Examiners’ Report
June 2012

GCE Physical Education 6PE03 01
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Introduction

The report gives a detailed review of each question on this year's Unit 3 exam paper, with examiners tips where appropriate. For each question, also included are example answers that cover the range of responses given this year - these are accompanied by a commentary from the examiner explaining how and where marks were allocated. We would suggest centres use these to help highlight to candidates good exam practice.

This appeared to be an accessible paper, with a number of contemporary questions. It was good to see many candidates using specific examples from global sports competitions such as Euro 2012 and the London 2012 Olympics in their answers.

It is important that centres ensure that candidates are taught all areas of the specification. There was some evidence that a number of candidates showed limited or no understanding of topics such as heat exhaustion and performance profiling, yet these are clearly identified in the specification.

It was noted that some candidates did not make the best use of the available writing space within the question paper, and therefore need to use additional sheets of paper. If candidates need to plan their responses it is not necessary for the plan to be submitted with the question paper as only the response in the answer space will be considered.

Centres should also be aware that where extra sheets are used, these scripts cannot then be processed through the Results Plus service; a very valuable feedback for both candidates and centres. It would appear that in some centres all candidates had been encouraged to use an extra sheet - often this just had name and candidate number on but had not been used - these centres may want to consider the merits of missing out on the valuable, in depth analysis Results Plus can give a centre and help in the preparation for future series of examinations.
Question 1

The majority of candidates were able to access some marks for this question. Carbo-loading was the most popular answer. Candidates were required to link the diet factor to training and/or performance.

Outline requires candidates to list but also justify their answer. Some candidates only listed their response and were therefore not able to score higher marks.

This is a well presented answer that scores maximum 4 marks, the candidate has covered Carbo-loading with a brief link to energy needs, protein linked to growth and repair, Hydration linked to performance and Bi-carbonate loading linked to reducing fatigue.

Examiner Tip

Look at the exam command word - in this question candidates are asked to outline four strategies - some candidates lost marks as they simply listed bullet points linked to diet e.g. carbo-loading with no link training or performance needs.
Question 2 (a)

This question requires candidates to answer the question in two parts - first to define the term fatigue - examiners could award up to 2 marks for this and then to fully answer the question candidates must go on to give at least three strategies that lead to a state of fatigue.

Whilst most candidates could identify factors that lead to fatigue few picked up marks on the definition.

There are 4 points listed but no definition so the response can only score 3 out of 4.

3 marks were awarded for three factors
Depletion of fuels
Lack of oxygen
Lack of rest

However, build up of lactic acid is a factor but the maximum mark has already been scored.

Examiner Comments

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Examiner Tip
Candidates should look for 'and' in questions as this identifies that there should be more than one part to their answer. Candidate should also be familiar with definitions.
Question 2 (b)
The Central Governor theory now challenges some of the more traditional theories of fatigue, it is a good example of a contemporary theory in sport and candidates do need to be aware that sports science is dynamic and research and development is constantly challenging thinking.

(b) Explain how the central governor theory challenges the traditional theories of fatigue.

The central governor theory suggests that the brain induces feeling such as fear to prevent overworking muscles which can lead to injury. This is different from other theories as the brain is aware of glycogen levels in muscle and energy available relying on the central governor as opposed to muscles being in pain due to lactic acid build-up.

(Total for Question 2 = 8 marks)

Examiner Comments
Candidates appeared to understand this concept and gave good detailed answers often picking up maximum marks or struggled to show an understanding of the question.
A maximum 4 marks awarded for this answer.
1 for brain controls in CG
1 for preservation strategy
1 for muscles control in traditional
1 for lactic acid in traditional
Question 3

This question required candidates to make the link between use of pre-game rituals and how they can aid performers achieving their optimal performance levels.

Many candidates used the terms anxiety/confidence/concentration/arousal/motivation which were not always explained nor put in context. Only better answers explained why many performers used pre-game routines to help them maximise their potential.

A lot of answers simply listed a range psychological theories, and contained imprecise terminology and slang, such as 'pumped' or 'in the zone'.

3 marks awarded for this answer:
1 mark for reducing anxiety
1 mark for increasing arousal
1 mark for checking equipment.

