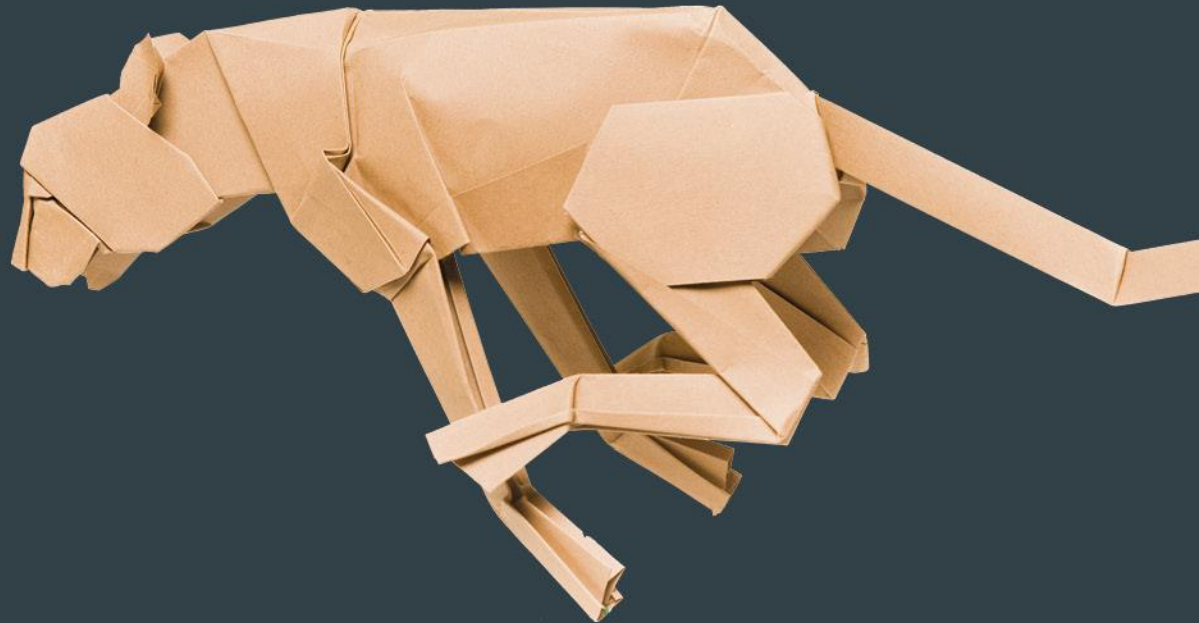


# A level Physical Education

9PE0/19P1 Feedback  
on Summer 2019:  
Components 1 and 2



# Structure of the Course





# Structure of the Course

Two examination papers:

- Component 1: 9PE0/01 Scientific Principles of Physical Education
- Component 2: 9PE0/02 Psychological and Social Principles of Physical Education

# Component 1





# Main Strengths in Performance

- Knowledge on some areas of the specification
- Timing of getting through all questions
- Length of responses



# Main Areas to Develop in Performance

- Structure answers for the number of marks
- Use of all the resources – e.g. *Inside Track*, Topic Guides
- Knowledge of new topic areas
- Legible writing
- Analysis in extended answers
- Making 8-mark questions very focused on the topic
- Learning of key terminology



# Applied Anatomy and Physiology Section: Question 1

- Candidates must learn definitions
- Most candidates knew the term agonist but were not specific enough with antagonist in saying it needed to oppose the agonist

(b) antagonist. (1)

an antagonist is the muscle that relaxes and  
lengthens, opposite to the agonist.

(Total for Question 1 = 2 marks)



# Definitions must be well learnt

(b) antagonist.

(1)

The antagonist is the muscle that opposes the agonist

(Total for Question 1 = 2 marks)





## Question 2

- If the question asks for an example, then one must be given
- A common error was to mistake the law or to provide examples from a different law



# Question 2 Example

2 Using a sporting example, summarise Newton's Law of Acceleration.

(2)

Newton's 2<sup>nd</sup> law of acceleration states that  
The <sup>+ distance</sup> speed in which an object travels is  
directly proportional to the force acting on it.  
For example, if a footballer kicked  
a ball with a ~~smaller~~ more force it  
will go further and faster.

(Total for Question 2 = 2 marks)



# Question 2 Example

**2** Using a sporting example, summarise Newton's Law of Acceleration.

(2)

The law of acceleration states that the velocity and direction of the object is proportional to the amount of force applied. For example, if a football is kicked softly then it won't travel very fast nor will it go a long distance. If more force is applied then the ball will travel faster and go a further distance.

**(Total for Question 2 = 2 marks)**



## Question 3

- Stages of the stretch shortening cycle generally well known
- Stages were sometimes named only – a short summary is not just naming stages
- They needed to be in the correct order and sometimes the order was incorrect which meant the marks were lost



# Question 3 Example

3 Summarise the stretch-shortening cycle. <sup>, etc</sup>

(3)

There's 3 stages!

- Eccentric: Muscle lengthens under contraction, <sup>spring</sup> ~~elastic~~ energy ~~stored~~ ~~in~~ ~~muscle~~ causing elastic energy to be stored in muscles.
- Amortisation: Stage in between eccentric and concentric, but shorter this stage, the faster the contraction.
- Concentric: Muscle shortens and elastic energy stored is used causing a powerful contraction.

