
GCSE

PHYSICAL EDUCATION

8582/1 The human body and movement in physical activity and sport
Report on the Examination

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General

This is the first year of the new specification and students found the paper challenging. However, this allowed for differentiation across the full ability range. Although many students demonstrated sound knowledge, they had a few problems interpreting the command words and therefore the assessment objectives that questions were targeting. Examples of this will be highlighted for individual questions. Teachers should prepare students the meanings of different command words as these give an indication of the assessment objective(s) being targeted and thus show them how the question should be answered.

Due to the requirements of the new assessment objectives, there is a marked difference as to where the marks can be awarded compared to the legacy specification assessments. There are a number of resources available to teachers on the AQA website and the 'Secure Key Materials' section of e-AQA to support teachers with this change.

There were a few questions that were not attempted, notably questions 12.1 and 12.2. Surprisingly, there were a number of students that did not attempt some of the multiple choice questions.

There was no evidence that students did not have sufficient time to complete the examination. The extra space provided in the answer booklet meant that fewer students used additional pages for the level of response questions although many required further space for questions 11, 15, 18 and 20. However, a small number did use the extra space to answer another question, which sometimes caused confusion during marking. Students should be writing on additional pages when they run out of space so it is clear which question they are answering. This is something schools should teach their students to do for future examinations.

Questions 1 to 7

Questions 1 to 7 were multiple choice questions. The level of difficulty varied, with questions 03 and 05 being the most accessible, whereas questions 06 and 07 proved the most challenging.

Question 08.1

The majority of students gained at least one mark, usually from correctly identifying plantar flexion at the ankle. Students had most problems with identifying the movement at the hip with the most common incorrect response being flexion. Some students identified the bones and not the joint action.

Question 08.2

This was slightly better answered with over two thirds of students gaining at least one mark. Many of the students did not use the correct anatomical names of the muscles, for example writing calf instead of gastrocnemius. The most common incorrect responses were for the quadriceps being wrongly identified as the hamstring and for the tibialis anterior being wrongly identified as the gastrocnemius.

Question 09

Students that understood the term 'redistributes' answered this question well, with some gaining full marks for both stating the correct process and the changing life of the blood vessels and the

area of distribution. Many students that correctly identified the processes of vasoconstriction and vasodilation (AO1) failed to obtain further marks. This was because they did not explain the changing life of the blood vessels or the areas of the body receiving either a restricted or increased blood flow. They therefore failed to gain the AO2 marks allocated to the question.

Students that failed to gain any marks for this question mostly referred to the circulatory system, including increased heart rate, oxygenated and deoxygenated blood.

Question 10.1

This was a well answered question. Most students identified the cartilage and synovial fluid correctly. However, some students incorrectly identified the synovial membrane, identified the structures the wrong way around or simply named bones.

Question 10.2

This was a well answered question with the majority of the students gaining at least one mark. Students that selected synovial fluid as a structure mostly went on gain full marks by describe it's function in the prevention of injury, identifying the functions of lubricating and reducing friction. However, where students selected the cartilage, many were unable to give two different functions. Many students gave both 'preventing bones rubbing together' and 'reducing friction', which is the same thing. Acting as a 'shock absorber' was also correctly stated by some students.

Question 11

Most students obtained at least one mark, often related to explaining why EPOC was happening. The most common mistake the students made was being unable to state clearly what would happen to Rosie's breathing rate immediately after intensive exercise. Students regularly stated that breathing rate would increase, instead of stating that she would maintain an increased breathing rate.

Many students were awarded marks for explaining that oxygen stores were replenished to repay the oxygen debt and for the removal of lactic acid from the body. Fewer students identified intensive exercise as having been anaerobic.

Question 12.1

There were a surprisingly high number of students that didn't attempt this question. Where students attempted this question, it was answered reasonably well. However, it was apparent that many students didn't understand the term concentric and defined either eccentric or isometric. The most common example was the bicep curl, however students failed to identify it as the upward phase of the bicep curl or when the muscle moves the weight up.

Question 12.2

Again, there were a surprisingly high number of students that didn't attempt this question. Students often referred to the body not moving rather than stating that the muscles don't move or change length. The most common correct examples given were the plank crucifix or handstand. When an example of a rugby scrum was stated, students didn't identify the phase when the muscles are working isometrically.

Question 13

Most students gained at least one mark and over half of the cohort was awarded full marks. The most popular responses were DOMS and fatigue. Some students failed to obtain the second mark by stating DOMS and aching or tiredness and fatigue, which were alternatives of the same things.

Question 14

Many students responded well to this question, with over half of the cohort picking up at least one mark. The most popular creditworthy answer related to the idea that tests were not sport specific, neither replicating the exact movements or competitiveness of a game. However, there were a high number of student responses that incorrectly referred to, setting up test, the time or space they take up, or the cost element involved. These students had failed to identify that the question asked for limitations linked to preparation and performance. Other common mistakes included listing different fitness tests.

