

# Mark Scheme (Results)

June 2011

GCE Physical Education (6PE01)  
Paper 01

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## General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

Question Number	Answer	Mark
<b>1(a)</b>	<ol style="list-style-type: none"> <li>1. Issues that are of relevance at the <u>current</u> time / for a specific group/apparent examples can be accepted to illustrate the definition.</li> <li>2. Sedentary lifestyle is one that is not physically active.</li> </ol>	(2)

Question Number	Answer	Mark
<b>1(b)</b>	<p>1 mark for justification of it as a concern</p> <ol style="list-style-type: none"> <li>1. Aging population is a concern because the elderly are often seen as being less active and less healthy</li> <li>2. consequently a <u>drain on the economy</u> / expense of NHS / pressure on NHS, rather than contributing to it.</li> </ol> <p>Max of 3 marks for initiatives.</p> <ol style="list-style-type: none"> <li>3. Promotion of lifetime sports activities / examples of lifetime sports</li> <li>4. Programming of specific times</li> <li>5. Concessions / free swimming / similar</li> <li>6. Taster days</li> <li>7. Other localised initiatives e.g.</li> <li>8. 50+</li> <li>9. Aging Well</li> </ol>	(4)

Question Number	Answer	Mark
1(c)	<p>Max of 3 mark for the description of the concern.</p> <ol style="list-style-type: none"> <li>1. Coronary heart disease (CHD) is the end result of the accumulation of plaques and fatty deposits within the walls of the arteries that supply the myocardium.</li> <li>2. Consequently these blood vessels begin to clog / reduced lumen / thinning and passage through them becomes restricted.</li> <li>3. Results in an increase in blood pressure and reduced elasticity of the arterial walls.</li> <li>4. Can lead to the heart being starved of oxygen leading to heart attacks.</li> </ol> <p>Max of 3 marks for the link between the concern and being sedentary</p> <ol style="list-style-type: none"> <li>5. A lack of physical activity would enable the deposits to build up /</li> <li>6. sedentary lifestyle is also associated or linked to being overweight / poor diet / lower HDL vs higher LDL</li> <li>7. would further increase the risk of increased blood pressure, clots and blockages associated with coronary heart disease.</li> <li>8. A lack of physical activity would reduce the elasticity and strength of the arterial walls.</li> <li>9. Exercise will increase arterial elasticity and help "flush" the arteries</li> <li>10. Sedentary lifestyle also increases the likelihood of other hypokinetic disease such as obesity etc.</li> </ol>	(4)

Question Number	Answer	Mark
<b>2(a)</b>	<ol style="list-style-type: none"> <li>1. Metabolic rate is the speed at which the body utilises energy.</li> <li>2. Energy used is in calorific content, increasing this helps to create a calorific deficit / more energy used.</li> <li>3. The faster the body utilises energy the more energy will be used at rest and fat is potential energy.</li> <li>4. The bodies most used energy source at rest.</li> <li>5. Improves the somatotype i.e. muscle mass increase at same time of fat loss</li> </ol>	(2)

Question Number	Answer	Mark
<b>2(b)</b>	<p>Factors that will raise your MR</p> <ol style="list-style-type: none"> <li>1. Eating frequent meals. NB "Regular" is not accepted unless it clearly refers to frequent</li> <li>2. eating requires energy in order to digest / small meals does not provide a calorific surplus.</li> <li>3. Exercise</li> <li>4. Exercise requires energy and therefore speeds up the energy usage / conversion / digestive system working for longer so using more energy</li> <li>5. Increased muscle mass</li> <li>6. Muscle is fat hungry and therefore greater energy is required in order to fuel the muscles, even at rest.</li> <li>7. Age (up to peak physical maturation, mid 20's)</li> <li>8. The body requires more energy to fuel growth.</li> <li>9. Getting pregnant</li> <li>10. Being pregnant requires energy in order to sustain the changes to the mothers body and also the growth of the developing baby.</li> <li>11. Environment</li> <li>12. Hotter or cold environments require the body to use energy in order to return / maintain the body to its optimum temperature</li> <li>13. Hormones</li> <li>14. Stress hormones such as adrenalin and noradrenalin</li> <li>15. Smoking/Caffeine</li> <li>16. Smoking / caffeine will act as a stimulant and therefore will speed up metabolic processes.</li> <li>17. Growth / Height</li> <li>18. Energy is required to grow / being bigger / taller will require a faster metabolic rate usually by virtue of an increased muscle mass.</li> </ol>	(6)