(Total for Question 3 = 3 marks)



## Question 4

- Bullet points helped candidates ensure they made enough points
- Some errors in ventilation elements such as diaphragm and intercostals
- The respiratory system extends from the nasal cavity to the alveoli



# Question 5

- Definition of ‘partial pressure’ in 5a generally well known
- Some discussed amount of gas or concentration rather than *pressure* of the gas
- 5b also generally well known
- Answers sometimes referred to oxygen rather than air, or to concentration rather than pressure



# Question 5a Example

5 (a) Define the term partial pressure.

(1)

The pressure exerted by one gas  
in a mixture of gases.





# Question 5b Example 1

(b) Explain the role of pressure gradients in ventilation.

in the  
lungs  
(4)

During inspiration, ~~the~~ the Thoracic cavity increases causing a lower partial pressure in the lungs which causes air from atmosphere rushes in due to air differing from a high gradient (outside) to a low gradient (in the lungs).

During expiration partial pressure increases in the lungs causing a pressure gradient and air rushes to the lower partial pressure area in the atmosphere, forcing air out of the lungs.

(Total for Question 5 = 5 marks)



# Question 5b Example 2

(b) Explain the role of pressure gradients in ventilation.

(4)

- ~~During~~ Air always moves from high to low pressure
- During inspiration, the diaphragm contracts and flattens and ribs move up and out. This ~~it~~ increases thoracic volume and so decreases pressure in the lungs. ∴ Atmospheric pressure is greater than lung pressure so air is drawn in down a pressure gradient
- In expiration chest cavity volume decreases as the ribcage and diaphragm relaxes so pressure increases in the lungs above atmospheric so air is pushed out down a pressure gradient
- ~~Atmospheric pressure~~

(Total for Question 5 = 5 marks)



# Question 5b Example 3

(b) Explain the role of pressure gradients in ventilation.

During inspiration, the intercostal muscles contract <sup>pushing</sup> ~~pulling~~ the ribcage upwards and outwards. The diaphragm contracts and flattens. This increases the volume of the thoracic cavity and therefore creates an area of low pressure. A pressure gradient forms between the lower pressure inside the lungs and the higher atmospheric pressure so air rushes into the lungs down this pressure gradient. During expiration, the intercostal muscles relax pulling the ribcage downwards and inwards. The diaphragm relaxes and returns to its dome shape. This decreases the volume of the thoracic cavity and therefore increases the pressure inside the lungs. A pressure gradient forms between the higher pressure in the lungs and the lower atmospheric pressure so air is forced out of the lungs down the pressure gradient. (4)

(Total for Question 5 = 5 marks)



## Question 6

- This content was well known
- Common answers were mitochondrial density, myoglobin and capillary density
- For an 'explain' question, answers need to be linked: suitability for endurance activities



# Question 6 Example 1

- 6 Explain how **four** different characteristics of slow twitch muscle fibres (type 1) enable them to be better suited to endurance activities.

(4)

One characteristic is increased myoglobin stores. This helps with endurance because it means more oxygen can be stored in muscle which is used to remove lactate preventing <sup>early</sup> fatigue. Another is a high density of mitochondria which helps because the mitochondria are the site of aerobic respiration, having lots means more energy can be produced so muscle contraction can be sustained for longer since lots of ATP is produced. Another is a high capillary density, which helps because there is increased blood flow to muscles, so more  $O_2$  is delivered so the muscle can work aerobically which provides more energy for longer. Type 1 also have more oxidative enzymes so this helps use aerobic systems more efficiently, preventing lactate build up so muscle contractions continue for longer.

(Total for Question 6 = 4 marks)



# Question 6 Example 2

6 Explain how **four** different characteristics of slow twitch muscle fibres (type 1) enable them to be better suited to endurance activities.

(4)

Slow twitch fibres have a large number of capillaries meaning <sup>a greater amount of</sup> oxygen can be delivered to the muscle. They have a large number of mitochondria which enables them to ~~create~~ create a large amount of ATP. They have thin diameter walls meaning a shorter diffusion distance for oxygen and carbon dioxide. Large number of myoglobin to deliver oxygen from the blood to the muscle.

(Total for Question 6 = 4 marks)



# Question 7

- Candidates needed to understand the difference between structural and functional and link the two together
- The most common responses were hypertrophy increasing SV and capillarisation increasing gas exchange



# Question 7 Example 1

7 Explain ~~how~~ <sup>①</sup> three structural adaptations cause a corresponding functional response in the cardiovascular system as a result of endurance-based training.

(6)

Cardiac hypertrophy occurs as a result of endurance-based training, which means a higher volume of blood can be pumped around the body to carry <sup>more</sup> oxygen and remove more waste products. Capillarisation also occurs, which means more blood can reach required working muscles to carry more oxygen to them. Red Blood Cell count increases, also as a result of endurance-based training, and allows ~~us~~ more oxygen ~~to~~ which can be picked up at the alveoli to be ~~be~~ transported to the rest of the body.

(Total for Question 7 = 6 marks)

- ① Cardiac hypertrophy - More blood
- ~~More~~ Capillarisation - More blood
- Red Blood Cell count - More  $O_2$  carried





# Question 7 Example 2

\* ↑ capillaries - more efficient VR

7 Explain how three structural adaptations cause a corresponding functional response in the cardiovascular system as a result of endurance-based training.

