

# Mark Scheme (Results)

Summer 2014

GCE Physical Education (6PE03/01)  
Unit 3: Preparation for Optimum Sports  
Performance

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Question Number	Answer	Mark										
<b>1(a)</b>	<p>One mark for each point to a maximum of three. Do not allow fainting unless linked to thermoregulation.</p> <ol style="list-style-type: none"> <li>1. It is required for thermo regulation / prevent heat illness / fainting</li> <li>2. Body will lose fluid by sweating and respiration <u>which needs to be replaced</u></li> <li>3. A (1-2%) drop in hydration leads to a (10%) drop in performance</li> </ol> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>% loss in body weight</th> <th>% drop in performance</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>5</td> </tr> <tr> <td>2</td> <td>10</td> </tr> <tr> <td>4</td> <td>25</td> </tr> <tr> <td>5</td> <td>Potential failure to complete event</td> </tr> </tbody> </table> <ul style="list-style-type: none"> <li>○ If candidates include the wrong statistics – no marks awarded.</li> <li>○ A mark can be awarded if no statistics included.</li> </ul> <ol style="list-style-type: none"> <li>4. It is required to lubricate joints</li> <li>5. It is required to facilitate movement of nutrients / electrolytes around body</li> <li>6. It is required to facilitate movement of waste products around body</li> <li>7. Maintains optimum blood viscosity /or similar term</li> <li>8. Prevent cardiac drift / increase HR</li> <li>9. Maintain blood / plasma volume</li> <li>10. Dehydration causes a drop in concentration.</li> </ol>	% loss in body weight	% drop in performance	1	5	2	10	4	25	5	Potential failure to complete event	<b>(3)</b>
% loss in body weight	% drop in performance											
1	5											
2	10											
4	25											
5	Potential failure to complete event											

Question Number	Answer	Mark
<b>1(b)</b>	<p>One mark for each point to a maximum of four. Climate is too vague and needs to be linked to temperature, humidity or wind speed.</p> <ol style="list-style-type: none"> <li>1. Temperature of environment</li> <li>2. Humidity level of environment</li> <li>3. Wind strength in environment</li> <li>4. Differences in training and competition environment</li> <li>5. How long performer will be in the environment / duration of event</li> <li>6. Ability to re-hydrate during training/competition</li> <li>7. Danger of hyponatremia/drinking too much</li> <li>8. Needs of individual performer/ level of weight loss/fluid loss / sweat rate</li> <li>9. Replacement of electrolytes</li> <li>10. Intensity of activity</li> <li>11. How much acclimatisation has taken place</li> <li>12. Hydration level before event</li> <li>13. Effects of altitude on water loss</li> <li>14. Type of drink selected</li> <li>15. Timing of drinking strategy</li> <li>16. Type of event</li> <li>17. Frequency of training</li> </ol>	<b>(4)</b>

**(Total 7 marks)**

Question Number	Answer	Mark
2	<p>One mark for the external influence to a max of 3.  One mark for a strategy linked to the external influence to a maximum of three. The same strategy can be used for different external influences.  One mark for a justification of the chosen strategy to a maximum of three.  If a learner produces an answer that justifies the same strategy for more than one external influence marks can be awarded up to the maximum.</p> <p>External influences</p> <ol style="list-style-type: none"> <li>1. Home advantage</li> <li>2. Crowd effect/proximity of crowd</li> <li>3. Social facilitation/ presence of others</li> <li>4. Importance of competition</li> <li>5. Evaluation apprehension</li> <li>6. Environmental factors/ climate/weather factors</li> <li>7. Any other appropriate answers</li> <li>8. Coach</li> </ol> <p>Strategies</p> <ol style="list-style-type: none"> <li>9. Mental rehearsal</li> <li>10. Use of visualisation/imagery</li> <li>11. Use of self talk/positive talk</li> <li>12. Practise under similar conditions/simulation of external influences</li> <li>13. Use of relaxation techniques / centring / hypnosis</li> <li>14. Use of music</li> <li>15. Any other appropriate answers</li> </ol> <p>Justification</p> <ol style="list-style-type: none"> <li>16. To control anxiety</li> <li>17. To get used to winning</li> <li>18. To get in to optimal arousal zone</li> <li>19. To be ready to perform optimally</li> <li>20. Familiarity with environment</li> <li>21. Selective attention</li> <li>22. To motivate</li> <li>23. To increase confidence</li> <li>24. To relieve pressure</li> <li>25. To remove distractions / take mind off things</li> <li>26. Any other appropriate answers</li> </ol>	<b>(9)</b>

