POSSIBLE ANSWERS FOR :

GDE GRADE 12 DANCE SG PAPER 2

SECTION A : ANATOMY

QUESTION 1

1.1.1 Aponeurosis (0.5 x 2 = 1)
1.1.2 Endomysium (0.5 x 2 = 1)
1.1.3 Isometric (0.5 x 2 = 1)
1.1.4 Synergists (0.5 x 2 = 1)

1.2 An electrical message is sent from the brain (0.5) to tell the muscle to contract. When it arrives at the muscle, a chemical reaction (0.5) takes place and the contractile proteins actin (0.5) and myosin (0.5) are stimulated to contract resulting in a mechanical reaction (0.5). Heat is then released (0.5). Any 5 facts. (0.5 x 5 = 2.5)

1.3 By constant (0.5), accurate (0.5) repetition (0.5). (0.5 x 3 = 1.5)

[8]

QUESTION 2

2.1 Deltoid (1) Insertion: Lateral (0.5) surface of the humerus (0.5)

or

Trapezius (0.5) Insertion: Upper fibres – clavicle (0.5)
Middle fibres – acromion process of scapula (0.5)
Lower fibres – spine of scapula (0.50
(0.5 x 4 = 2)

2.2 Gluteus maximus (0.5), gluteus medius (0.5), gluteus minimus (0.5), semimembranosus (0.5), semitendinosus (0.5) and biceps femoris (0.5). (0.5 x 6 = 3)

2.3 Soleus (0.5): Origin: 2 heads from tibia and fibula (0.5)
Insertion: Achilles tendon (0.5)
Gastrocnemius (0.5): Origin: 2 heads from medial and lateral condyles of femur (0.5)
Insertion: Achilles tendon (0.5) (0.5 x 6 = 3)

[8]

QUESTION 3

3.1 Trapezius (0.5) and latissimus dorsi (0.5) will be contracting to stabilise the shoulder girdle (0.5) as the deltoid (0.5) and pectoralis major (0.5) concentrically contract to raise the arms (0.5). Biceps (0.5) will synergise (0.5) this movement. The muscles on the anterior of the forearm (0.5) will contract concentrically to flex the wrists (0.5). Any 4 facts. (0.5 x 4 = 2)

3.2 The posterior fibres of the deltoid (0.5) will contract concentrically along with the trapezius (0.5) to open the arms to the side (0.5). On lowering the deltoid muscle will be contracting eccentrically (0.5) to bring about a smooth movement (0.5). The latissimus dorsi (0.5) will adduct (0.5) the arms and keep the shoulder girdle down (0.5). Any 4 facts. (0.5 x 4 = 2)

3.3 Turnout is brought about and maintained by the gluteals (0.5), adductors (0.5) and the sartorius (0.5). Gravity (0.5) initiates the knee bend and the quadriceps (0.5) contract eccentrically (0.5) to oppose this and bring about a controlled movement. Hip, knee and ankle flexion is passive (0.5). The calf muscles will be contracting eccentrically (0.5), mainly to stabilise (0.5) and the tibialis anterior (0.5) as well. The intrinsic muscles (0.5) of the foot will be contracting concentrically to maintain the arch of the foot and to prevent rolling (0.5). Any 4 facts. (0.5 x 4 = 2)

[6]

TOTAL FOR SECTION A : 22 MARKS

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SECTION B

QUESTION 4

4.1

- This is an irritation of the tendon without significant
- Damage to the fibres.
- Usually caused by unaccustomed exertion eg.
- A large number of repetitions of a movement or movements.
- This involves one or more tendons repeatedly.
- The ankle tendons are often the sight for this type of overuse.
- The ankle and foot are extremely active in any dance technique.
- The most vulnerable tendon is that of the flexor hallucis longus.
- This tendon plantar flexes the big toe.
- And helps the dancer get up on point.
- It will be essential to seek treatment from a physiotherapist.
- Ultrasound and anti-inflammatory drugs for the pain.
- If the pain persists one should seek the advise of a orthopaedic surgeon.
- Most common treatment is usually rest so that the inflammation can subside.