(6)

Cardiac hypertrophy occurs which increases the size and strength of the heart. This then means that cardiac output and stroke volume increases as the heart is able to pump more blood out the heart per beat (left ventricle). There is also a decrease in resting heart rate as the heart has to work less hard to pump the same ~~am~~ volume of blood around the body. can also lead to Bradycardia which is a low heart rate below 60 BPM due to endurance training.

(red blood cells).  
Increase in haemoglobin within the blood which means more oxygen can be used and supplied to the muscles efficiently, useful for endurance events.

Increased capillaries in muscles and around avian which allows more  $O_2$  to be transported.

Venous return is also more efficient due to the increase in cardiac output.

(Total for Question 7 = 6 marks)



# Question 8

- Priming was not well known
- Candidates seemed to answer last year's question – perhaps their mock question
- They needed to apply knowledge to the specific question asked



# 8-mark questions 9, 10 and 11

- 8-mark answers should be tightly focused on the question asked
- Technical terminology is important
- Question 9: how the nervous and muscular system interact together was less well understood
- Question 10: candidates often did not focus on subsequent training
- Question 11: all aspects of the question needed to be covered for high scores



# Question 9 Example

rate of firing      rate of fibre recruitment

9 Examine the function of the neuromuscular system in a muscle contraction. (8)

A muscle contraction begins as <sup>an</sup> electrical impulse travels down the axon. The axon is covered in a myelin sheath, with nodes of Ranvier. The electrical impulse will jump over the nodes of <sup>Ranvier</sup>  ~~Ranvier~~ to increase the rate at which the impulse passes along the axon, this is an advantage of having the nodes of Ranvier. When the electrical impulse reaches the <sup>neuromuscular</sup>  ~~neuromuscular~~ junction, <sup>acetylcholine</sup>  ~~acetylcholine~~ is released across the synaptic cleft as a neurotransmitter. It binds to the receptor proteins on the post-synaptic membrane, depolarising the sarcolemma and generating an action potential. This causes calcium ions ( $Ca^{2+}$ ) to be released into the muscle fibres.  $Ca^{2+}$  travels to the myofibrils where it binds to the troponin on the actin, causing the tropomyosin to move, exposing the binding site. Now, the myosin heads can bind to the actin, forming an actin-myosin cross-bridge. The myosin then pulls the actin along its length to generate a muscle contraction. ATP is used as the energy for this, so the <sup>rate of</sup>  ~~rate of~~  <sup>fibre recruitment</sup>  ~~fibre recruitment~~ can happen to provide ATP, the <sup>rate of</sup>  ~~rate of~~  <sup>fibre recruitment</sup>  ~~fibre recruitment~~ is initiated. Also, the increased rate of firing <sup>increases</sup>  ~~increases~~ the rate at which the muscle fibres <sup>recruit</sup>  ~~recruit~~ the contraction speed. The all or none law suggests that all the recruited fibres will contract at the same force, so the <sup>neuromuscular</sup>  ~~neuromuscular~~ system can increase the amount of muscle fibres recruited to produce a bigger contraction.

(Total for Question 9 = 8 marks)



# Question 10 Example 1

10 Examine how athletes might adapt their subsequent training in order to cope with the effects of exercise induced muscle damage (EIMD) and delayed onset of muscle soreness (DOMS).

(8)

The athlete should ~~first~~ first make a judgement of when they can next train and at what intensity based on the level of pain, stiffness, soreness they are feeling. They may delay a training session or reduce the planned intensity in order to reduce the risk of injury from overtraining. To reduce the intensity, they may reduce the ~~time~~ duration or training zone to not cause any further fatigue and damage. They could vary their training method (cross train) to work different muscles. For example a marathon runner may have EIMD and DOMS in his quadriceps and hamstrings from continuous training, so the next day or two, he ~~can~~ could swim which has <sup>low</sup> impact on the muscles but it still benefits his submaximal aerobic fitness. Using a runner as an example again, they could use assisted training methods to reduce the stress on muscles and joints, for example using a bungee. The athlete may change their technique ~~and~~ if it is causing them damage and fatigue. A method of training like weights has many different variations of exercises the athlete can ~~adapt~~ adapt to if they are not comfortable with a certain technique.

(Total for Question 10 = 8 marks)



# Question 10 Example 2

10 Examine how athletes might adapt their subsequent training in order to cope with the effects of exercise induced muscle damage (EIMD) and delayed onset of muscle soreness (DOMS).

(8)

They would use principles of training, such as FITT. Frequency, if they were they would train so it they're experiencing EIMD or DOMS would train less frequently to allow an increased recovery between training sessions. Intensity of training may be reduced to a manageable intensity, still challenging the athlete, but intense enough to take into consideration their muscles. They may train for a less amount of time, shortening training sessions, in order to not over exert their muscles which could result in over training. They could also change the type of training to allow for rest periods in between efforts, allowing them to recover - reducing DOMS and EIMD.

(Total for Question 10 = 8 marks)



# Question 11 Example

11 Referring to the muscles used, examine the movements produced at the shoulder.  
Use sporting examples to illustrate your answer.