**(Total 9 marks)**

Question Number	Answer	Mark
<b>3</b>	<p>One mark for each point to a maximum of six Please note neither CHO loading or creatine loading are acceptable as they are pre-event strategies and do not receive a mark.</p> <ol style="list-style-type: none"> <li>1. Eat CHO (maximum of 2 marks from list below –mark awarded for points a-d below, not eat CHO)               <ol style="list-style-type: none"> <li>a) within 2 hour window of opportunity <u>must be linked</u> to CHO</li> <li>b) use CHO drinks</li> <li>c) use CHO gels</li> <li>d) high glycaemic index foods / complex CHO</li> </ol> </li> <li>2. drink fluids (maximum of 2 marks from list below; marks awarded for points e-g not drink fluids)               <ol style="list-style-type: none"> <li>e) use of sports drinks</li> <li>f) avoid caffeine</li> <li>g) avoid alcohol</li> </ol> </li> <li>3. Consume protein for example protein shakes / milk</li> <li>4. Sleep / rest.</li> <li>5. Cool down / warm-down</li> </ol>	<b>(6)</b>

**(Total 6 Marks)**

Question Number	Answer	Mark																				
<b>4</b>	<p>Maximum of four marks for adaptations. Maximum of four marks for benefit; each benefit must be linked to the correct adaptation</p> <table border="1"> <thead> <tr> <th>Adaptation</th> <th>benefit</th> </tr> </thead> <tbody> <tr> <td>Increase in rate of fibre recruitment</td> <td>Increase speed / strength / power of movement</td> </tr> <tr> <td>Increase in number of fibres recruited</td> <td>Increase in rate of force/production /power Improved co-ordination</td> </tr> <tr> <td>Improves bones density / strength</td> <td>Reduce injury risk</td> </tr> <tr> <td>Change from type I to type II muscle fibres / increase fast twitch fibres</td> <td>Increase speed of movement and /or anaerobic capability / power / strength</td> </tr> <tr> <td>Stronger ligaments and tendons</td> <td>Reduce injury risk</td> </tr> <tr> <td>Increase elasticity of fibres / tendons</td> <td>Potential for greater flexibility / reduce injury risk</td> </tr> <tr> <td>Improve neuromuscular link</td> <td>Improve co-ordination</td> </tr> <tr> <td>Increased development of synergists</td> <td>Increase in co-ordination</td> </tr> <tr> <td>Hypertrophy</td> <td>Increase force / strength / power / speed anaerobic capability</td> </tr> </tbody> </table>	Adaptation	benefit	Increase in rate of fibre recruitment	Increase speed / strength / power of movement	Increase in number of fibres recruited	Increase in rate of force/production /power Improved co-ordination	Improves bones density / strength	Reduce injury risk	Change from type I to type II muscle fibres / increase fast twitch fibres	Increase speed of movement and /or anaerobic capability / power / strength	Stronger ligaments and tendons	Reduce injury risk	Increase elasticity of fibres / tendons	Potential for greater flexibility / reduce injury risk	Improve neuromuscular link	Improve co-ordination	Increased development of synergists	Increase in co-ordination	Hypertrophy	Increase force / strength / power / speed anaerobic capability	<b>(8)</b>
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**(Total 8 marks)**

Question Number	Answer	Mark
<b>5</b>	<p>Definition / or equivalent wording (1 mark)</p> <ol style="list-style-type: none"> <li>1. A fundamental drive to succeed or persist with a task</li> </ol> <p>Explanation (up to 5 marks)</p> <ol style="list-style-type: none"> <li>2. Nach performers are highly motivated</li> <li>3. Nach performers are risk takers</li> <li>4. Nach performers like feedback on their performance</li> <li>5. Nach perform better when being evaluated</li> <li>6. Nach are not troubled by fear of failure</li> <li>7. Nach seek success and pride by high ranking victories</li> <li>8. Naf performers who are motivated to avoid failure</li> <li>9. Naf performers take the easy option</li> <li>10. Naf perform worse when being evaluated</li> <li>11. Naf give up easily</li> <li>12. Naf have drive to avoid shame and humiliation</li> </ol>	<b>(6)</b>