Question 15

Although many students were able to access at least one mark, very few gained full marks on this question. Many students failed to grasp the requirement of the command word 'justify'. A high number of students simply gave the definition of balance, which was not a requirement of the question and would have been a simple AO1 response.

Some students did gain the AO2 mark by explaining that balance is required to keep a stable position or maintaining control of the body. Many student responses didn't go beyond this and therefore they only obtained a maximum of one mark for the question. Students that responded to the command word correctly by giving examples, often failed to access the AO3 marks because they did not clearly identify the impact that good / bad balance would have on performance within the game.

Students that selected netball examples seemed to fair best in gaining AO3 marks, especially when the examples referred to shooting, where the outcome of a successful shot was given, or how good balance helps in maintaining good footwork, which prevents violation of the footwork rule.

Students that selected basketball, particularly where the example involved dribbling (dynamic balance), rarely explained the advantage or outcome of good balance to the performance in the game, and therefore failed to access any AO3 marks. Students who used examples of set shots or free throws fared better, as students did identify an outcome, such as a basket or accurate pass. Many students only offered one example, so were limited to being only awarded one mark.

This question is an example of where the new specification is very different from the legacy specification. On the legacy specification, many students would have accessed more marks, but since it was a question targeting AO3, they were required to give more than one example of how balance is important in either netball or basketball.

Question 16.1

This was an extremely well answered question with the vast majority of students correctly identifying the knee or elbow. The most common incorrect response was patella. Some students misinterpreted the question and identified the bones at a hinge joint.

Question 16.2

This was an extremely well answered question with the vast majority of students correctly identifying the hip or shoulder. Some students misinterpreted the question and identified the bones at a ball and socket joint.

Question 16.3

Most students gained the AO1 mark for defining rotation. Common answers included circular motion or turning 360 degrees. However, many students used the word rotate in their definition. Students that made reference to an axis often failed to qualify this correctly, simply stating that it happens at an axis. There were a high number of students that referred to movement at a ball and socket joint, which neither qualified as a definition or as an example.

The most popular example provided was bowling in cricket. Although many identified the sporting activity, they did not achieve the mark as they tended not to say where the action took place, eg at the shoulder or the arm. Also, when referring to swimming, students did not relate to the action or body part being used and therefore didn't access the mark. A few students correctly gave responses relating to moving around an axis, with the most popular examples being a somersault or pirouette.

Question 16.4

Many students failed to include reference to the midline of the body in their response, therefore failing to provide a suitable definition, and consequently any example could not be credited. Many students simply referred to moving a limb away from the body.

Many examples failed to identify the phase of the action or some indication of the limb moving away from the body when abduction was taking place. This was especially the case with star jumps, swimming strokes and the netball shooting action. Another vague answer referred to a goalkeeper saving a ball instead of a goalkeeper reaching their arm to the side of their body to save a shot.

Question 17

This was an extremely well answered question, with the majority of students gaining the full five marks.

Question 18

This question was not well answered as many students failed to grasp the requirement of the command word 'justify'. Many students gave a long definition of reaction time, which was not a requirement of the question, and then referenced hitting the ball. This approach was only credited with one mark. Many gave responses linked to a bowler and the need to respond to the ball, or the fielder or wicketkeeper. However, many responses that took this approach lacked clarity and did not state why reaction time was needed, ie in response to the fast ball or swinging ball from the bowler, or the quick adjustment of the wicket keeper's body to react to an edge off the bat. More simplistic responses included 'to be able to catch a ball' rather than 'catch a hard hit ball when close to the batsman'.

It also seemed that some students did not engage with the other key word of 'importance', as many

examples lacked any reference to the effect or outcome on performance, which would have made responses worthy of the AO3 marks available.

Question 19.1

This question was not answered well. Students often failed to indicate which of their two responses was the plane and which the axis, therefore failing to gain any marks. Many also mixed up the plane and axis.

Question 19.2

The most common answer was 3rd class lever. However the majority of students failed to gain the mark on this question, which would suggest a lack of understanding on a new topic to GCSE, and one that students find extremely difficult.

Question 19.3

This question was poorly answered because of the high percentage of students incorrectly identifying the lever in the previous question. Regardless of the correct lever being drawn, the standard of drawings was very poor and equally poorly labelled. Students did not always use appropriate symbols to show the placement of the three elements.

The order and labelling of the lever system was sometimes given as three letters (L, E, F) or a similar coding, rather than giving the full names of the fulcrum, effort and load. Although these letter patterns are given to students as an abbreviation to aid learning or revision, they do not allow them to gain marks in the examination, as the question asked for a fully labelled diagram.