(8)

The shoulder joint is a ball and socket joint meaning it has a wide array of movements. The first example of movements are abduction and adduction which can be seen during a cartwheel in a gymnastics routine. The shoulder joint initially begins with abduction as the arms are moved out to the side to begin the cartwheel this is caused by the ~~deltoide~~ <sup>deltoids</sup> contracting and the pectoralis ~~relaxing~~ <sup>relaxing</sup>. As the cartwheel occurs and the gymnast lands on their feet the shoulders begin to adduct and move back in towards the body in preparation for the next stage of the routine this is caused by the pectoralis contracting and the deltoids relaxing. Horizontal <sup>extension</sup> ~~flexion~~ can be seen at the shoulder in the preparation phase of a forehand in tennis and horizontal flexion occurs during the execution phase of the forehand in tennis and similarly to abduction and adduction the muscles used here are the deltoids (the posterior head) and the pectoralis. Extension and flexion <sup>also</sup> occur at this joint demonstrated during back stroke as the joint extends during the above water phase of the arms stroke through the deltoid <sup>(shoulder)</sup> contracting and then flexion occurs <sup>in the</sup> underwater phase as the angle at the shoulder is reduced. Circumduction which can be seen during a spin bowler in the execution phase is a combination of all of the movements and uses the deltoids and pectoralis.

(Total for Question 11 = 8 marks)



# Question 12: Extended Essays

- The quality of analysis and linking discussion is more important than length of answers
- Answers must fully focus on the question asked and not just ‘write all you know about fatigue’ – as in this instance
- Good answers used technical language accurately and applied it





# Question 13

- Definitions must be learnt as per the specification or topic guides
- A common error was not using the word **maximum**



# Question 14

- Submaximal and maximal exercise are not well known
- Duration and intensity were the most common answers
- Some errors were in linking to fitness tests



## Question 15

- Although parachutes were known, the advantages and disadvantages were not as well known
- Answers should be structured as advantages and disadvantages



# Question 16

- Understanding of the benefits was sometimes confused with discussing the technology itself
- Noticing the specific question asked is really important
- Answer structure should ensure enough points are covered e.g. 4 marks should be four distinct points



# Question 16

Examples follow on subsequent pages.



# Question 16 Example

16 Describe the benefits of using technology to monitor work rate for games players.

(4)

Monitoring work rate allows a coach to see where activity is most occurring and what areas / tactics need to be used to get play in certain areas / positions. Monitoring activity also shows which athletes are working to their max HR and who need to put in more training and effort.

Can show which positions in team require most endurance can allocate players in terms of their fitness to their positions.



# Question 17

- This question specifically asked for the methods to measure or calculate intensity
- It was well answered, with candidates knowing a range of methods
- Most common answers were RPE, Karvonen and 1RM



# Question 17 Example

17 Outline **five** different ways athletes can measure the intensity of their training.

Karvonen theory  
W:R ratio  
Borg's rating  
RPE (5) 1RM

There are different ways athletes can measure the intensity of their training. Firstly, they can use Karvonen theory which involves working out target heart rate by  $\text{max max heart rate} - \text{resting heart rate} = \text{heart rate reserve}$ . Then  $\text{heart rate reserve} \times \% \text{ heart rate} + \text{resting heart rate} = \text{target}$ . This also allows athletes to work in between the thresholds and determine the intensity they should work at. Work: rest ratio may be incorporated in training by having a <sup>variation</sup> in work and rest times e.g. 400m with a 60s rest. This can be altered depending on sprinters and long distance runners. Borg's ~~rate~~ rating of ~~percept~~ perceived exertion is a scale of 1-20 with 6 being not exerting at all to 20 being maximal exertion. This could be used to predict HR. One repetition max (1RM) is the maximum force that can be exerted in a single repetition, <sup>which</sup> but ~~but~~ you work out with increasing percentages of weight. Finally, there is functional intensity & threshold which <sup>if when</sup> you can a performer reaches their max.

(Total for Question 17 = 5 marks)





# Questions 18 and 19

- Candidates were not as familiar with these topic areas
- The range of resources to support teaching such as *Inside Track* magazine should be used by students as well as teachers



# Question 18 Example

18 Outline the protocol for the Wingate test. ✓

(5)

- The participant will take their weight before taking the test.
- The bike will be set up to fit the participant.
- The participant will undertake a 30 second warm up on the lowest level to increase the blood flow to the muscles and also to get into a rhythm.
- After the 30 seconds the load is applied / level increases and the participant has to cycle as fast as they can for 1 minute.
- Another member will use a stop watch to time both the 30 seconds and 1 minute.
- When the time is over they must stop and take their reading and record it. The results will also take into account your weight.

(Total for Question 18 = 5 marks)

- The results will then be compared to normative data / the average.
- This test tests your power
- It is a maximal test.

Tests power  
maximal test



# Question 19 Example

19 Explain three physiological determinants of running performance using sporting examples.

Muscle fibre types  
Body Composition

(6)

Proportion of muscle fibre types would effect running performance. A person with predominantly type 1 muscle fibres would have a high aerobic capacity due to high mitochondrial density and capillarisation so would be suited to endurance running. Where as a person with ~~type 1~~ predominantly type 2b (x) fibres would be suited to 100m as they have a high anaerobic capacity, ~~mass~~ and contractile strength and 300-800 fibres / motor unit.

