

# Examiners' Report June 2017

GCE Physical Education 8PE0 01 Scientific Principles of Physical Education





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June 2017

Publications Code 8PE0\_01\_1706\_ER

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#### Introduction

To be successful in 8PE01, candidates must be familiar with all of the new content in the specification. Much of the new material that was tested was not well-learnt.

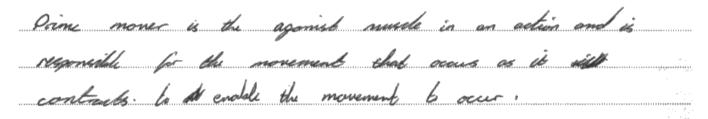
The command words in the back of the specification are critical to a good performance in the examination. Candidates must be familiar with what each command word requires them to do. The weakest performance by far was on 'explain' questions, where candidates were required to link points together.

Disappointingly, a number of the straightforward definition questions, which are designed to be accessible to all candidates, were also not known. Centres need to use both the specification and the topic guides to help with this.

Questions are structured to elicit different levels of responses. This is indicated both by the marks available and the command word used. For example, there are recall questions asking to identify, name, or give a definition. There are also discussion and explanation-based questions, requiring application.

For levels-based questions, a sustained response is needed. In calculation questions, marks were also deducted for missing or incorrect units. If a question asks for examples, then they must be given.

Candidates must be familiar with all of the definitions in the specification. These should be well-learnt. Any definition of any key word in the specification can be tested. There is a glossary at the back of the specification to assist with this. Key words must be learnt. The topic guides on the website for each unit also have comprehensive details of other key points. Both should be referred to regularly, in centres. This definition was known by the majority of candidates.





This candidate is able to provide an accurate definition and therefore receives a mark.

1 mark



Learn the definitions: there are always marks to be gained for knowing them

When naming movements, only the correct spellings are acceptable. Unfortunately, less-able candidates lost marks through incorrect or phonetic spelling. The majority of candidates were able to name both movements, and to achieve maximum marks.

1 Dorsiflexion	
	, , , , , , , , , , , , , , , , , , ,
***************************************	and a metal of the total
2 Plantiplexion	



This candidate has spelt 'plantar flexion' incorrectly and so is unable to gain that mark.

1 mark



Learn to spell movements and muscle names





This candidate gains two marks for plantar flexion and dorsi flexion. These were the most usual two answers given.

Many candidates knew this well. They were able to give the definitions of shortening while contracting, and lengthening when contracting. However, candidates need to be specific with examples. No marks were awarded if there were no examples: this question asked for examples to be used.

Correct muscle terms were required eg Bicep Brachii and not Biceps. Some candidates incorrectly referred to the Hamstring or Quadriceps, rather than the group of muscles. Some examples were vague and did not identify the muscle to which they referred.

The most frequent answer was the bicep curl, but when responses were marked, examiners needed to know if they referred to the upward phase or the downward phase and to which muscle. Some candidates also confused 'eccentric' and 'concentric' and had them the wrong way around.

contracts for example, the biceps

braching contracts in the downwards phase

of a bicep curl

contracts

contracts

for example, the biceps

braching contracts in the downwards phase

of a bicep curl



This candidate achieves full marks. They include accurate definitions, supported with detailed, accurate, examples.

4 marks



If the question says use examples, then you must

e.g. birept shortens when lifting a weight in a birept curl (Heling the elbar)

under tension e.g. during birtept curt when extending elbour louring the uright.



Concentric definition is incorrect, but eccentric is detailed enough.

There is nothing in the concentric definition that mentions 'while contracting'.

In the first example, the muscle name is incorrect. The second example does not say to which muscle it is referring.

1 mark



Learn muscle names scientifically and use their full names

Concentric contraction is the shortening of a music.

This would be the bicep contracting concertically in brackii
a bicep curi.

An Eccentric contraction is the lengthening of a music. This would be the tricer brackii during
a bicep curi:



Whilst this candidate knows the definitions they are not specific enough with the examples. The examiner does not know in each part of the response if it refers to the upward or downward movement of the arm (flexion or extension at the elbow) and therefore cannot award marks for the examples. This response therefore only achieves two marks.