Examiner Tip

Explain will often require candidates to make a link and state why such strategies are used.
**Question 4 (b)**
The focus of this question is for candidates to explain the importance of heat adaptation - too many simply described the effects of heat on the body.

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(b) Explain the importance of heat adaptation during elite performance in a hot environment.

- To keep the thermoregulatory control of the body, making sure enzymes are not denatured when too hot
- To keep the body hydrated meaning that the blood is not too viscous, the heart rate does not have to increase before activity, so blood can be sent both to the working muscles and the skin
- Surface to help with thermoregulation, do reduce the loss of electrolytes to help with hydration
- Stop fatigue as quickly
- Stop heat exhaustion
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**Examiner Comments**
Many used weather as an answer which was deemed to be too vague. The question required more specific answers such as heat, humidity, wind.

This is a good answer that scored a maximum 4 marks - marks were awarded for:
- temperature,
- wind,
- playing surface,
- indoors or outdoors.
Question 4 (a)

A straight forward question with many candidates achieving maximum marks.

Examiners gave a Benefit of Doubt mark (BOD) for the first point linked to thermoregulation with a valid justification.

A second mark was awarded for point relating to blood less viscous point 8 on the mark scheme.

A third mark was awarded for stop fatigue quickly- point 9 on mark scheme. The candidates point ‘stop heat exhaustion’ is too vague with no mention of temperature rising.
Question 4 (c)
This question links to 4b and required candidates to apply their knowledge of the use of ergogenic aids. Many did manage to state enough examples to gain maximum marks.

(c) Suggest three ergogenic aids that elite performers can use to enhance heat adaptation in a hot environment.

- Ice vests - aids thermoregulation
- Breathable clothing - allows heat to be radiated away
- Compression clothing -wears away sweat
- Energy drinks - osmolarity allowed to rehydrate athlete and replenish electrolytes

Examiner Comments
Many candidates simply listed hypoxic chambers - which are used to train in a simulated high altitude environment and not heat and therefore was not accepted as a correct answer.
3 marks awarded 1 for ice vests
1 benefit of doubt mark for clothing dissipating heat 1 for drink linked with electrolytes

Examiner Tip
Suggest requires candidates to put forward applied examples, a short statement helps justify their choice.
**Question 5**

Again this is a question that requires candidates to answer in two parts - first explaining the main characteristics and then suggesting adaptations.

Examiner Comments

Many candidates were unable to explain the basic characteristics of SAQ training. They were not able to link the explosive, short bursts and the changing direction nature of the training. Very few candidates identified/discussed resisted or contrast training as an SAQ method. Lots of candidates offered muscle fibre alteration (type 1 to type 2) as an adaptation rather than improvements in the recruitment of muscle fibres.

3 marks were awarded for this answer Characteristics - 1 mark for changing direction quickly Adaptation 1 mark for increased reaction time1 mark for increased fibre recruitment

Examiner Tip

In a question like this with two sections candidates are encouraged to use headings to help give their answers structure e.g. for this question candidates did use the headings - Characteristics and Adaptations and in many cases this allowed them to score maximum marks as they got the correct number of points down for each section of the question.
Question 6 (a)

This should have been a straight forward question, but many candidates lost marks by not being able to define the SMART principle. When marking responses 'Agreed' and 'Achievable' were accepted for 'A'.

Many candidates understood the SMART principle but struggled with the necessary vocabulary to explain the SMART principle without the repetition of the word being defined.

A lot of students used Tedium for the T.

2 marks were awarded for this response:
Specific - is too vague with no no expansion
Measurable has some expansion so 1 mark
Achievable is vague
R is wrong
T again has some expansion so 1 mark

Bullets can be used to help give your answer more structure and ensure all marks are attempted - but most questions will require further explanation or justification. Also please ensure that there is a clear understanding of the SMART principle.
6 Setting regular goals and reviewing progress are important aspects of long-term psychological preparation.

(a) Explain how the SMART pathway can be used to set effective goals.

The SMART pathway is used to set performance goals for athletes. To set effective goals, they must reach all 5 criteria.

They should be specific to the needs of the performer. For example, a swimmer who has been set the goal of being able to run a mile in under 5 minutes is not specific to the sport of that performer.