Body Composition will effect running performance. A person with a large muscle mass would be more suited to sprint as they need more power whilst a person with little fat and muscle is more suited to endurance running.

Capillarisation - increased capillarisation will have a greater effect on an athlete working aerobically eg. marathon runner a 100m sprinter working on the ATP / PC system not requiring oxygen from gaseous exchange in the lungs.

(Total for Question 19 = 6 marks)



# Question 19 Example

19 Explain **three** physiological determinants of running performance using sporting examples.

(6)

Submaximal aerobic fitness can be used and refers to the ability to maintain a high percentage of  $\text{VO}_2 \text{ max}$  during a prolonged period of time. This would be a determinant for submaximal aerobic exercise. Exercise economy can also be used and refers to the energy required to maintain a constant velocity of movement. This determines the ability of an athlete to ~~convert~~ transfer energy into movement. Lastly maximal sprint speed can be measured which refers to how fast an athlete can sprint during an event. This would be a determinant in a 100 m race or 200 m sprint. Exercise economy would be measured during a 1500m race for example. Submaximal aerobic fitness would be a determinant in a marathon.

(Total for Question 19 = 6 marks)



## Question 20

- Show working out on calculations and ensure rounding is done correctly on answers
- Some confusion with the term 'split time'

(a) Calculate the split time for each 50 metres.

104 - 76

(4)

Distance (m)	Split times (s)
0-50	22
50-100	28
100-150	26
150-200	28



# Question 21

- SAQ was well known
- Not all candidates used linked points needed for an 'explain' question
- The link here was application to games players



# 8-mark questions 22 & 23


- Question 22:
  - Forces were well known but not all candidates were able to talk about all three
  - Lift most often missed out
  - Sometimes failed to assess them using examples
- Question 23
  - Candidates who knew suitable tests were not always able to examine the most suitable by balancing pros and cons
  - Not all candidates were able to come up with suitable tests



# Question 22 Example

Gravity, Air resistance, Lift forces

**22** Using sporting examples, assess the forces that affect the projectile motion of an object in flight.

  
(8)

When a discus is thrown, there are 3 forces acting upon it. Gravity is constantly pulling down on the object but it will only begin to pull it down when the lift forces are weaker than the gravitational pull. Lift forces cause the object to rise while it is in flight.

As a discus is thrown, the air flowing over the top of it has further to travel so it travels quicker compared to the air travelling beneath, which causes an area of low pressure to be on the top. As the slower air travels underneath, an area of high pressure is made and due to this, the high pressure pushes up on the discus causing the discus to rise and this principle is called the Magnus force/effect. Once the discus is thrown, air resistance occurs and what this does is slow down the velocity of the discus until the force at which the discus has been thrown and acceleration of the discus is matched and then less than air resistance which is where lift forces become weaker than gravity and the discus falls until it reaches the ground again.

(Total for Question 22 = 8 marks)







# Question 23 Example

23 Examine the most suitable fitness tests to determine an athlete's anaerobic capacity.

(8)

Many fitness tests can be used to measure anaerobic capacity. One example would be the Cunningham and Faulkner test. This involves running on a treadmill at 20% incline for at 8 miles/hour. Normative data can be used to assess the results to enable the athlete to determine their capacity. Anaerobic capacity refers to the greatest amount of energy produced from the anaerobic system. The Wingate test can also be used to measure anaerobic capacity. Both of these tests are maximal tests <sup>and</sup> are simple however they require specialist equipment and an assistant. It may also be expensive to obtain the equipment. However, the RAST (repeated anaerobic sprint test) can also be used. This test involves sprinting distances of 35 meters 6 times and taking calculations. No specialist equipment is needed and it can be done anywhere. To conclude, I believe the RAST is the most suitable as it is adaptable and easy to conduct. This test also is more suitable as it is repeated 6 times.

(Total for Question 23 = 8 marks)



# Question 24: Essay questions

- Analysis needed in answers to access the best marks
- Most common error was focusing answers on injury *rehabilitation*, not on *prevention* of injury
- Well-structured responses covering a range of technical examples are needed



# Question 24: Example 1

24 Discuss how an athlete might seek to prevent injuries.

(15)

Preventing injury is the aim of not allowing an injury to occur, before a performance. One way an athlete may try to prevent injury is by Managing risk, this involves identifying any potential risks, creating solutions or removing the risks and identifying when or not to participate. Managing risk may include completing a risk assessment and identifying all risks to the athlete. For example, a cyclist may look at the terrain, to look for any dangerous hills or hidden dips, they may not have seen it. They don't complete a risk assessment. This allows them to prepare for the risk and avoid it if possible. Another risk a cyclist may identify is if it is windy, then they will know when not to go slower in open areas as the wind may cause them to fall off, once they avoid, lessening the chance of injury. However, completing a risk assessment takes time and can require technology, such as wind trackers that may not be accessible to all athletes.

Another way an athlete may try to reduce the chances of injury is protective equipment. This is the use of using equipment such as helmets to ensure that the least amount of damage can be caused to the individual. A cricket player uses protective



# Question 24: Example 1

equipment. Such as helmets, pads and gloves. This is to ensure that the risk of injury is as small as possible when batting and facing a cricket ball. A problem with protective equipment is that it is expensive and poor, cheap equipment could not provide sufficient protection, leading to injury.

