with a patient

following surgery to the lower back. What type of skeletal muscles is he working on?

1. **I**
2. III
3. II
4. 1V

Q2.What type of exercise intensity does the muscle in Q (1a) above respond best to?

1. High intensity low duration
2. High intensity long duration
3. Low intensity short duration
4. **Low intensity long duration**

How many METS does it require for a person to be awake and sitting?

1. **One**
2. Two
3. Five
4. Ten

Q13. A physiotherapist is working with a patient on an endurance training programme and is monitoring the patients response to exercise. At initiation of the session the patients blood pressure was 134/86 mmhg and the resting heart rate was 64 bpm. After 15 minutes of activity the patient’s blood pressure is 115/65 mmhg and his heart rate is 112 bpm. What is the most appropriate action for the physiotherapist?

1. Increase the intensity to 80 % of heart rate maximum
2. Continue exercising
3. Begin a five minute cool down
4. **Stop exercising immediately**

Q14. The patient is 42 yr old male who is medically cleared to begin an aerobic exercise Program. His Bp is $\frac{135}{84}$mmhg, respiration rate 16RPM and his resting heartrate72Bpm. you are asked to determine a training heart rate based on (Karvonens) formula for a normal healthy adult. Which choice represents a training heart rate for this patient?

**a) 84 to135 bpm**

b) 107 to 142 bpm

c) 136 to 157 bpm

d) 178 to 220 bpm

**Movement science (40 items)**

|  |
| --- |
| 1.The branch of physics dealing with the study of forces and the motion produced by their actions in human body is reffered to as |

|  |  |
| --- | --- |
| **A.** | Mechanics |

|  |  |
| --- | --- |
| **B.** | **Biomechanics** |

|  |  |
| --- | --- |
| **C.** | Statics |

|  |  |
| --- | --- |
| **D.** | Kinetics |

|  |
| --- |
| 2. Focuses on the manner in which bones move in space without regard to the movement of joint surfaces such as shoulder flexion/extension. |

|  |  |
| --- | --- |
| **A.** | **Osteokinematics** |

|  |  |
| --- | --- |
| **B.** | Arthrokinematics |

|  |  |
| --- | --- |
| **C.** | Kinetics |

|  |  |
| --- | --- |
| **D.** | biomechanics |
|  |  |

3. an object is held in circular pathway by

1. centripetal force
2. **centrifugal force**
3. speed
4. motion

4. levers that have their pivot at the center are reffered to as

1. 3rd class levers
2. 2nd class levers
3. **1st class levers**
4. 4th class

5. cartilaginous joints are also called

1. ampiathrosis
2. synarthrosis
3. diathrosis
4. gomphosis

6. a rapid series of twitches is called

1. twitch
2. **treppe**
3. titanic
4. contraction

7. when muscles perfom a lengthening contraction it is reffered to as

1. **eccentric**
2. static
3. concentric
4. isotonic

8. a muscle whose origin is close to the joint of movement is termed as

1. spurt
2. **shunt**
3. spin
4. synergist

9. when two forces are applied at the same point on an object they are called

1. force couple
2. parrarel forces
3. **concurrent forces**
4. kinetics

10. of anatomical planes

1. **sagittal is anteroposterior**
2. coronal is median
3. transverse is lateral
4. frontal is coronal

11. Which of the following is the art of motion produced by various forces

1. **kinematics**
2. kinetics
3. kinesiology
4. bimechanics

12. Which of the following statements best describes transilatory movement

1. it is stationary
2. may be curvilinear
3. is also rectilinear
4. all the above

13. When a muscle contracts it tends to bring its origin and insertion together. This is the law

of

1. detortion
2. **approximation**
3. translation
4. rotation

14. Which of the following statements is not correct about the “ankle strategy”

1. Also known as the “inverted pendulum”
2. **Effective for controlling large perturbations when standing**
3. Requires intact joint range and muscle strength around the ankle
4. Dorsiflexors and planter flexors about the ankle exert their influence through “reverse action”

15. Which of the following statements is true about the “hip strategy”

1. **Effective for controlling perturbations greater than small sway**
2. Comes into play when disturbance is slowly applied
3. Involves large muscles of the knee and hip
4. Mediolateral forces activate muscle synergies in proximal to distal order

16. About the effects of ageing process on the postural control systems of healthy people.

Which one is odd ?

1. Body sway increases with age
2. **Function of the sensory system declines**
3. Vestibular system functions declines
4. Both nerve conduction and central processing in the brain stem slow with age

17. Which of the following statements is true about the development of an “S” shaped spine

across the life span

1. At birth the newborn infant spine is characterized by two concave forward facing curves in the thoracic and pelvic regions
2. **At about three to four months the convex forward cervical curve develops**
3. The convex forward lumbar curve begins to form as the baby sits up
4. Foot arches and spinal curves approach adult form by the age of three years

18. Which of the following statements is correct about stability in human movement

1. **Stability increases with a low cog and large base of support**
2. Stability increases with high cog and large base of support
3. Stability increase with low cog and small base of support
4. Stability increases with high cog and small base of support

19. During one walking gait cycle, each extrimity passes through:

1. Single stance phase and double swing phase
2. Double stance phase and and single swing phase
3. **Single stance phase and single swing phase**
4. None of the above is correct

