****

Name:

YEAR 11 ATAR PHYSICAL EDUCATION STUDIES

**Year 11 ATAR PES Assignment Biomechanics**

**Total Marks: 70 Due date:**

**Assessment type: Investigation**

**TASK: Spiral pass in Touch rugby Biomechanical analysis**

**Part A:**

**Anatomical involvement analysis of a skill: Spiral pass in Touch rugby**

Analyse the skill through the **preparation, action** and **follow through** stage. State the major muscles, bones, joints and types of joints involved, as well as the type of movement created.

**(40 marks)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Action | Major muscles involved | Major bones involved | Joints and joint type | Movement created |
| **Preparation**  (make reference to at least 2 actions) |  |  |  |  |
|  | 4 marks | 4 marks | 4 marks | 4 marks |
| **Action**  (make reference to at least 2 actions) |  |  |  |  |
|  | 4 marks | 4 marks | 4 marks | 4 marks |
| **Follow through**  (make reference to at least 1 action) |  |  |  |  |
|  | 2 marks | 2 marks | 2 marks | 2 marks |

**PART B: Spiral pass in Touch Rugby as biomechanical analysis (30 marks)**

Watch a video clip on a touch football/rugby player executing a **spiral pass.** Then analyse an elite player’s performance by explaining which of the following biomechanical concepts have an influence on the performance of a spiral pass in Touch rugby, **during each of the three phases of preparation, action/execution and follow through.** **Biomechanical concepts to consider in your analysis:**

1. Linear motion
   * speed
   * acceleration
   * velocity
2. Projectile motion
   * optimal projection
   * trajectory
   * release of projectiles (angle, velocity and height)
3. Angular motion
   * angular velocity
4. Principle of balance
   * centre of gravity
   * static balance
   * dynamic balance
5. Newton’s laws of motion
6. Coordination of linear motion
   * sequential versus simultaneous
   * summation of velocity

|  |  |
| --- | --- |
| Description | Marks |
| **Preparation phase**  Correct identification and biomechanical explanation of the movement involved during the preparation phase of the skill:  (4 Movements) | **16 marks**=  1 mark for each correct identification of a movement during this phase (max. 4 marks)  3 marks for each biomechanical explanation (max. 12 marks) |
| **Action phase**  Correct identification and biomechanical explanation of the movement involved during the action phase of the skill  (4 Movements) | **16 marks=**  1 mark for each correct identification of a movement during this phase (max. 4 marks)  3 marks for each biomechanical explanation (max. 12 marks) |
| **Follow through phase**  Correct identification and biomechanical explanation of the movement involved during the follow through phase of the skill  (2 Movements) | **8 marks=**  1 mark for each correct identification of a movement during this phase (max. 2 marks)  3 marks for each biomechanical explanation (max. 6 marks) |