To achieve marks in Band 1, candidates needed to be familiar with the terms 'load', 'effort' and 'fulcrum' and could give a basic description of a third-class lever.

A few less-able candidates talked about the shoulder, rather than specifically the elbow joint. Candidates achieving marks in Band 2 were able to apply their understanding specifically to the elbow – for example, by saying 'the Bicep Brachii provides the effort, and the pivot is at the elbow'.

In a Band 3 answer, there was more application and reasoning. For example, rackets can increase the length so this would increase the force with which an object was struck.

Some candidates confused the different types of lever. Many candidates were not able to move beyond Band 2 with their answer.

The clip attached achieves Band 3 because it contains application.





Use the glossary at the back of the specification to ensure you know what is required by each command word.

This definition appears in the glossary of key terms at the back of the specification. However, very few candidates were able to give the correct definition. Definitions must be learnt. There was much confusion regarding 'centre of mass'.

where all may of an object is thought to be concentrated



This candidate knows the definition and therefore gains the mark.

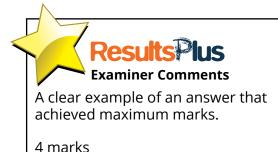
1 mark

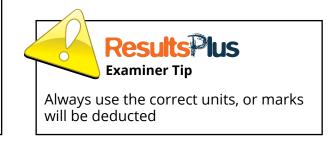
## Question 6 (a)

The majority of candidates scored very highly on this question, gaining maximum marks. This topic had been well-taught by centres.

A few candidates omitted correct units for the answer, which lost them one mark. A few candidates used incorrect units, again losing one mark. Some candidates added the two values at the end, rather than subtracting one from the other.

F= Ma Player A: F= 72 x 2 = 144 N Player B= F= 57 x 3 = 126 N 171 N Resutant force = B 171N-144N = 27 N





# Question 6 (b)

A straightforward question, and the majority of candidates gained marks.

This question was well-answered in centres. Many candidates were able to access maximum marks.

The most frequent answers referred to blocking of blood vessels, leading to reduced blood flow, increases in blood pressure and heart rate, leading in turn to a potential heart attack.

being eaten. then it will build as plague up in the luner of the exterior as plague increase therefore. This can cause heart diease, heart attacks and increase bressure Also too nuch Solt can cause blood chts or thombosis in arteries.



This candidate sets out their answer clearly and achieves maximum marks.

'Explain' questions demand linked responses. Less-able candidates had not been taught to answer 'explain' questions with linked statements. They were able to give simple statements, such as higher glycogen and higher PC. However, unless candidates linked this to the effect these had, the response was not worthy of any credit.

More-able candidates linked their responses. For example, "higher PC stores enable a higher speed of muscle contraction or power".

In preparing students for 'explain' questions, centres will need to look for linked responses.

#### **Question 9**

This is another example of an 'explain' question. Answers must be linked together for the functional response to achieve marks.

There was some confusion about the differences between 'structural' and 'functional'. Lessable candidates did not focus their answers on the muscular system only, and perhaps mentioned bones or heart. The most usual responses were hypertrophy leading to increased strength or power, and increased elasticity leading to injury reduction.

All candidates were able to access this question.

The most basic answers included information about the warm-up being split into jogging, stretching and sports-specific drills. To move up the bands this knowledge needed to be linked to performance. For example, jogging will increase the amount of oxygen being delivered around the body, which will enable the oxygen to be delivered to the muscles.

More-able candidates could link what happens in the body as a result of the warm-up, to explain how this improved performance. For the highest mark, a valid counter-argument giving the positives and negatives of warming up, would be needed. The top-scoring candidates were able to draw from all the course of study where appropriate. They were able to make links with psychology, for example, and discuss the psychological benefits of warming up.

will often have experiences on articipats seveted from the adveral gland striulates the six-atrial increase blood flow to the Similarly in the girst phase of a worn up there training in order to guther inserse heart rate conflicting this port of the worm up the body also to swetch to become supple and

will be able to pegam to other erable to the S-R to



This answer achieves the top band. It has full links to performance, and detailed knowledge. It does not quite cover all of the indicative content.