20. Which of the following statements represents the correct order of events that occur during “stance phase “ in a normal gait cycle

1. **Heel strike, footflat, midstance, heel off, and toe off.**
2. Heel off, toe off,heal strike,foot flat, and midstance
3. Heel strike,heel off, midstance,toe off, foot flat.
4. Foot flat, heel off,midstance,toe off, heel strike

21. Which of the following statements are true about the “swing phase” in walking gait cycle

1. It comprises 20 % of the gait cycle
2. During midswing the swinging leg continues forwards towards knee extension
3. During deceleration the swinging leg is directly beneath the body
4. **During acceleration the toe of the stance leg leaves the ground and begins to swing forwards**

22.Which of the following problems in stance phase are likely to be as a result of weak

dorsiflexors

1. The inability to extend the knee for weight bearing
2. The shifting of weight
3. Lift the pelvis
4. Thrust the base backwards
5. **The foot to slap down after heel to strike**

23. Which of the following statements best describes pes cavus

1. Ligament laxity
2. A supinated foot
3. **An abnomally high arch**
4. Dropping of the talar head

24.In the normal gait cycles what percentages is the “stance phase” and the “swing phase”

while walking

1. **40 % and 60 %**
2. 50 % and 50 %
3. 60 % and 40 %
4. 30 % and 70 %

25. Which of the following is likely to result to problems in stance phase

1. Hemiplegic gait
2. Ataxic gait
3. **Antalgic gait**
4. Stepping gait

26.Which of the following is true concerning movement of the shoulder complex

1. The sternoclavicular joint is the only bony attachment of the shoulder complex to the axial skeleton
2. During arm elevation for every 15 0 of movement 10 0 comes from the glenohumeral joint and 5 0 from upward rotation of the scapular
3. **Both Aand B**
4. None of the above

27. A patient with rotator cuff syndrome may experience the following signs. Which one

is odd ?

1. Frozen shoulder
2. Shoulder pain
3. Shoulder weakness
4. Shoulder muscle wasting

28. A physiotherapist asks a patient to hold a paper with a lateral pinch, which is known as

froments sign, what is the testing for

1. **Ulnar nerve injury**
2. Median nerve injury
3. Radial nerve injury
4. Circumflex nerve injury

32. Which of the following is not a scoliosis curve pattern

1. Right thoracic curve
2. **Right thoracolumbar curve**
3. Left lumbar curve
4. Left thoracic curve

33. Kyphosis, which is known as hunch back is

1. The curvature of the vertebral column
2. “S” shaped side to side curvature
3. **The curvature of the upper spine**
4. It is also known as swayback

34. The horizontal plane transecting the body at the level of lower margin of the tenth rib is

known as

1. Oblique plane
2. Frontal plane
3. Cardinal plane
4. **Subcostal plane**

35.which of the following factors relate to dimensions and weights of body segments

1. Kinetics
2. Dynamics
3. Static
4. **Anthropometric**

36. In which of the following planes does the “cartwheel” movement occur

1. Diagonal
2. Horizontal
3. **Frontal**
4. Sagital

37. What type of muscle action does the resistance torque exceed the force

1. Concentric
2. Isometric
3. **Eccentric**
4. Dynametric

38. When a person standing at rest with the feet approximately eight inches apart changes his

base of support to two inches, what happens to the centre of gravity of the entire body

during this activity?

1. **It is raised**
2. It is halved
3. It is doubled
4. It is tripled

39. The normal function of fingers (2-5) involves prehension and a release phase while

holding or manipulating an object. the initial activity in the release phase involves

1. Relaxation of wrist fingers
2. Relaxation of long finger extensors
3. Forcefull contraction of finger flexors
4. **Relaxation of long finger flexors**

40. Which ligament is likely to be injured following excessive valgus force applied to the

knee joint?

1. **Medial collateral**
2. Lateral collateral
3. Anterior cruciate
4. Oblique popliteal

Q3. Which of the following functions of the foot is best represented at the end of stance

phase?

1. Mobile adapter
2. **Rigid lever**
3. Base of support
4. Shock absorber

Q4.Which of the following is an appropriate lower extremity closed chain activity?

1. **Step ups**
2. Straight leg raise
3. Heel strides
4. Knees to chest

Q5. The Barthel index assesses all the following except?

1. Grooming
2. Transferring
3. Stairs
4. **driving**

Which strategy is a girl walking on a straight line most likely to use in case of perturbations

or threats to balance

1. Ankle strategy
2. **Hip strategy**
3. Stepping strategy
4. Jumping strategy

Q9. All the following statements are true about the beginning of swing phase. Which one is

odd?

1. All movements should add up to zero
2. **There is linear deceleration**
3. There is linear acceleration
4. Forces on the foot should add up to zero

Foot arches and spinal curves approach adult form from the age of?

1. 6
2. **22**
3. 3
4. 14

Q11. The centre of gravity for a one year old child is located at around?

1. S2
2. **T12**
3. C7
4. L4

Q13. The following statements are true about muscle power. Which one is odd?

1. It is the rate at which work is done
2. The unit of work is watt (**w**)
3. It is the product of force and velocity
4. **It is the ability to resist fatigue**