Another method is conditioning. This can involve training for weeks/months before a performance, to ensure that the body is ready and able to perform and can handle simply utilizing a correct and sufficient warm up before exercise. Conditioning before a performance ensures that the muscles can withstand the intensity of the performance and ensure that the level of fatigue is suitable for the duration of performance. Conditioning for a marathon runner may include continuous training and other targeted aerobic training. Completing a suitable warm up is essential before performance as it gets the muscles warmer and increases the elasticity of the muscles, meaning they will be less likely to ~~tear~~ tear.

Another way of reducing the risk of injury is to ensure that muscle balance in the body is equal. If a working muscle pair such as the biceps brachii and triceps brachii are not balanced



# Question 24: Example 1

It can cause the stronger muscle to strain the antagonist muscle, in this case being the trapezius muscle, causing it to tear or become over stretched. A deadlifter would need to ensure that their muscles are balanced, as they will be lifting very heavy weights. If the latissimus dorsi is much stronger than the quadriceps, the lift will lift too much weight for the quadriceps to cope with, causing serious injury to the quadriceps. Muscle balance can be hard for some individuals as natural genetics and their upbringing can cause some muscle groups to be stronger than others. This can be a very long process to correct and is very time consuming. Some athletes may seek out specialist nutrition or trainers to aid in this process, also creating a fitness problem too.

~~To conclude, there are many ways to~~ To conclude, there are many ways to reduce the risk of injury, however this requires specialist knowledge and an understanding of the risks. These precautions can also be unsuccessful, for example James Anderson was tested using force plates with his bowling. Scientists discovered that he was applying too much force ~~when~~ <sup>when</sup> running up and suggested he changed his bowling style. This change caused him to fracture his back while bowling. Therefore I think these precautionary measures can be successful with the right technique, however individual characteristics must be ~~considered~~ considered. (Total for Question 24 = 15 marks)

TOTAL FOR SECTION B = 70 MARKS  
TOTAL FOR PAPER = 140 MARKS



# Question 24: Example 2

24 Discuss how an athlete might seek to prevent injuries.

(15)

Different injuries that may be acute or chronic require different ways to be prevented.

One way the prevention of injuries could take place is by managing risks. The athlete must take into account all risks that may be extrinsic or intrinsic. Intrinsic risks include risks that are personal to the performer, such as their age, weight, muscle balances and conditioning. For example, it is a ~~common~~<sup>boxer</sup> known that men's weight is 50 kg. Men should know they should not fight someone twice their weight, therefore prevent an injury. Extrinsic risks are those that are out of the performer's control and involve, for example, the weather or playing surface. For example, if the pitch is frozen, the athlete knows it may be dangerous to play, therefore prevent injuries. Other extrinsic risks can include equipment and clothing, such as shin pads. An athlete should know the correct equipment required for their sport. For example, in rugby, a mouthguard and head gear for scrums to prevent injuries.





# Question 24: Example 2

sustained to the head, or mouth.

In addition, a way to prevent injuries is proper and adequate conditioning. For example, having a stable and strong core to aid balance will decrease the chance of falls. Also, having proper flexibility in your joints will minimise the risk of a strain and ~~being~~ having general <sup>strength</sup> ~~flexibility~~ conditioning will prevent <sup>injuries</sup>. For example, if a goal keeper ~~is~~ <sup>isn't</sup> prepared for the ball but a player kicked it and collided with him ~~then~~ the goal keeper, a ~~proper~~ a ~~strong~~ strong core and stable base to encourage balance would help prevent an injury.

Furthermore, muscle imbalances ~~can~~ could cause an injury if the antagonistic pairing of the muscles is not correctly balanced, for example if your quadriceps are very strong but if your hamstrings are weak, this will cause the leg to be susceptible to injury as the leg could move side to side and create unwanted movements. Therefore, having balanced muscles will aid the prevention of injuries.



# Question 24: Example 2

The technique of the performer could also cause injury for ~~ex~~, well if a coach or teacher taught the skill incorrectly it could lead to injuries such as a stress fracture. Therefore an athlete must ensure they must their coach and ensure they are executing the correct technique otherwise it can cause injury. For example if a rugby player is incorrectly tackling opponents by going too low this may result in a concussion or even a fractured skull, so, the correct technique will help in the prevention of injuries.

Overall, these factors can be useful to ~~exercises~~ athletes ~~and~~ in order to prevent injury and optimise performance.

(Total for Question 24 = 15 marks)

TOTAL FOR SECTION B = 70 MARKS  
TOTAL FOR PAPER = 140 MARKS



# Component 2





# Main Strengths in Performance

- Excellent full mark responses for some of the points-based questions
- Better responses to the four extended questions with writing structure and conclusions improved
- Consistent performances across Sections A and B



# Main Areas to Develop in Performance

- Structure the extended questions and think about writing a response to these first – a plan often helps!
- Avoid overly long subjective examples and sweeping generalised statements
- Limit bullet points
- Use the Mark Scheme to build candidate knowledge
- Learn definitions from the glossary



# Question 1

- Numerous responses could be given
- Must be related to Skill Acquisition and Physical Education
- No requirement for lengthy descriptions

This response was worthy of the 3 marks available and answers the question appropriately:

SECTION A – Skill acquisition and sport psychology

Answer ALL questions. Write your answers in the spaces provided.

