

## **Sport and Exercise Science**

**Time Allowed – 1.5 hours**

**Answer TWO questions.**

**You may only answer one question from each sub-section  
(i.e. Psychology, Physiology and Biomechanics).**

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### **PSYCHOLOGY**

1. Explicitly drawing on your knowledge of the psychology of physical activity and exercise, what community activities would you design to encourage wide and maintained participation amongst residents in the community, and why?
2. If you worked at Sport Wales as a sport psychologist and were tasked with helping their international athletes secure Olympic medals, what psychological concepts would you target and why?

### **PHYSIOLOGY**

3. Should the banned substance list in sport be removed? Provide a balanced argument leading to your decision, from a variety of perspectives, including the sport sciences.
4. What advice, presented comprehensively, would you give someone who wants to improve their sprint speed?

### **BIOMECHANICS**

5. A high standard athlete is struggling to be the best they can be in their sport. They wish to improve their technique and physical attributes to help them get to the elite level. They have come to see a sports biomechanist (you) for assistance. For a sport of your choice (e.g. football, gymnastics, golf), highlight areas which you would target for improvement, and detail the biomechanical principles you would apply in order to assist the athlete.
6. Describe Newton's three laws of motion that explain the forces related to the movement of an object. Provide an example in a sport situation to illustrate the principles of Newton's laws of motion. Finally, explain how air resistance plays a role in downhill skiing, using the laws of motion.