Question Number	Answer	Mark
3 (a)	<p>No marks should be awarded for the naming of the sport, however failure to identify a sport will prevent any further marks being awarded for 3a. The fitness components listed MUST be linked and considered as important for the named sport.</p> <p>Max of 4 for 4 components and max of 4 for 4 definitions. e.g. A sprint swimmer would require;</p> <ol style="list-style-type: none"> <li>1. Power,</li> <li>2. Strength x speed</li> <li>3. flexibility,</li> <li>4. Range of movement at a joint / ROM</li> <li>5. Speed</li> <li>6. Time taken to cover a distance</li> <li>7. anaerobic capacity.</li> <li>8. Duration of time that maximum output can be sustained for.</li> <li>9. Agility</li> <li>10. Changing direction at speed with control</li> <li>11. (Localised) Muscular endurance</li> <li>12. Ability of a muscle / group to exert force over a sustained period</li> <li>13. Dynamic strength</li> <li>14. Ability to exert a significant force for 2 – 4 minutes</li> <li>15. Maximal strength</li> <li>16. Greatest force that can be exerted once.</li> <li>17. VO2 Max/ Aerobic fitness</li> <li>18. Greatest amount of O2 that can be taken in and used per minute per KG of bodyweight.</li> <li>19. Balance</li> <li>20. Ability to maintain control (static or dynamic) of body mass</li> <li>21. Body composition</li> <li>22. Appropriate somatotype / Amount of body mass made up from muscle, fat, bone.</li> <li>23. Reaction time</li> <li>24. Time taken from the presentation of a stimulus to resulting appropriate muscular action.</li> <li>25. Coordination</li> <li>26. Linking muscular movements in sequence with success</li> </ol>	(8)

Question Number	Answer	Mark
<b>3 (b)</b>	<p>NB Tests must be accompanied by appropriate components of fitness.</p> <ol style="list-style-type: none"> <li>1. Power, - Standing sergeant jump</li> <li>2. Flexibility, - Sit and reach test</li> <li>3. Speed - 30m flying sprint</li> <li>4. Anaerobic capacity, - Anstrad / wingate test</li> <li>5. CVE – 12 minute cooper run / Harvard Step Test</li> <li>6. Max strength – 1 Rep Max</li> <li>7. Dynamic Strength – 10 Rep Max</li> <li>8. Localised muscular endurance – 25 Rep Max / Abdominal conditioning test</li> <li>9. VO2Max – Gas analysis / NCF Multi stage Fitness test</li> <li>10. Reaction Times – Ruler Drop</li> <li>11. Static Balance – Ruler Drop</li> <li>12. Coordination – Juggling / alternate wall ball toss.</li> <li><b>13.</b> Agility – Illinois Agility test.</li> </ol>	(3)

Question Number	Answer	Mark
<b>3 (c)</b>	<ol style="list-style-type: none"> <li>1. Adaptation is defined as a long term / permanent / change brought about by repeated stimulus/ training / exposure to an environment</li> </ol> <p>NB Ensure that the adaptations provided are <u>STRUCTURAL</u> ones.  NB Increase in muscle size is too vague (increase could be due to fat etc, increase in muscle mass is acceptable.)</p> <ol style="list-style-type: none"> <li>2. Power, - Myofibril Hypertrophy / Changes of muscle fibre characteristics to type IIa, or IIb</li> <li>3. flexibility, - Increased length / number of sarcomeres</li> <li>4. Agility - Myofibril hypertrophy / Changes of muscle fibre characteristics to type IIa, or IIb</li> <li>5. Speed - Myofibril hypertrophy / Changes of muscle fibre characteristics to type IIa, or IIb</li> <li>6. anaerobic capacity, - muscle /Myofibril/ hypertrophy / increased size of PC stores / Changes of muscle fibre characteristics to type IIa, or IIb</li> <li>7. CVE – Cardiac hypertrophy / vascularisation / increase red blood cell production / Changes of muscle fibre characteristics to type 1 or IIa, / lower body fat</li> <li>8. Localised muscular endurance – increased numbers of myoglobin / mitochondria / Changes of muscle fibre characteristics to type to 1 or IIa, / lower body fat</li> </ol>	(4)