Question 20

Most students were able to gain one or two marks on this question but many failed to access the remaining three marks as they did not answer the question. Students often referred to the advantages and disadvantages of setting up and administering circuit training and the time element involved in participating in circuit training. This showed a lack of understanding of what the question was requiring, which was about the effectiveness of circuit training for a games player. Where students did offer responses in support of circuit training, they mostly referred to being able to work different muscle groups at different stations, or utilising various components of fitness in the circuit, but failing to qualify these with explanations as to how this related to an aspect of the game the performer played.

Most students gained a mark by stating the negatives of circuit training by showing how it was not sport specific or did not replicate real time match situations as there was no opposition present. Many students gained a mark for suggesting a suitable alternative training type, such as Fartlek or Continuous, linking these with either the need for good cardiovascular fitness in the game or to the similarity of replicating the changing pace of a game.

Question 21.1

A high percentage of students answered this question well and most understood how to interpret the result of the multi stage fitness test. The most common mistake was in identifying the level that Hannah was working at, putting her between two levels, eg Hannah was between fair and good. The other common incorrect response was simply stating that Saskia's' level was better than Hannah's or that it was good for her age.

Question 21.2

Many students recognised that quantitative data was represented by a number and many stated that they were facts. Many students also correctly stated that quantitative data is not an opinion. The students that failed to gain marks tended to describe the Multi Stage fitness test, which was not a requirement of the question.

Question 22

Students' knowledge of altitude training and application to a marathon runner was generally very good. However, evaluating its effectiveness proved difficult. Most students stated the aspects of altitude training in very clear and concise ways, ie the required height above sea-level, lack of oxygen and the increase in red blood cell production.

Some students were able to take this further by applying it to a marathon runner, referring to the effect of altitude training when returning to sea level, ie that the increase in blood cells present allows a greater supply of oxygen to the working muscles. Some students then did achieve AO3 marks by stating the effect on the athlete's performance. The key point was not to enable them to run for longer, but to run faster for longer, or to work at a higher intensity for longer delaying going into anaerobic respiration.

Many students' evaluations were weak. At best students explained the short-term benefit that altitude gave the performer, but when suggesting an alternative training method, they failed to state that this would provide a long-term benefit for the athlete. It was similar with many other points raised, such as altitude sickness, home sickness and detraining. These students would state these but not give an explanation or effect on the athlete's performance.

A very popular response from students highlighted the high cost and distance from home, as being a negative issue, but again without any explanation or link as to how this impinged upon improving performance.

It appeared that students felt that by describing altitude training, it would be sufficient to gain full marks. However, they displayed a lack of understanding of the command word 'evaluate' that was required in order to access the AO3 marks. Some students wrote AO1, AO2 and AO3 in the margin and were attempting to link points to gain marks. This proved counter-productive on many occasions as it limited some of the responses.

Question 23

The responses were often extremely long and many failed to target the main threads of the question. The question refers to an athlete hoping to be in peak condition when they compete in the Olympic Games and therefore students needed to refer to an elite athlete.

Elite athletes plan their training in blocks, training phases, seasons or cycles. This was not apparent with many of the students' responses reflecting a training programme that would be more suited to the average games player or athlete. There were also many students who were writing about a marathon runner rather than a 1500M runner. Some students referred to a training session rather than a training year.

Knowledge of pre and post season was generally very good but many students got confused with the competition season, merely stating that it was a period for minimal low intensity work.

Many students devoted much time to explaining SPORT and SMART targets, and defining each element but made little reference to the training year of an elite athlete. Many attempted to apply a variety of training methods to differing seasons and often gave an alternative type of training to avoid tedium. The relevance of the chosen training method was not always clear and sometimes inappropriate. Many students used altitude training, which was often assigned to pre- season but was not appropriately linked to the timing of the Olympic Games.

Students also attempted to include the FITT principles. Some of the better responses did identify the need to consider the intensity of training and some included references to training zones and stated the equations for both training zones. However, students rarely linked this to a training method to show application to the various phases and demands of a 1500M race.

Some included references to diet and were able to relate this to the competition season when carbohydrate loading was important for the athlete, and explained that a high protein diet would be beneficial to help build muscle in the pre-season or repair muscle in post season.

A small number of responses included ice baths, massages and peaking / tapering. Where these were linked to preparation and recovery, the students were accessing AO3 marks. The few who made reference to weight training did not relate to intensities or how it would be appropriate for a 1500M runner.

Overall the best responses were made by students who kept their answers very simple, wrote about the pre, competitive and post seasons, giving some relevant information on training zones and attempted to justify why some other factors would assist in the planning of a training year for an elite 1500M runner.

Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available on the [Results Statistics](#) page of the AQA Website.