

GAUTENG DEPARTMENT OF EDUCATION
SENIOR CERTIFICATE EXAMINATION

DANCE HG
(Second Paper: Anatomy and Health
Care)

POSSIBLE ANSWERS OCT / NOV 2006

SECTION A
ANATOMY

QUESTION 1

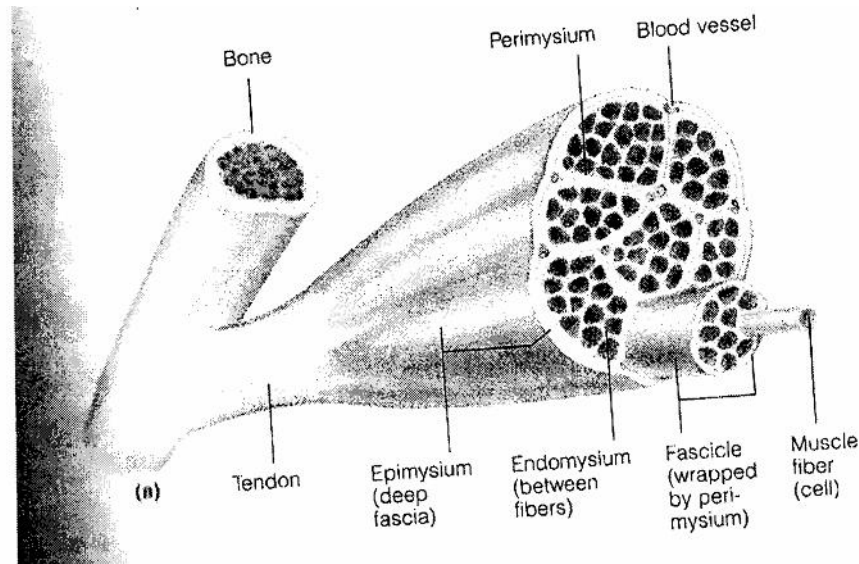
1.1 Explanation of terms

1.1.1 The point of attachment where movement occurs.

1.1.2 The main muscle to bring about a movement.

1.1.3 When the tendon of a muscle is broad and flat.

1.2 Labels



The learner should also include a sleeve of tissue around the bone labelled periosteum.

0,5x7=(3,5)

1.3 Isometric (0,5) when the muscle contracts but no movement occurs (0,5).
Isotonic (0,5) Eccentric (0,5), when the muscle contracts and lengthens
(0,5). Isotonic Concentric (0,5), when the muscle contracts and shortens
(0,5).

0,5x7=(3,5)

[10]

QUESTION 2

- 2.1 Flexion of the elbow joint. (0,5)
- 2.2 Origin: Long head (0,5) arises from scapula at upper rim of shoulder socket. (0,5) Shorter head (0,5) arises from the corocoid process (0,5).
Insertion: Tuberosity on the radius (0,5). 0,5x5=(2,5)
- 2.3 Trapezius (0,5) and Latissimus dorsi (0,5) 0,5x2=(1)
- 2.4 Trapezius - Origin: Base of skull (0,5) and spines of vertebrae to T12 (0,5)
Insertion: Upper fibres pass down and laterally into clavicle (0,5). Middle fibres pass horizontally into the acromion process of scapula (0,5). Lower fibres pass upwards and laterally into the spine of the scapula (0,5). 0,5x5=(2,5)

OR

- Latissimus dorsi - Origin: Lower six thoracic vertebrae (0,5), lumbar vertebrae (0,5) and iliac crest (0,5).
Insertion: Fibres pass upwards and outwards, converge, twist to insert into the humerus (0,5). Some slips of muscle attach to the inferior angle of the scapula (0,5). 0,5x5=(2,5)
- 2.5 Quadriceps. (0,5)
- 2.6 Rectus femoris (0,5) - Origin: Straight head from the anterior hip bone (0,5) and second head from the hip joint at the side (0,5). 0,5x3=(1,5)
- 2.7 Rectus abdominus (0,5), iliacus (0,5) and psoas (0,5). 0,5x3=(1,5)
[10]

QUESTION 3

- 3.1 The deltoid (0,5) will be the agonist (0,5) to abduct the arm, and will be synergised (0,5) by the biceps (0,5), both contract concentrically (0,5). The trapezius (0,5) and latissimus dorsi (0,5) will be contracting isometrically (0,5) to fixate the shoulder girdle (0,5). Once the arm is above the head the deltoid and biceps contract isometrically (0,5) to maintain the position. The correct alignment of the pelvic girdle in relation to the shoulder girdle (0,5) is maintained by the interaction between the rectus abdominus (0,5) and erector spinae (0,5). The correct tilt of the pelvis is maintained (0,5) by the relationship between the gluteal (0,5) muscles and hamstrings (0,5) posteriorly and the rectus abdominus (0,5) and ilipsoas (0,5) anteriorly. To side bend, the left internal (0,5) and external obliques (0,5) will contract concentrically (0,5). The transversus (0,5) will also be contracting concentrically (0,5) to keep the stomach flat (0,5). Any 12 facts 0,5x12=(6)

- 3.2 Agonists for hip flexion (0,5) will be the iliopsoas (0,5) and the rectus femoris (0,5), synergised (0,5) by the adductors (0,5), sartorius (0,5) and tensor fascia latae (0,5), which will all be contracting concentrically (0,5). Knee extension is maintained by the isometric contraction (0,5) of the quadriceps (0,5). At full extension, the agonists for plantar flexion (0,5) will be the soleus (0,5) and the gastrocnemius (0,5) which will be contracting concentrically (0,5). To increase the arch of the foot, the intrinsic muscles (0,5) of the foot will be contracting concentrically (0,5). Any 8 facts. 0,5x8=(4)

[10]

TOTAL SECTION A: 30

SECTION B HEALTH CARE

QUESTION 4

- 4.1 Causes for and indications of stress fractures.