An effective goal must also be measurable. If the progress that is taken to achieve the present goal is not measurable, the progress may not be at a sufficient level. Thirdly, a goal must be accepted. This means that the athlete and the coach must accept that the goal is achievable by the performer. Also, a goal must be realistic. If a goal is unrealistic, the chances are that the athlete will not reach the goal and lose confidence. Finally, a goal must be given sufficient time in order to be achieved.

Specifi
Measurable
Achievable
Realistic
Time.

ResultsPlus
Examiner Comments
The space below the lined section can be used for planning if candidates want to check they will cover all the required points before beginning their response.
This is a well written answer that scored the maximum 5 marks, all areas of SMART are identified along with detailed explanation of their use in setting goals.

ResultsPlus
Examiner Tip
The lead in to a question such as this - gives the question a context - candidates should read it a number of times to ensure they fully understand what the question is asking.
Question 6 (b)

Candidates either clearly understood this term and scored well or appeared to have limited knowledge of the concept.

(b) Explain how elite performers use performance profiling in their long-term preparation.

Elite performers use performance profiling in their long-term preparation because it allows them to identify their strengths and weaknesses in both kinetic, technical, physiological, and psychological areas. They will then assess their performance profile against one that the coach has completed for them to make it more variable and less bias. They can then use this to target weaknesses by developing a training programme in order to gain adaptability and improve. They can compare their performance profile from the original one to one after a period of having to assess any improvements.

(Total for Question 6 = 9 marks)

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Examiner Comments

Many candidates referred to their own planning in their performance plan in Unit 4.

The mark breakdown is:
1 mark for identifying area to improve,
1 mark for intervention
1 mark for monitor change over time
1 benefit of the doubt mark - coach athlete relationship around the comparing of performance profiling to prevent bias.

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Examiner Tip

Use the specification as a checklist to check that lessons have covered all the key concepts identified in this unit.
**Question 7**

This question requires candidates to explain the elite sports pathway in the USA.

Examiner Comments

A well answered question. Candidates showed secure subject knowledge of this area and have been well taught. Only a small percentage failed to talk about ‘draft’ and ‘scholarships’. Most gained full marks.

Maximum marks were awarded for this answer - there were lots of points made.

However please not answers regarding high schools were marked as incorrect as they do not offer scholarships.

Examiner Tip

Check that the question is referring to elite sports pathways, many candidates made too many points about the base of the performance pyramid in the USA.
**Question 8**

This question examines candidates’ knowledge of the different elite sports systems as identified in the specification (USA, East Germany and Australia), but also allows them to use information they will have researched for their international study in Unit 4.

There is ample room for candidate to plan their answer to the extended question and we would encourage all to do this.

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*8 Discuss and compare the various systems for developing elite sports talent.

<table>
<thead>
<tr>
<th>Country</th>
<th>Methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>Talent ID</td>
</tr>
<tr>
<td></td>
<td>Performance</td>
</tr>
<tr>
<td></td>
<td>Olympic</td>
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<tr>
<td></td>
<td>School</td>
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<td>Development</td>
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<td></td>
<td>Institute</td>
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<td></td>
<td>Funding</td>
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</tbody>
</table>

In the USA we have a world class talent programme where we develop and train our athletes. World Class Talent is the first stage, where athletes are identified ideally of having the potential to achieve success. World Class Development is the second stage of the three travel pathways where the athletes are given training in order to improve. World Class Performance is where athletes are picked up by national squads and trained in national Instituted full time. A large amount of funding is done by the government. USA Sport is an organisation run by the government and organises the money from the private sector (businesses and charities) to spread over these three areas.

It also focuses mainly on improving the top level. World Class Performance. Sport England is similar to US Sport however it focuses more on improving and developing the second level. World Class Development. Pathways are P.T.O, P.S.C, and School.
In the USA their system is very different for developing elite athletes. They mainly do it through school and colleges. Talent is identified, then developed, and next they take a mini-Olympics to help develop team athletes in competitive situations.

Top talent then go to further education in high school where they are trained by elite coaches for four years while they do other education. After these four years, the athletes then enter into a draft system, where the team that came last the year before gets to pick them first. The athletes are then trained in the squad and they may make it pro to be a professional.