10 marks



Look in the specification and find out what is required for each command word

What should you do for 'Analyse'? What should you do for 'Compare'? What should you do for 'Discuss', and so on

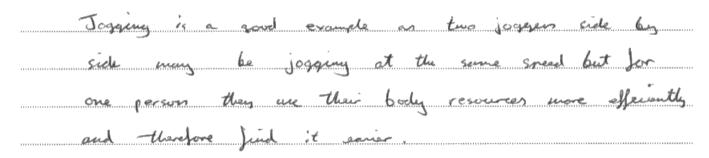
#### Question 11 (a)

Exercise economy is a new area of the specification. It has not been taught well. Although this definition is not in the specification, it is in the topic guide.

It is important that centres use the topic guides within the Pearson PE page of the website. These will be updated regularly, and are a very useful source of information. It is the specification and the topic guide that will be referenced, for accuracy of definitions. Many candidates did not know what exercise economy was at all, and incorrectly guessed financial economy.

# Question 11 (b)

Candidates were not familiar with the term 'exercise economy' in part (a), and were not able to use examples to explain it, in part (b). It is important that candidates are familiar with all the key terms in the specification.





This candidate is able to understand the terminology and provides an accurate example.

This response gains both marks: one for the example and one for correct application.

2 marks



All definitions must be learnt from the specification or the topic guides

This question specifically refers to recovery. It is important that candidates read the question carefully, perhaps underlining key words. In this question, the word 'recovery' (not performance or preparation) is crucial. A 'supplement' is something that is not part of the usual diet, therefore 'protein' was not accepted, but 'protein shakes' or 'whey protein' were accepted for this reason. Some candidates only referred to 'protein'.

Many candidates referred to herbal remedies. There is not enough scientific support for 'herbal remedies' to have been awarded marks. In this question, most marks came from amino acids, whey protein, creatine (but this needed to be linked to recovery of the ATP PC system and not for energy stores), and sports drinks to replenish electrolytes. Caffeine is not a recovery drink: this was a frequent answer that was not rewarded. The link with how supplements aid recovery was also important.

# **Question 13**

Candidates were familiar with this area of the specification. Usual answers were about aerodynamics, thermoregulation, Delayed Onset Muscle Soreness (DOMS) and venous return. Again, this question demanded linked points, and many candidates knew the effects but could not link them to performance. Centres need to train candidates to be able to write linked responses.

Periodisation was understood by most candidates. However, there was some reference to pre-season and phases of periodisation that are not in the specification.

The most well-understood mark on the mark scheme was bullet point one, where candidates knew this was reaching best performance at an appropriate time. They were able to talk about peaking or planning training around an event. Candidates were most familiar with Macrocycles, Mesocycles and Microcycles, with most marks coming from these four points.

There was less knowledge about preparation, competition and transition phases, and understanding about what happens during these periods.

in the bould up to a competution.

The periodised year is broken down into 4 sections, the macrocycle which is the long term plan from a year to 4 years ect. The meso cycle is periods of 6-8 weeks in the macrocycle. The microcycle is the weekly periods in the mesocycle. The final periods are the daily cycles which involve daily training plans. The year is broken into 3 phases. The preperation phase involves general conditioning, so a night volume of training at a low intensity. In the competition phase training is tapered (volume reduced) in the line up to the competition/event. The transition phase involves active rest to recover from competition.



This is a good example of an answer achieving full marks. It is well thought-through and details all the correct terminology, that is accurate and well-understood.

5 marks



Ensure that you are familiar with all the terms in the specification – for example, pre-season is not in the specification.

Use the specification for your revision.

Panicolisation is the process of branking our spect a time period into cycles and phoses to make size an athlete geaks at He might time. arenall and largest apple 8 the macro-apple it can be several years are includes all three draws. The next cycle is the meso-cycle as it focuses on one one a for 2-5 weeks for improvement. This is known dawn fuller the meno-ayole this nevently a cheek long and consists of daily cycles which optail day-to-day opes/exercises. The longest phase is proposition phase it facility and signal fitness and sport-specific exits fraucidi the competition phase. The competition phase mus low frequency and intensity fraining sections to avaid inity and to taper exercites so the athletes) peak at the right time. rohair, which is the off season where players transition 3 He (Total for Question 14 = 5 marks) rest and have very little training.