Identify three factors that affect information processing. (3)

- Intensity of stimuli

- ~~Number of~~ Age Number of possible stimuli

- High Age

(Total for Question 1 = 3 marks)



## Question 2

- Many candidates knew all three laws in detail
- Some confusion over law of effect – often repeated the summary of the law of exercise

This response correctly summarises the three laws....

2 Summarise Thorndike's laws of learning. *effect readiness exercise* (3)

There are three Thorndike's laws of learning. The law of exercise which states that repetition helps strengthen the stimulus and response bond (the S-R bond), the second law is the law of effect which refers to either positive or negative reinforcement which can either strengthen the S-R bond or weaken the S-R bond. Finally, there is the law of Readiness which is if the person has warmed-up to <sup>ready</sup> ~~speed~~ up the nervous system to prepare it for ~~exercise~~ and improve the S-R bond.

(Total for Question 2 = 3 marks)



## Question 3

- ‘Explain’ questions require linked points – explain the two types of practice and give an appropriate example
- Confusions did exist and some examples ‘vague’ or not strictly appropriate
- Mixed responses with some candidates gaining full marks

A full and detailed response worthy of full marks:

3 Explain what is meant by the terms fixed practice and distributed practice. Use a suitable sporting example for each form of practice.

(4)

Fixed practice is a type of practice where the conditions remain the same, and a skill is repeatedly practiced in closed conditions. For example a whole session dedicated to practising an overhead serve in tennis, with no rests. Distributed practice is practice that occurs in intervals with periods of rest to allow for mental rehearsal. For example in sprinting training 4 x 400 m sprints are performed with 5 minute rest in between for each feedback.

(Total for Question 3 = 4 marks)



## Question 4

- The first extended question was well answered to levels 3 and 4
- A limited range of technological examples seen
- Writing structure in responses better. Conclusions given – if at times short
- See next slide for an example of candidate work



## A very good paragraph detailing the impact ....

Technology can be seen in many sports, however, it has a very large impact on Cricket. It aids Cricketers through mechanical guidance, in bowling machines. A batsman can need to practice the skills for one certain shot. With the technology of a bowling machine the likes of Joe Root can set the bowling machine for 90mph bouncers and practice the skills for a pull shot repeatedly. This would enhance his skill and his performance for when he faces hostile bowling.





## Question 5

- As a definition question the content found in the glossary is vital
- Some leeway given if key words and meaning still evident
- Many responses were too vague

A valid response worthy of credit:

5 Define anxiety.

(1)

A negative emotional state caused by  
overarousal due to stress, where the outcome  
of the performance begins to be doubted.



## Question 6

- A well-answered question - candidates understood the difference between cognitive and somatic anxiety
- Majority of candidates wrote with clarity
- Examples used were appropriate



# A good example gaining full marks

- 6 Describe what is meant by cognitive anxiety and somatic anxiety. Your answer should include a symptom of each type of anxiety.

(4)

cognitive anxiety relates to ~~physi~~ psychological changes  
& individual feels  
such as feelings of doubt and nervousness towards a  
situation or person.

whereas somatic anxiety is physiological changes of  
an amektes behaviour such as sweating or nail biting.



# Question 7

- Some confusions but most correctly identified Nach and Naf
- Descriptions at times lacked key words, such as taking risks or attitude to feedback and failure

This example  
fulfils the  
question demand:

There are two types of performers the first being the Need to Achieve (NACH) which refers to someone who wants a challenge and doesn't matter if they fail. For example taking the harder route up a rock face. The second is the Need to Avoid Failure (NAF) which refers to someone who doesn't like a challenge and fears failing. For example, they would take the easiest route up a rock face.



## Question 8

- Many candidates spent time explaining the concept of social loafing which was not required
- ‘Summarise’ command word requires the most important ideas, hence a short contextualisation
- Some suggestions would not minimise social loafing, as asked in the question



# This example fulfils the command word requirement

- Use of technology such as GPS trackers. By a coach making the players where trackers in football the coach will be able to see if any players aren't pulling their weight. It can also mean that it provides increase motivation.

- Give a player who can be a social loafer a high commanding role such as captain. This is because it could change the attitude of the performer and increase their motivation.

- Introduce punishment for social loafing. This will decrease the chances of this happening as motivation will increase as they try to avoid punishment.



## Question 9

- A well-answered question with interesting content
- Most included detail of the three main leadership styles – Autocratic, Democratic, Laissez-faire
- Applying this to effect on performance was seen in many level 3 and 4 responses



# An example of a good first paragraph ....regardless of correct spellings!

Chelanderai identified a continuum of leadership styles in which were ~~autocratic~~<sup>a</sup>, laissez faire and democratic. An autocratic leader is very dominant and in charge, in which they provide the participants with the information and make the decisions. A laissez faire leader, allows the participants to make the decisions and follows what they wish to do. A democratic leader is inbetween the others and allows/welcomes the participants views but they make the overall decision.





# A short but effective conclusion

In conclusion, all three leadership styles have the potential to improve performance, but this depends on the skill level of the individual/team and their personality (if they're NACH or NAF). I believe all three types should be used interchangeably to produce the desired effect of performance.