4.2.1

- Injuries caused by faulty technique.
- Environmental causes of injury.

4.2.2

- Anatomical causes

- Most dancers are not anatomically perfect for dance.
- There are certain limiting and hindering constraints.
- These are muscle and tendon length and flexibility.
- Many problems are caused in an attempt to turn the feet out further than the capability of the anatomical structure.
- Pushing the feet, hips, knees and joints beyond their physical structure and capability of genetic shape can lead to serious damage and even disability.

- Lack of technical knowledge.

- Injuries are seen to occur during the learning period.

- Application of the steps and technique are not correctly applied and intelligently executed.
- Dancers having little dedication and interest tend to work
- Lazily and therefore dangerously.
- A tired body battles to perform any correctly placed technique.

- Non application of correct technique.

- Tired body and mind is unable to perform technique accurately.
- No interest and dedication, with lack of energy leads to faulty execution of steps and therefore injury.
- Bizarre choreography and unusual steps that demand and throw
- the body right off it's normal alignment and into another physical and technical realm.

- Bad teaching.

- Uninformed, uneducated teachers with little or no experience
- And guidance can teach many bad habits and faulty technique.
- Lazy, uninterested teacher who doesn't care and has little interest in the art form and work that has to be taught.
- Teachers that ignore the physical, individual limitations of each child and to treat them accordingly.
- Teachers that allow gross technical fault to continue.

THE ENVIRONMENTAL CAUSES OF INJURY.

- Temperature

- Rehearsal rooms that is either too hot or too cold.
- Pre-performance temperature has to be maintained.
- Good air supply to heart, lungs and muscles.

- The floor

- Descent floors are an essential tool for the dancer.
- It needs to be a well sprung, wooden floor.
- Concrete floors lead to foot, knee and lumbar injuries.
- Raked floors and stages present further complications as this throws the weight of the body into an unnatural position.

- Slippery dance floors pose obvious hazards and this should be avoided or a solution such as rosin should be provided.

QUESTION 5

5.1

- He/she has repeatedly loaded their muscles by means of resistance.
- In this case it would be heavy weights.
- His muscles adapt each time to be able to handle the increased workload.
- This makes the muscles stronger and stronger.
- This is actually an increase in the diameter of the muscle fibres.
- This is also known as hypertrophy.
- Steroids are often used in conjunction to speed up and increase this process beyond normal growth.

5.2 NB Mark with an open-ended approach.

- A dancer does not require large, bulky muscles.
- However he/she needs strong, powerful muscles that are
- Very well toned.
- Dancers create this state of muscle tone through continuous, repetitive movements done at
- Various speeds using only gravity as their form of resistance.
- Ie. Their own body weight is the form of resistance or loaded weight loaded on the muscles.

5.3

- Stretching will dramatically improve the performance as it
- Increases the range of motion in any specific movement.
- Enabling the dancer to achieve greater demands of the technique.
- Stretching improves the body's reaction time.
- It improves general body awareness.
- Allows the dancer to move more readily and with ease enhancing the grace and elegance.

QUESTION 6

6.1

- This is the word used to indicate chemical changes which take place in the body.
- The factors that influence the rate of metabolism are:
- Body size
- Age
- Sex
- Climate, including the degree of heat.
- Type of clothing worn.
- Nature of the activity.
- The state of nervous tension.

6.2

- Water is absolutely essential for all bodily processes.
- Water regulates the body temperature.
- As dancers we perspire more than the average person and need to replenish the lost water.
- This combats dehydration.
- Dehydration is a very serious condition and in extreme cases can lead to death.
- Therefore it is vitally important to replace the water throughout the day.
- Dehydration in mild cases can result in cramp, nausea
- Exhaustion and fatigue.
- A dancer obviously needs to avoid any of these conditions.