Question Number	Answer	Mark												
4	<p>Tasks</p> <ul style="list-style-type: none"> <li>• Name and define the principles of training.</li> <li>• Identify the differing needs of the two clients, - a trained and an untrained performer.</li> <li>• Apply the principles to the differing needs of each client</li> </ul> <p>Principles of training;</p> <p>Specificity Training appropriate to your sport and your own needs</p> <p>Overload Requiring the body to work harder than what it has become accustomed to.</p> <p>Reversibility Not training will lead to a reversal / loss of training progress</p> <p>Recovery Time allowed for growth, repair, super compensation</p> <p>FITT / Thresholds</p> <table border="0"> <tr> <td>F</td> <td>Frequency</td> <td>How often you train</td> </tr> <tr> <td>I</td> <td>Intensity</td> <td>How hard you train</td> </tr> <tr> <td>T</td> <td>Time</td> <td>The duration of training sessions</td> </tr> <tr> <td>T</td> <td>Type</td> <td>The method of training used</td> </tr> </table> <p>Variance - Using a variety of training methods in order to avoid boredom</p> <p>Overtraining - Training before full recovery has occurred.</p> <p>Clients needs and application</p> <p><b>Specificity</b> The trained athlete will require a greater and more specific approach, will be aware of strengths and weaknesses in previous performances and will need to target them appropriately / breaking performance down into more segments. An untrained athlete will be able to be more generic in their approach, focusing on fitness components rather than elements of a fitness components or whole skills rather than aspects of a skill.</p> <p><b>Overload</b> The trained athlete will be more aware of their training thresholds and how quickly / frequently they can overload. Overload may be slower for the trained athlete as they are nearer to their maximum potential. The untrained athlete will potentially be able to cope with a more rapid application of overload particularly earlier on as more efficient neuromuscular pathways are created.</p>	F	Frequency	How often you train	I	Intensity	How hard you train	T	Time	The duration of training sessions	T	Type	The method of training used	(12)
F	Frequency	How often you train												
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T	Type	The method of training used												

**Reversibility**

As the trained athlete is training more frequently then there is the possibility that they will experience reversibility sooner than the untrained athlete.

Degrees of fitness will be lost equally by both clients however in terms of training sessions missed as compared to calendar of training days lost.the trained athlete will be able to regain lost fitness quicker than the untrained athlete

**Recovery**

The trained athlete will have the capacity too recover from training quicker than the untrained athlete who will be more susceptible to DOMs etc.

**Thresholds**

Trained athlete will be able to train more frequently, at a higher intensity and often for a greater duration.

**Overtraining**

Both athletes will have the capacity to overtrain, the trained athlete because they are training more frequently etc, the untrained athlete because they are new and potentially over enthusiastic.

Level	Mark	Descriptor
	0	No rewardable material
<b>Level 1</b>	1-3	<p>Content</p> <p>Several principles will be listed and defined, some definitions may be limited and a little confused</p> <p>No application of these to the clients needs</p> <p>Characteristics</p> <p>A poorly structured answer with incorrect spg. Incorrect use of terminology / technical language.</p>
<b>Level 2</b>	4-6	<p>Content</p> <p>Principles will be identified and correctly defined</p> <p>The differing needs of the clients will be identified but at a basic level</p> <p>Characteristics</p> <p>A basic structure will be evident, there will be some use of technical terms but there may be some errors in spg.</p>
<b>Level 3</b>	7-9	<p>Content</p> <p>Principles will be identified and correctly defined / definitions might be provided implicitly but the level of answer and application provided will support this.</p> <p>The differing needs of the clients will be identified in more detail with some application of the principles to the needs.</p> <p>Alternatively the principles will be well applied to one candidate only.</p> <p>Characteristics</p> <p>The answer will be factually strong but perhaps lack the necessary analysis and discussion to score the highest marks.</p> <p>The answer will have a clear structure, there will be a sound use of terminology, with satisfactory spg.</p>
<b>Level 4</b>	10-12	<p>Content</p> <p>Principles will be identified and correctly defined / definitions might be provided implicitly but the level of answer and application provided will support this.</p> <p>Principles will be discussed in detail with a greater range of principles being applied</p> <p>The differing needs of the clients will be accurately identified</p> <p>The principles will be applied accurately to the needs of both clients.</p> <p>Characteristics</p> <p>This a well structured answer with clear and accurate use of terminology.</p> <p>Information will be presented clearly, concisely and be relevant covering all key issues.</p>

Question Number	Answer	Mark
<b>5a</b>	<p>Max of 4 for reasons codification followed the industrial revolution.</p> <p>1. Codification is the establishing of a common and accepted set of rules / code by which a sport should be played.</p> <p>Industrial revolution brought about;</p> <p>2. Urbanisation led to large areas of populations / newly developed towns</p> <p>3. Transport revolution provided the ability to play against more teams than in the past.</p> <p>4. Regional games had many different interpretations</p> <p>5. Confined space / loss of common land requiring a set number of players / move from participation based to spectator based.</p> <p>6. Initially limited time to play,/ shift patterns / 1/2 day act leading to the need for national rules</p> <p>7. Need for, and opportunity to have, leagues established</p> <p>8. Led to need for national sets of rules</p> <p>9. Development of education /literacy meant people could now understand rules</p> <p>10. Less influence of church/ holidays became industrial holidays</p> <p>11. Reduction in violence/ need for fit workforce/banning of animal sports</p>	<b>(5)</b>