# Question 10

- Define – refer to the glossary
- Must include the idea of combining rules from public schools
- Some confusions as to the role played by the two universities



# Question 11

- Clear confusion among many candidates
- New topic which needs to be taught
- Sub-headings can be used: 2 advantages and 2 disadvantages

This response contains acceptable content from candidate who understands the concept and was worthy of full marks:

2 advantages are that there is a more financially even playing field and that owners of franchises can move them to different locations as they are more profitable, reaching a new market.

2 disadvantages are that local fans may have to start travelling long distances, if they a franchise relocates, in order to attend games. Another disadvantage is that if a franchise moves, there may no longer be a local team for fans to support.



## Question 12

- Levels-based question requiring exploration of the issues
- Few wrote beyond obvious statements
- Many simply wrote the data out and made simplistic comments
- Data should have supported a response
- Some analysis seen in criticising the data



# An example of a good introduction

(8)

Within the modern day it is becoming more and more easier to become unhealthy. This is indicated by the table above. It is crucial to have a healthy population as it means there is less pressure on national health support and will also mean standards of living will rise and people will be happier and fitter.

The table above shows that the % of adults with RHD in 2006 was 5.2%, in 2011 it was 4.6% and in 2016 3.0%. These



# An example of analysis including data

The nations population is becoming increasingly unhealthy.  
This is shown by in ~~2006~~<sup>1993</sup> 15% of  
people were obese, in ~~1993~~<sup>2006</sup> 23.9% were and  
by 2016 26.2% were. This could be because  
more people nowadays have more sedentary  
lifestyles, such as office work and they also  
don't have as much time to exercise.  
On top of this it is more common to eat  
fast food, which has a lot of fat in as  
people have less time to cook. This therefore shows  
the population to be getting a lot unhealthier.



# Question 13

- A well-answered question by many
- Candidates mainly understood the roles of an NGB
- Issue with making Laws/Rules which had to be linked to the International GB
- Some context/description needed, not just a simple list





# An example of a full answer

- To ensure that that sport in that country doesn't become unsustainable, by looking at finances.
- To ensure fair play of all events, this includes ~~data~~ monitoring officials.
- To ensure ~~then~~ there is a high level of grass roots sport occurring, by providing equipment to teams.
- To increase funding of teams by helping with sponsorship deals.
- Ensure all facilities are inclusive for disabled athletes, such as a ramp.
- Ensuring that all facilities are safe to play in with correct first aid training.
- Ensure equality is kept
- No discrimination
- No ~~drugs~~ drugs / doping.





## Question 14

- Most scored some marks for what was seen as a straightforward question
- Some confusion related to benefits for the supporter
- Avoid subjective responses such as ‘enjoyment’
- Increased coverage is in the question but needed to be described correctly, such as rise in mobile platforms



# A response worthy of 3 marks

- Spectators do not have to travel to games as they can now do 'armchair viewing'.

- Watching on television is often cheaper than the price of tickets to see a game / event.

- Television coverage increases excitement of viewing experience for a supporter with action replays, slow-motion, goal line technology, hawk-eye etc.



# Question 15

- The weakest responses from all four extended questions
- Limited depth of knowledge seen and limited range of examples of disability issues – opportunity, provisions and esteem
- Few included content from across the component
- Many attempted a valid conclusion



## Example of analysis and a logical conclusion to this paragraph

Although the opportunities for disabled athletes have increased in sport, I do not think that they have achieved equality. This is because there is greater television and media coverage of 'able bodied' sports and also a lack of role models when the two are compared.



# Example of a good final conclusion

I think that disabled athletes now have more provision, opportunity and access to sport as a result of the media having a positive influence, however I believe that equality has not yet been achieved as there are still existing stereotypes, these may change over the forthcoming years along with an increase in participation.



## Question 16

- Well answered by many but only to level 3, some to level 4
- Most understood the concepts of commercialisation and global sport but fewer were able to link the two in a 'cause and effect' two-way relationship
- Evaluation requires a judgement based on the written content
- Time management was an issue for some, given this is the final question on the paper



# Example of a very good introduction

Commercialisation is the treating of sport as a commodity involving the buying and selling of assets with the market place being the driving force behind sport. In turn it has led to a number of impacts on global sport, some negative and some positive.

Firstly, commercialisation has caused an increase in media coverage on global sport which enables the sport to gain an increase in revenue from advertising deals, sponsorship and endorsements. This money can be re-invested





# Example of good analysis and opinion

Furthermore, Commercialisation of global sport has ~~lead to~~ given global stars sports stars to showcase their talent. This enables them and the sport to increase their fan base and spectators. ~~As a consequence,~~ Consequently, <sup>leads to an</sup> increase revenue from ticket ~~sale~~ <sup>sales</sup> and awareness of the sport.

Despite this, with increase fan base their comes an increase responsibility for stars to be role models. This can lead to scandals as seen with Tiger Woods and Cristiano Ronaldo which in turn could possibly tarnish the sport by bringing outside conflict onto the sporting field.





# Review Comments

- There is no substitute for applied academic knowledge
- Focus on applying knowledge correctly to the command word used in the question
- Extended answers need structure, shorter and more distinct paragraphs, and application to the command word
- Plan a strategy to answer the questions set and then complete the paper on time



# Support

For further support, contact the Physical Education team:



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