**(Total 6 marks)**

Question Number	Answer	Mark
<b>6</b>	<p>One mark per point to a maximum of eight</p> <ol style="list-style-type: none"> <li>1. Talent ID in schools</li> <li>2. Potential elite athletes send to sports boarding schools</li> <li>3. Full time coaches worked with young athletes</li> <li>4. Annual Spartakiad games / mini Olympics to further test athletes</li> <li>5. Progress constantly monitored</li> <li>6. Use of elite sports institutes /centres of excellence / top class facilities</li> <li>7. State funded and controlled system</li> <li>8. Appliance of sports science to support athletes</li> <li>9. Supportive medicine / drugs given to athletes</li> <li>10. 'Shamateur' support of athletes through trade union/military teams and sports centres</li> <li>11. Centralised</li> <li>12. Long hours of training</li> </ol>	<b>(8)</b>

**(Total 8 marks)**

Question Number	Answer	Mark
7	<p><b>centralised sports system - maximum of three marks</b></p> <ol style="list-style-type: none"> <li>1. Centralised power/control comes from one source</li> <li>2. Normally linked to state/government control of sport</li> <li>3. Public sector funding dominates/funding from central fund/funding direct from government/state</li> <li>4. Examples include East Germany/China/Soviet Union/France / Australia</li> <li>5. Often institute model</li> <li>6. All the athletes in one place / competition between athletes</li> <li>7. Best facilities and coaches in one venue</li> <li>8. Athletes may need to relocate / leave home</li> </ol> <p><b>de-centralised sports system – maximum of three marks</b></p> <ol style="list-style-type: none"> <li>9. De-centralised power/control comes from many sources</li> <li>10. Linked to league/club control</li> <li>11. Private sector funding dominates/funding from many sources/funding from commercial sector</li> <li>12. Examples include USA / UK / Australia</li> <li>13. Different locations / more localised provision</li> <li>14. Distribution of resources / more coaches to serve the number of localities</li> <li>15. More expensive</li> <li>16. Don't have to move away from home / don't have to change lifestyle</li> </ol>	<b>(6)</b>

**(Total 6 marks)**

Question Number	Indicative content	
<b>8</b>	<p>These are examples of the sort of responses that candidates may include but other appropriate responses are acceptable:</p> <ul style="list-style-type: none"> <li>• Sport now a 12 month season – very limited opportunity for close season</li> <li>• TV and commercial pressure for more matches and competitions</li> <li>• Traditional theory of complete rest and recovery now not available for many athletes</li> <li>• Professional clubs using aggressive rehabilitation strategies to get players ready to play in days</li> <li>• Professional tours that run into each other</li> <li>• Opportunity to play in traditional off season in other hemisphere so back to back seasons</li> <li>• Full time athletes – long hours of training</li> <li>• Reference to the increased use of technology and sports science which is challenging traditional views of fatigue and recovery</li> <li>• Increased fatigue syndrome/ players never fully fit</li> <li>• Many performers playing with LT injuries</li> <li>• Over reliance on pain killers e.g. 70% of players at FIFA World Cup taking pain drugs</li> <li>• More money/income for athletes facing short careers</li> <li>• Pressures on coaches to play players when injured</li> <li>• More funding and research into recovery strategies</li> <li>• Use of techniques such as hydro therapy/cryo therapy to speed recovery</li> </ul>	
Level	Mark	Descriptor
	0	No rewardable material
<b>Level 1</b>	<b>1 – 5</b>	<ul style="list-style-type: none"> <li>• A limited discussion that includes descriptive comment and/or lists, with minimal or no evaluation of pressures on elite sport performers. This may include the concept of recovery and the challenges it places on athletes and coaches. This may not cover both athletes and coaches</li> <li>• Responses are appropriate; though may include many factual inaccuracies and irrelevancies.</li> <li>• The response is poorly structured, may have frequent errors in spelling, punctuation and grammar.</li> </ul>
<b>Level 2</b>	<b>6 – 10</b>	<ul style="list-style-type: none"> <li>• A basic discussion that includes mostly descriptive comment, and limited evaluation of pressures on elite sport performers. This may include the concept of recovery and the challenges it places on athletes and coaches. This may not cover both athletes and coaches</li> <li>• Responses are appropriate; though may include some factual inaccuracies and irrelevancies.</li> <li>• The response has a basic structure, may have frequent errors in spelling, punctuation and grammar.</li> </ul>
<b>Level 3</b>	<b>11 – 15</b>	<ul style="list-style-type: none"> <li>• A good discussion that includes some evaluation of pressures on</li> </ul>