Question Number	Answer	Mark
<b>5b</b>	<p>1. Public school boys had enjoyed the games that were particular to their schools they would have taken the games and the rules with them to university.</p> <p>2. Not being possible to play several different versions of games, the different versions would have been "rounded" off to establish one common or standard game and set of rules. / "Melting Pot"</p> <p>3. Universities often credited with establishing the early forms of the NGB's</p> <p>4. Oxbridge were the first to make an attempt to codify sports / Formalised set of rules established.</p> <p>5. development of varsity games</p> <p>6. Oxford / Cambridge blues / Graduates defusing games through the country / empire / old boys</p>	<b>(5)</b>

Question Number	Answer	Mark
<b>6a</b>	<ol style="list-style-type: none"> <li>1. Urbanisation resulted in less space</li> <li>2. Forced a change from participator base to spectator base / leading to a need for stadia /</li> <li>3. Transport revolution allowed for regular fixtures which facilitated payment of players</li> <li>4. Patrons / factory owners developing teams</li> <li>5. Spectators charged to watch / Commercial opportunity from numbers of spectators / entrepreneurs / business opportunity / factory team development / ticket revenue</li> <li>6. Success / winning brought in more spectators therefore more revenue.</li> <li>7. Belief that by training more performances would improve</li> <li>8. Culture of "compensating" better players to play replaced with open payment</li> <li>9. Need to compensate workers for time lost playing sport</li> <li>10. Split in the Rugby codes creating RFL</li> <li>11. Rationalised leisure time / Rise in personal income</li> <li>12. Codification brought about accepted rules that were understood / facilitated leagues / competitions / desire to win</li> <li>13. Media created an affiliation with teams for spectators and increased the need to win.</li> </ol>	(5)

Question Number	Answer	Mark
<b>6b</b>	<ol style="list-style-type: none"> <li>1. 1976 Games in Montréal had almost bankrupt the city</li> <li>2. Cost of security post 1972</li> <li>3. US Federal government &amp; California state government withdrew their funding for the games scheduled for 1984 in Los Angeles</li> <li>4. The Olympic committee, led by Peter Uberroth sold the TV rights for the games to just one company</li> <li>5. Exclusive rights for TV sold = increased revenue.</li> <li>6. The commercial model that was used was copied for subsequent games / sporting events</li> <li>7. They also sold the festoon (the 5 ring logo) to commercial sponsors</li> <li>8. golden triangle</li> <li>9. Consequently sport had emerged as a commodity</li> <li>10. TOP sport sponsors / use of Coco Cola and Macdonalds as major sponsors</li> <li>11. First games to make a profit</li> <li>12. Commercial model created was copied for subsequent sporting events</li> </ol>	(5)

Question Number	Answer	Mark
<b>7</b>	1. Foundation level / Grass roots 2. Participation level / Recreation 3. Competition level / Performance 4. Elite level 5. The elite level is generally considered to be 5% that of the Foundation level / link to a broader base and success at the top / role models at the elite level inspire more at the bottom levels.	(4)

Question Number	Answer	Mark
<b>8a</b>	<ol style="list-style-type: none"> <li>1. Not participating / under represented in physical activity in as great a number as other societal groups.</li> <li>2. Women</li> <li>3. Ethnic minority groups</li> <li>4. Very young</li> <li>5. Elderly</li> <li>5. Poor / low income / unemployed</li> <li>6. Physical disability / disabled.</li> </ol>	(5)

Question Number	Answer	Mark
<b>8b</b>	<p>NB 3 marks can be awarded for either 3 different reformative policies for 3 different target groups or for 1 policy appropriately applied to 3 different groups.</p> <ol style="list-style-type: none"> <li>1. Women / targeted sessions in leisure centres / women only evenings.</li> <li>2. Ethnic minority / again targeted sessions to allow Asian women the opportunity to perform</li> <li>3. Young / specific advertising campaigns, PE programmes / role of education / Schools sports partnerships / taster sessions, provision of lifetime sports</li> <li>4. Old / specific advertising campaigns, / taster sessions, provision of lifetime sports / 50+ / Aging Well</li> <li>5. Low income / unemployed / concessions, cheaper entrance fees, reduced admission rates, specialist facilities and equipment / open days/taster session, subsidised travel / transport programmes.</li> <li>6. Disabled / Increased provision for disadvantaged groups</li> <li>7. Any other specific / named current initiative.</li> </ol>	(3)