Sport is mainly funded by the private sector throughout, there is lots of advertising and the sports are very Americanised i.e. lots of reasons for viewing pleasure. In comparison to the UK the athletes have much more of a structured way of reaching it to professionals. The pathway is much clearer.

Back in Germany's pathway is the one that influenced all other pathways. It was done to prove capitalism is better than capitalist capitalism and acted as a shop window effect. The pathway is every child was scouted at an early age and those that showed potential went to boarding schools where they trained for 5 hours a day and education for 3 hours a day. The children were then entered into a mini-Olympics to train them for pressure of the real one and to identify good real talent. After this they then get chosen to go
On the whole candidates had secure knowledge on elite support systems (East Germany / Australia / USA the most popular). Weaker candidates just described and listed basic points for each system. Where candidates secured higher marks they showed more detail and compared / contrasted the support systems. On the whole students knew the difference between centralised / decentralised.

This example scores maximum marks. There is an overview of 4 different systems - with some attempt at comparison/analysis. There is an accurate description of the systems. The last paragraph gives some analysis about the countries and compares.
**8 Discuss and compare the various systems for developing elite sports talent.**

**(20)**

**Plan.**

East Germany - Spontaneous, National Centre, Schools 1425

Australia - Poor Young Stable, 1922, 1924, 1936

Centralized in the Centralbad (USA)

Elite sports talent development has been crucial in world sports since the 1936 Berlin Olympic Games where Germany used the Games as a "propaganda vehicle" to promote their ideals, in this case the political ideals of the Nazi party to the entire world.

After the Second World War, Germany was divided into an East and a West, which resulted in differing sporting agendas. East Germany was particularly focussed on winning, and promoted a "win at all costs" attitude, including Plan 1425 which involved systematic doping of all East German athletes, including Heike Dussler, who set 14 world records at Olympic competitions while under the influence of Plan 1425.

The East German model was to enroll children at a very young age, under 10, that showed the...
potential to become elite athletes. Testing was done by teams of doctors and coaches and included a battery of tests into all aspects of physiology. If a child was showing potential, they would enter a year-long program run by coaches which were observed and those shown to be making progress were placed into sports schools. From here children took up to 50 hours of training per week, and entered the annual 'Spotbird'. This was a small-scale Olympic Games to test the young athletes under pressure. Those who excelled were sent home and those that succeeded were sent to one of seven National Sports Institutes in preparation for international events.

This model influenced other such as the Australian Institute of Sports (AIS) model towards sport. After a poor showing in the 1976 Montreal Games, winning one silver and two bronze medals, the government decided an upward was needed. The AIS was formed and followed the fast German model closely, but eliminated the harsh work load and the illegal doping, instead focusing on the ratio of coaches and support personnel to athletes with over 50,000 coaches and staff to 4,000 athletes at regional and national centers of excellence. This resulted in a strong display
At the 1992 Barcelona games, when the country collected 27 medals in total.

Both East Germany and Australia have a centralised model of elite talent development, whereas only the USA has a decentralised model, but the USA has won far more medals than any other country, leaving support to a decentralised model of sport with no one governing body in charge.

Examiner Comments
Where a question asks to compare systems, we suggest that candidates consider at least two different sports systems. There is description of the systems but there is no compare or debate. There are brief descriptions of East German and Australian sports systems. The response does cover two different sports systems - though very similar and make brief reference to a 3rd in the last paragraph. A partial development of the point and some inaccuracies e.g. number of coaches. Answer scored 9 marks.

Examiner Tip
Discuss requires candidates to look for both positive and negative points.
**Question 9**

This question has an obvious link to the forthcoming London 2012 games, though examiners did also give credit if candidates used other examples. The better answers were balanced in covering both advantages and disadvantages. Weaker answers tended to focus on the advantages.

9 Discuss the positive and negative impacts on elite performers who are preparing for a major competition, such as the Olympic Games, in their own country.

(20)

Elite performers who are preparing for a major competition which experience positive and negative impacts if the competition is held in their own country.

