



Examiners' Report Principal Examiner Feedback

Summer 2025

Pearson Edexcel Advanced Level
In Physical Education (9PE0)
Paper 01 Scientific Principles of Physical
Education

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Q01i

Most students were not able to name the correct muscle nor spell it correctly. It is essential that the muscles are taught with their function and correct spelling. The muscles in the list in the specification are the ones that should be taught.

Q01ii

More candidates were aware of the Deltoid muscle and there were fewer spelling errors with this muscle name.

Q01iii

The psoas major was not well-known; 'hip flexor' was sometimes used. This is a named muscle in the specification, so it needs to be taught.

Q02a

Sometimes the factors were listed rather than being summarised. The size of base of the support being bigger, being more stable and with more points of contact with the ground so being more stable, were the better-known answers. This area of the specification was not well-known.

Q02b

Synergist and fixator muscles were the best-known answers, possibly as they have been featured on a previous exam paper. This area of the specification was not well understood.

Q03a

This definition was not well-known nor precise enough. Most candidates know the time frame (the when) but not precisely where.

Q03b

This definition was not well-known nor precise enough. Again, most candidates knew when but not where.

Q04

A lot of factors influencing stroke volume were known, although the equation was given often ($SV \times HR$). Most common answers were venous return, heart rate and hypertrophy of the heart.

Q05

This was known by candidates, although some lost marks by listing and not summarising. Understanding the demands of the command word is crucial to a good performance.

Q06

This was well-known by candidates, but sometimes they did not score all the marks because they were not specific enough. For example, not naming muscles and also not being specific about when they are in use and the phase e.g. the upward or downward phase of the bicep curl. For example: the upward phase of the bicep curl is concentric for the bicep brachii muscle, where it shortens as it contracts.

Q07

This was very well-known by candidates with many scoring the maximum marks available. They knew that arteries have a thick lumen to contend with blood under higher pressure, and that veins have valves to prevent backflow, and capillaries are one-cell thick for diffusion, most the common answers.

Q08

This was known but not always well applied to the respiratory system. Some errors were made with candidates talking about CV factors on the heart or the blood vessels. The best-known answer was smoking and its effects by damaging the tissues in the lungs and limiting gas exchange. Factors such as lack of exercise, alcohol and obesity were known but were incorrectly applied to CV and therefore did not score.

Q09

Sometimes, some effects were known but not their effect on the neuromuscular system. The most common answers were hypertrophy, which is linked to stronger or more powerful contractions and adaptation of fibres to get more than 11X, which gives stronger contractions. The most common error was that the link to the effect on the system was not given. This is about exam technique and ensuring that candidates read all parts all of the question before starting their answers.

Q10

The three laws were well-known, but candidates were not always able to apply them specifically to the particular phase of the performance in the run-up and the strike of the ball. The highest scoring answers were able to link their knowledge to the specific examples with more detailed application. The best answers in particular, examined the different aspects of Law 2, discussing the application of direct and indirect proportion of force, mass and acceleration, applying them to either/both the phases of performance.

Q11

Some candidates focussed either on ventilation or diffusion. The best answers were detailed with a high level of knowledge on both elements. Those who could examine the pressure differences and gradients, tended to score more highly using more technical language.

Q12

Most candidates could name the three systems and included some detail on how each worked. Only the best candidates were able to give excellent sporting applications to support their answers. A number of students had misconceptions on one or more of the energy systems and how they work.

Q13

This was well understood with the most common answers being strain, stress fracture and tendonitis.

Q14

Those who understood this scored highly with good explanations of the pressure difference and they were able to explain what was happening on the top and the bottom of the discus. Diagrams were sometimes used to good effect when fully annotated.

Q15

This was well understood by candidates with a very good range of answers. Speed, power, reaction time and surface were some of the most commonly described answers. There were some errors from candidates by not describing and just listing the factors.

Q16

Sometimes, this was confused by candidates talking about blood being taken away rather than the compression clothing improving blood flow. However, increased blood flow, reducing blood pooling, thermoregulation and removal of waste were good answers that were quite commonly seen.

Q17

There were some good answers to this question with specific examples, such as studs on boots to help turning through increasing friction, and chalk increasing grip with friction counteracting sweat in gymnastics. Tyres, such as smooth or knobbly ones to increase or decrease friction in F1 in different weathers, was well explained. However, some answers confused things, i.e. what will increase friction with examples that would decrease friction. For example, thin ice skates reduce friction on the ice does not increase it. Some candidates could not answer this at all.

Q18

This test was not well-known. The most common scoring answers were being on a treadmill, in a lab and maximal. Inside Track magazine and topic guides are produced to help keep content up-to-date and current. Teachers are advised to utilise the resources' content. Discussion about MAOD appeared in an edition of Inside Track.

Q19

There were some good answers to this question, with the terms thermoregulation, replenishment of blood plasma, and preventing dizziness being quite common. Viscosity was a term that was sometimes misunderstood, some candidates referred to viscosity increasing with more hydration whereas it decreases. Many candidates went off on a tangent and discussed hypo/hypertonic drinks. Some did not know it at all.

Q20

There were some good answers linked to performance such as increased strength which allows them to support their own body weight or more power allows them to stay in the air for longer during somersaults. Weaker answers were more general and did not relate to gymnastics.

Q21

This was not as well answered. The idea of work to rest ratios was evident but there did not seem to be an understanding that this could be for longer or shorter periods of activity. The application to the sporting setting was not very strong.

Q22

There was some understanding, but the correct terminology was missing, such as drag, buoyancy, propulsion and turbulence.

Candidates were able to talk about swim caps, shaving and swimsuits, but without the technical knowledge from this area from the specification to support their thinking.

Q23

Candidates were able to talk about the three different types of spin. There was less understanding about other factors such as surface texture and warming up the ball. A number of candidates missed out on the bounce aspect of the question.

Q24

The best responses were able to include both coach and player and focus on the statistics used. There were some errors with candidates simply talking about technology and not the data it can produce, or it can be used by the athlete and the coach. Common answers included GPS, heart rate monitors, video analysis and force plates, but often had limited/basic information about their use and their impact. Analysis often only included cost implications (sometimes even when accessibility has increased and cost has reduced massively, so these are not a particularly limiting factors).

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