		<p>elite sport performers. This will include the concept of recovery and the challenges it places on athletes and coaches. This may not cover both athletes and coaches</p> <ul style="list-style-type: none"> <li>• Responses are relevant and appropriate with few factual inaccuracies and irrelevancies.</li> <li>• The response has a sound structure, may have some errors in spelling, punctuation and grammar.</li> </ul>
<b>Level 4</b>	<b>16 - 20</b>	<ul style="list-style-type: none"> <li>• A comprehensive discussion that coherently and fully evaluates the pressures on elite sport performers. This will include the concept of recovery and the challenges it places on athletes and coaches. This will cover both athletes and coaches</li> <li>• Responses are insightful and realistic.</li> <li>• The response has clear and effective structure, may have minimal errors in spelling, punctuation and grammar.</li> </ul>

**(Total 20 marks)**

Question Number	Indicative content
9	<p>Please note the question focuses on the <b>reasons and issues</b> of supplementation and not the factual detail of different supplements. For a candidate to access level 3 and above they need to debate or discuss issues. Typically candidates that cover a range of supplements, even if in great detail, will fall in to band 2.</p> <p><b>Reason for taking</b></p> <ul style="list-style-type: none"> <li>• Pressure to win from media / sponsors / coach / peers / fans</li> <li>• Athlete / event sponsored by supplement company</li> <li>• Financial incentives</li> <li>• Small margin between winning / losing / competitive edge</li> <li>• Aids recovery</li> <li>• Train for longer / harder</li> <li>• Rivals taking supplements</li> </ul> <p><b>Issues</b></p> <ul style="list-style-type: none"> <li>• Legality / WADA</li> <li>• Taking away from natural talent</li> <li>• Financial constraints</li> <li>• Side effects / health issues</li> <li>• Not knowing what taking</li> <li>• Not knowing long term health effects</li> <li>• Can lead to over dependence / addiction</li> <li>• Morals</li> <li>• What is the difference between a supplement and a drug?</li> </ul>

Level	Mark	Descriptor
	0	No rewardable material
<b>Level 1</b>	<b>1 – 5</b>	<ul style="list-style-type: none"> <li>• A limited discussion that includes descriptive comment and/or lists, with minimal or no evaluation of why elite performers might use supplementation. This may not highlight potential issues with supplementation.</li> <li>• Responses are appropriate; though may include many factual inaccuracies and irrelevancies.</li> <li>• The response is poorly structured, may have frequent errors in spelling, punctuation and grammar.</li> </ul>
<b>Level 2</b>	<b>6 – 10</b>	<ul style="list-style-type: none"> <li>• A basic discussion that includes mostly descriptive comment, and limited evaluation of why elite performers might use supplementation. This may not highlight potential issues with supplementation.</li> <li>• Responses are appropriate; though may include some factual inaccuracies and irrelevancies.</li> <li>• The response has a basic structure, may have frequent errors in spelling, punctuation and grammar.</li> </ul>

<b>Level 3</b>	<b>11 - 15</b>	<ul style="list-style-type: none"><li>• A good discussion that includes some evaluation of pressures on why elite performers might use supplementation. This will highlight some basic potential issues with supplementation.</li><li>• Responses are relevant and appropriate with few factual inaccuracies and irrelevancies.</li><li>• The response has a sound structure, may have some errors in spelling, punctuation and grammar.</li></ul>
<b>Level 4</b>	<b>16 - 20</b>	<ul style="list-style-type: none"><li>• A comprehensive discussion that coherently and fully evaluates the pressures on why elite performers might use supplementation. This will fully highlight potential issues with supplementation.</li><li>• Responses are insightful and realistic.</li><li>• The response has clear and effective structure with minimal errors in spelling, punctuation and grammar.</li></ul>