Microcycle is spelt incorrectly so did not score marks, but there is enough accurate information for this to score maximum marks available.

This is a new area of the specification. It was not well-understood by candidates.

Most candidates answered the question completely incorrectly. They discussed 'someone assisting you with your training' and achieved no marks. The most successful candidates were able to discuss downhill running and how this 'enables you to run faster than you could on the flat'.

There was some confusion between assisted and resisted training. More knowledgeable candidates were able to discuss running downhill.

Centres must look at which content is new in the specification and ensure that all the material has been covered. The topic guides are a useful resource for this.

The more-able candidates were able to understand the Margaria-Kalamen fitness test and then talk about factors that would influence results. The most frequent answers were timing gates versus stopwatches, warming up beforehand, and weather conditions.

Less-able candidates were not familiar with the test. It is important that candidates are familiar with all tests in the specification.

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This candidate achieves maximum marks and sets out their response clearly and succinctly.

There was some confusion about cross-training itself. Many candidates thought that cross-training was using different types of training or different components of fitness, rather than the use of another sport or more sports to improve fitness in a main sport. There was very little understanding of this topic area from the majority of candidates.

To access the second band, candidates needed to talk about why they would be playing the different sports and the effect this would have on their main sport. To access the top band, they needed to address the command word and assess if the sports were useful or not, with pros and cons.





This is a top band answer. The candidate clearly knows what cross-training is. They are able to make accurate links about why they are doing this training.

The response is focussed on a games player, as per the question. It has some positives and negatives about why this training may be useful. It did not achieve full marks because it did not cover enough of the indicative content.

This was an assess question, which required an evaluative statement (list of definitions in specification). Examiners needed to know if it is a useful method or not, with the balance of ideas to support the decision.

Cross training can help an athlete to develop specific components
of Athess for example a brocattore sureway could payer
could do marathon running to increase vermon and endurance.
This is helpful to a football player who needs to be
able to last a goninius game. However if the other sport
posed trained is not specific to the main components of finess
in the Original sport, there may be a regative transfer of shills
and adaptations of the muscles. For instance a badmington player
doing tennis for cross training because they're both rachet sports may
have a negative effect due to different techniques (e.g. tennis associ
have a negative effect due to different techniques (e.g. tennis asserts more gross morements whereas badmington has fine movements of the
wrist). Also the muscles may adapt regatively by instance a
marathan runner doing hockey may cause an increase in the development
Marathon runner doing hockey may cause an increase in the development of fast twitch fibres between anaerobic nature. It may benefit them with their shows final sprint however may cause a decline in aerobic
capacity.



This candidate also gives a top band answer.

6 marks



'Assess' questions must consider both 'for' and 'against'

Candidates were not all familiar with all of the tests. There was also confusion over the terms 'maximal' and 'submaximal'. All of these tests are maximal, involving running and provide estimates of VO2 max. Candidates who were not familiar with all three tests could only achieve marks in the first band.

Once a candidate had shown they knew all the tests, they needed to compare them and begin to analyse why the tests were good or bad. To compare, for example, they could have said that the Multi-Stage Fitness Test (MSFT) and Yo Yo are externally-paced, whereas the Cooper run is self-paced. The MSFT and Cooper tests have no rest, whereas the Yo Yo test has breaks within it. Only those candidates who compared the tests were able to achieve the top marks.

Most candidates were able to describe the MSFT and the Cooper run but were less familiar with the Yo Yo test. Some candidates had the distance between the cones correct. Better answers had good comparisons, with advantages and disadvantages of each. The term 'bleep test' is not accurate.

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This candidate knows what all the tests are. They are able to start to analyse whether the tests are good or bad. The candidate knows they are all maximal tests.

There is some comparison, eg Yo Yo has recovery and the other two do not. It does not give a full comparison but achieves marks at the top of Band 3.

9 marks



Two essays are worth 12 marks - if you are able to, draw on all areas of the course when you answer the essay questions

# **Paper Summary**

Based on their performance in this examination, candidates are offered the following advice:

- Learn definitions from the specification
- Use the topic guides on the website
- Plan answers to essays, underlining all key phrases
- Know what is required for each command word
- Centres should ensure that all new content has been covered

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