

## POSSIBLE ANSWERS FOR:

DANCE HG (Second Paper A) 609-1/2

MARKS: 60

NOTE: Each fact should count half a mark.

### SECTION A : ANATOMY

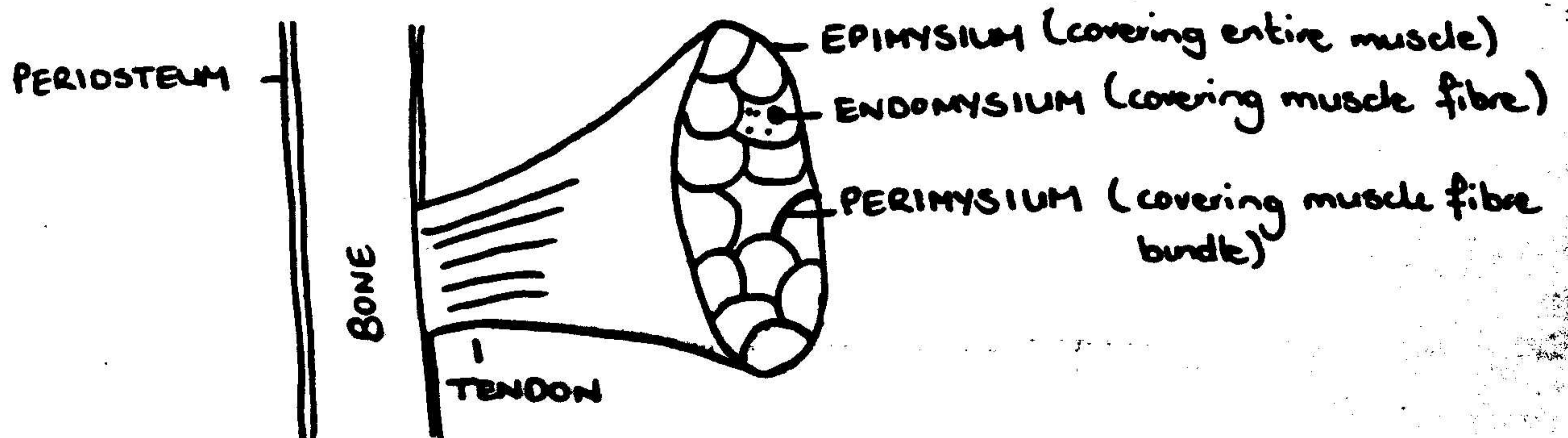
#### QUESTION 1

- |     |                      |               |
|-----|----------------------|---------------|
| 1.1 | Agonist              | (0.5 x 2 = 1) |
| 1.2 | Insertion            | (0.5 x 2 = 1) |
| 1.3 | Stabilisers/Fixators | (0.5 x 2 = 1) |
| 1.4 | Aponeurosis          | (0.5 x 2 = 1) |
| 1.5 | Synergist            | (0.5 x 2 = 1) |

[5]

#### QUESTION 2

2.1



(0.5 X 6 = 3)

- 2.2 An electrical message is sent from the brain to the muscle telling them when and how much to contract. When the message arrives at the muscle, a chemical reaction takes place and energy is released. This energy is converted to mechanical energy and movement takes place when the contractile proteins are activated. (0.5 x 4 = 2)

[5]

#### QUESTION 3

- 3.1 Trapezius, Latissimus dorsi, Biceps, Pectoralis major. (any 2 muscles which go over the shoulder joint.) (0.5 x 2 = 1)

3.2 Name: Rectus Abdominis (0.5)  
Origin: Pubic bone (0.5)  
Insertion: 5<sup>th</sup>(0.5), 6<sup>th</sup>(0.5) and 7<sup>th</sup> costal cartilages (0.5) and lower end of sternum (xiphoid process) (0.5) (0.5 x 6 = 3)

3.2 Hip: Flexion  
Knee: Flexion  
Ankle: Plantar flexion (0.5 x 3 = 1.5)

3.3 Knee joint: Name: Biceps femoris (0.5), semitendinosus (0.5), semimembranosus (0.5).  
Insertion: Biceps femoris inserts into the upper end of the fibula on the outside of the knee (0.5).  
Semitendinosus and semimembranosus insert into the medial upper tibia (0.5).