Any TWELVE of the following (half a mark each):

- They are common injuries dancers face
- They occur as a result of repeated local stress on one area of the bone and come on gradually
- If a bone is subjected to recurrent forces or stresses than are different to normal everyday stresses
- Or if these stresses are everyday and excessive
- The area of bone that is been stressed will respond initially by thickening
- This is common on the dancer's 2nd metatarsal and can clearly be seen on x-rays
- When the dancer retires, this thickening will gradually disappear
- If the stress is more intensive, small cracks will appear
- If not treated correctly cracking can increase and worsen until
- The tibia takes on this pressure and also begins to fracture
- The pain will be an indication of how severe this fracture is
- Eventually the pain will be present at all times
- The longer a dancer continues to dance with a stress fracture, the longer the rehabilitation time will be
- If the fracture is ignored then it could affect the entire bone 0,5x12=(6)

- 4.2 Treatment of stress fractures

- The history and examination should make this diagnosis quite clear
- Persistent pain on activity which is well localised to one area
- When examined the area of pain will appear warm and tender to the touch
- Treatment should not be delayed as soon as stress fracture is detected either by knowledge or x-ray
- Rest is the most important form of treatment in this condition
- It is the only way the fracture can heal
- Elevation

- Immobilization of the injured part
- Non-weight bearing exercise: Pilates, swimming, etc.
- Physiotherapy, ultra sound, manipulation

0,5x8=(4)
[10]

QUESTION 5

5.1 The purpose of stretching.

Any EIGHT of the following (each fact counts half a mark):

- Improves performance levels
- An elastic muscle is a strong muscle
- Increases the range of motion and movement
- Muscle can lengthen eccentrically much farther
- Reduces muscle tension and acts as transition to a resting state after exercise
- Prevents injury
- Improves body awareness
- Promotes circulation and effective in removing waste products
- improves reaction time of motion
- And is highly effective in creating aesthetic beauty and line.
- Stretching enables the dancer to perform difficult steps and routines with ease.
- This eradicates the stiff and agonising look of the dance movement.
- All movement flows when the body is flexible,
- And there is continuity without jerky, hindering movements.

0,5x8=(4)

5.2 Methods to achieve strength and endurance.

Any EIGHT of the following (each fact counts half a mark):

- Muscles are strengthened by adding a stimulus such as weight
- They are strengthened in the presence of resistance
- This can be an actual weight
- Or the use of gravity and the body
- Or water
- The muscle adapts to the demands made on it and is strengthened
- The more it is repeated the stronger it becomes
- The faster
- The longer
- The heart and lungs are muscles
- As they become stronger and fitter
- So you become fitter and endurance increases
- If a dancer is not fit and physically strong then it will be very difficult for the dancer to deliver a controlled performance
- It is essential that a dancer incorporate some strengthening exercises into their regime
- These include weight training
- And aerobic activity lasting 20 min or more

0,5x8=(4)

5.3 Hypotrophy

Any FOUR of the following (each fact counts half a mark):

- Also referred to as muscle wasting
- Or muscle atrophying
- The muscles lose tonus
- Due to immobilisation and no form of concentric muscle contraction
- This is most notable in a patient that has been in a cast.

0,5x4=(2)
[10]

QUESTION 66.1 Types of carbohydrates, attributes, examples

Any EIGHT of the following (each fact counts half a mark):

- There are two types of carbohydrates, simple and complex.
- Carbohydrates are considered the efficient form of fuel for muscle.
- And therefore a major source of energy.
- Simple carbohydrates are absorbed very quickly, giving a short burst of energy that only lasts a short while before dipping the blood sugar level again.
- Best form of carbohydrates found in wholemeal bread, pasta, cereals and nuts.
- A dancer should not think to cut out fat altogether from their diets as it is
- The most important source of stored energy.
- To lose weight, avoid fatty and processed foods, pastries, crisps, fast-food
- To lose weight, eat fruits, vegetables, wholegrain starches.
- Protein contributes to growth, maintenance and repair of human tissue (muscle).
- If the body lacks protein, the body will start to break down its own muscle tissue.
- This obviously leads to weakness.
- Decrease meat intake and rather eat fish or chicken.
- Avoid sugary and fried foods.
- Limit salt and caffeine.
- Eat when relaxed and hungry.
- Drink more than enough water to keep the body fully hydrated.
- And remember: your intake of food should not exceed your output of energy.

0,5x8=(4)

6.2 Pre-performance intake

Any EIGHT of the following (each fact counts half a mark)

- Eat properly and correctly
- The body needs every food group to maintain normal healthy functioning
- Eat enough carbohydrates
- Don't deny yourself anything that is healthy and has high nutritional value

- Don't put yourself on a starvation dieting regime
- Load the muscles with the use of resistance
- Resistance in the form of gravity, repetition, speed, levels or loading with weights like dumbbells
- Going to the gym and doing the circuit or free weights with repetition will tone and cut
- Work correctly while dancing, use repetition, strength and gravity
- Lift and work with long movements and broad arcs lifting off of the hips
- Work to build up a sweat so that your heart and lungs are challenged
- This is aerobic exercise for longer than 20 min

0,5x8=(4)

6.3 Socially undesirable habits to avoid

Any FOUR of the following (each fact counts half a mark)

- excessive alcoholic drinking
- food binging
- smoking
- drug use
- irritability and mood swings

0,5x4=(2)
[10]**TOTAL SECTION B: [30]****TOTAL: 60**