From a physiological perspective, athletes will be used to the weather and climate in their own country therefore can focus on training instead of having to acclimatise and training in other countries to get the experience. This could provide them with an advantage over other athletes as they wouldn’t have to worry about adapting training to allow adaptations for the body to take place. As they haven’t needed to use training such as altitude their red blood cells and haemoglobin content would be lower and therefore less efficient compared to an athlete which has used that training before even though they are not competing at a high altitude.
For an athlete's psychological point of view, performing in their own country could cause increased arousal and anxiety levels leading to choking or a decrease in performance. The pressure from significant others or fans could cause nervousness. On the other hand, the athlete would have the backing of their fans and country, providing them with an increased motivation to win, which could lead to lower levels of anxiety as they are proud to be representing their country. Athletes would be able to use the self-efficacy model from verbal persuasion from their coaches, past accomplishments which they have achieved in their sport, in their own country to improve motivation and be able to focus on visualisation and imagery techniques to help them be successful again.

Athletes would already be used to the facilities they will be performing at and are able to train there, unlike other countries' athletes. The Canadian cycling team used the Velodrome for training and a competition this gives them an advantage over the GB team as they are used to the environment they will be competing in. The equipment
Candidates described positive and negatives of home advantage well. A large proportion talked about pressure for weakness and discussed the different psychological theories showing good subject knowledge. Some did not read the question correctly and rushed into irrelevant points on preparation such as altitude training and the physiological effects without seeing ‘home’.

Marks were awarded because:
There is a superficial attempt at looking at both sides - but limited in points made - 1 example given - Canadian cycling team???
The answer lacks depth.

Examiner Tip
Where a question asks for advantages and disadvantages, candidates need to consider a balance in the number of points they make and try to match both sides.
This is a question which scores in the higher bands.

9. Discuss the positive and negative impacts on elite performers who are preparing for a major competition, such as the Olympic Games, in their own country.

Pos - Home field, time zone, familiar, money from Govt, media, fans.
Neg - Stress, anxiety.

Major competitions do have their benefits such as global recognition and economic gains but however there are potential negatives aspects such as expectations on athletes.

Athletes competing in their own country allow them to not need to acclimatise to the environment, which they would if the global games was in a different country. Therefore athletes do not need to consider how they will cope with the temperature as there is no need for adaptation such as sweat production, earlier onset of sweat and reduction of electrolytes in sweat as the athlete will already have these adaptations. Time zones would also not be a problem whereas other athletes would need 5 days to acclimatise to the time zones. Therefore the athletes are available to have a consistent training programme and maintain the training intensity as they will not be training across the world or expose their athletes to different environmental factors.

Also when a country hosts global games it is usually followed by excessive funding, which in previous
Years would not have been the case. In London's 2012 case, the national lottery is funding many sports to help provide state of the art facilities and elite coaches for the athletes to try and gain success. This means athletes receive more time and utilise their time better in the building of their global games increasing the likelihood of improving performance.

However, there are potential negative impacts on elite athletes such as the high pressure for the athlete to be successful at the Global Games. The pressure can result in the athlete being over aroused and suffer from Anxiety whether it is cognitive, somatic or behavioural. This can be explained by Yerkes-Dodson law theory. This states an athlete is aroused but once performance will increase however after around 30% of peak performance will decrease; this would be when an athlete is "trying too hard." Hence, athletes want to achieve optimal arousal levels. This can be explained by the processing efficiency theory. If an athlete is too aroused their focus point will be narrow and information will not be taken in such as manager's instructions. Whereas if an athlete is not aroused enough too much is taken in such as the crowds driving chants.

However, by hosting global game athletes have home advantage which gives a 50%-64% likelihood of winning. Therefore should the athlete be able to cope with anxiety by using mental imagery.
This answer has a more balanced approach in the way the candidate has developed both positive and negative impacts. The candidate's argument runs out of steam a little at the end, but overall makes a good attempt. There is a good balance of positive and negative impacts and good use of technical terms and examples to support and justify the points the candidate uses.

Examiner Tip

Candidates should make the best use of the available writing space. If two pages are given, the examiner is looking for an in-depth response.
Paper Summary

The performance seen this series was very good, and candidates should be proud of what they have achieved.

Centres are reminded that:

questions will always attempt to reflect the contemporary issues in sport.

and that candidates should be encouraged to use examples from global sports competitions.

the specification is the key document when preparing candidates for the final examination.

questions will only focus on the key terms and concepts identified in the specification.
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