Hip joint: Name: Iliacus (0.5) and the psoas major (0.5).  
Insertion: Iliacus inserts into psoas major's tendon (0.5).  
Psoas major inserts into the lesser trochanter of the femur (0.5). (0.5 x 9 = 4.5)

[10]

#### QUESTION 4

4.1 The deltoid muscle contracts concentrically and is the agonist to bring the arms up sideways. This muscle is aided by the biceps muscle, which is the synergist. Stabilisation in the shoulder joint is maintained by the trapezius and latissimus dorsi muscles. Pectoralis major will contract concentrically to bring the arms to in line with the sternum (agonist), and will be aided by the biceps (synergist). The deltoid will contract eccentrically to oppose gravity as the arms move down to their original position. (any other muscles that are involved in this action.) (0.5 x 8 = 4)

4.2 Turnout throughout is maintained by the gluteals, sartorius and the adductors. Flexion at the hip is brought about by the iliopsoas and rectus femoris. Knee extension is brought about by the quadriceps, plantar flexion of the foot is brought about by the gastrocnemius and the soleus. The intrinsic muscles of the foot contract to increase the arch. (any other muscles involved in this action.) (0.5 x 12 = 6)

[10]

TOTAL OF SECTION A : 30

#### SECTION B : HEALTH CARE

#### QUESTION 5

5.1 Strength training refers to the muscles ability to contract in one maximal effort. It is anaerobic and therefore lactic acid is often left in the muscles. In order to strengthen a muscle the stimulus of resistance needs to be applied. The types of resistance are: Bodyweight/gravity, levels, speed, duration, repetition and external weights. Using resistance, the muscle has the ability to adapt to the demands made on it and is therefore trained or strengthened. Hypertrophy is the result, which is when the diameter of the muscle increases. The opposite of hypertrophy is hypotrophy where the muscle reduces in diameter and loses tonus. This is also known as atrophy. (0.5 x 12 = 6)

- 5.2 Answer must include 4 of the following: Resistance to fatigue, therefore longer concentration, therefore less prone to injuries.  
Increased lung capacity, therefore increased breath control, therefore increased dynamics in dance.  
Decrease in size, and weight.  
More efficient heart muscle.  
A general feeling of well-being.

(1 x 4 = 4)

- 5.3 Why it is important to stretch: Improves performance  
Increase range of motion  
Reduces muscle tension  
Prevents injury  
Improves body awareness  
Promotes circulation and removal of lactic acid  
Improves reaction time

The stretch reflex: is the body's automatic protection mechanism against muscle tears and ruptures resulting from being stretched beyond its normal range of motion. If a muscle "senses" the potential danger of overstretching small receptors in the muscle will automatically cause the fibres to contract in order to resist the stretch, hopefully preventing the injury.

Points to remember when stretching: Never hold your breath.  
Always be warm before you stretch.  
Never bounce.  
Concentrate on muscle group being stretched, relax the others.  
Stretch opposite muscles so that equilibrium is maintained.  
If not properly warm, always stretch with one leg in the bent position.  
Try and stretch a muscle by contracting the opposite muscle.

(any 12 facts)

(0.5 x 12 = 6)

[16]

#### QUESTION 6

- 6.1 Ice application, compression, elevation, and rest. (any 2) (0.5 x 2 = 1)
- 6.2 Decrease in cardio-respiratory fitness.  
Generalised muscle wasting.  
Increase in body weight.  
Psychological effects. (1 x 4 = 4)
- 6.3 By developing and maintaining good technique (1), muscle strength (1), joint mobility (1), cardio-respiratory fitness (1).  
Good nutrition (1)  
Orthopaedic assessment (1) (any 5) (1 x 5 = 5)

6.4 Yes, because it will:

build strength  
balance the muscle strength around the joint  
correct underlying problems  
realign if need be  
(any other logical answer)

(1 x 4 = 4)

[14]

**TOTAL OF SECTION B : 30**

**TOTAL OF PAPER : 60**