Question Number	Answer	Mark
9	<p>Why Mechanics Success / failure History of TI from a scouting network to a more scientific approach.</p> <ul style="list-style-type: none"> <li>• Generic point that TI aids national recognition / shop window / international success / winning medals / national pride / a sense of nationhood</li> <li>• Increase in funding in elite sport has resulted in more money and time to develop Talent ID programmes</li> <li>• But funding needs to be targeted/winning medal £3million/ need to get in 10 thousand hours</li> <li>• Talent ID used to fast track into elite sports systems and institutes</li> </ul> <p>East Germany (why &amp; how)</p> <ul style="list-style-type: none"> <li>• Post WW2 need for international recognition e.g. East Germany</li> <li>• East German</li> <li>• Clash of ideologies/ attempts to show that communism was better than capitalism (East vs West)</li> <li>• a series of tests and screening of 7 year olds</li> <li>• results were analysed by the National Sports Federation</li> <li>• those that scored well were invited to attend local training centres several times a week</li> <li>• if progress was good then at 10 years of age they would be transferred to a sports boarding school, the transfer was virtually compulsory</li> <li>• While at the schools students would have 2 hours of academic study and 6 hours of sports coaching and physical training each day.</li> </ul> <p>Australia (why &amp; how)</p> <ul style="list-style-type: none"> <li>• Australia's disappointing performance at the 1976 Olympics led to the Australian government reviewing its elite sports system.</li> <li>• Australian Institute of Sport (AIS) opened in 1981, works in a similar way to the East</li> <li>• Germany high performance centres</li> <li>• the Australian Institute of Sport (AIS) was created as a central focus for identifying and developing elite/ world class facilities and support services</li> <li>• the AIS has 35 sport programs in 26 sports</li> <li>• AIS provides scholarships for future world-beaters</li> </ul> <p>UK Late starter/ reliance on traditional methods scouting</p>	(3)

	<p>trials for most of 20<sup>th</sup> century Success of Australian system in 200 and failure of GB in 90's led to a comparative review of talent ID UK Sport bought in Sport Search from Australia – piloted in range of schools Most NGB's also began developing talent ID schemes in run up to major games – Feed into UKSI network and academies Recent success on talent transfer – taking athletes from one sport to another Schemes now include pitch 2 podium aimed at young footballers being released from football clubs Giant/Tall appeal / Girls for Gold/</p> <ul style="list-style-type: none"><li>• Institutes exist(ed) for identifying and developing elite/ world class facilities and support services</li><li>• They provide top level coaching; access to equipment, sport sciences and medicine facilities; accommodation, meals and travel; and assistance with education and career planning.</li><li>• Increase in funding allows TI to take place</li><li>• Contemporary view / ie LTAD programme</li></ul>	
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Level	Mark	Descriptor
	0	No rewardable material
<b>Level 1</b>	1-3	<p>Content</p> <p>Will refer to just one country or even talk generically about TI. May not identify the country being referred to.</p> <p>Characteristics</p> <p>A poorly structured answer with incorrect spg. Incorrect use of terminology / technical language.</p>
<b>Level 2</b>	4-6	<p>Content</p> <p>TI may be identified; again reference to one country only but the country is likely to be identified. Reference to TI is likely to be focussed around why there is a TI programme rather than identifying what is being done for lower band answers, with higher band answers identifying both.</p> <p>Characteristics</p> <p>A basic structure will be evident, there will be some use of technical terms but there may be some errors in spg.</p>
<b>Level 3</b>	7-9	<p>Content</p> <p>TI will be identified. Reasons why TI is undertaken will be clarified as will the process of identifying the talent and clearly identifying the strategies being used to nurture/develop the talent. Comparisons could be made between two identified countries.</p> <p>Characteristics</p> <p>The answer will be factually strong but perhaps lack the necessary analysis and discussion to score the highest marks. The answer will have a clear structure, there will be a sound use of terminology, with satisfactory spg.</p>
<b>Level 4</b>	10-12	<p>Content</p> <p>TI will be identified. Reasons why TI is undertaken will be clarified as will the process of identifying the talent and clearly identifying the strategies being used to nurture/develop the talent. Comparisons will be made between at least two identified countries.</p> <p>Characteristics</p> <p>This a well structured answer with clear and accurate use of terminology. Information will be presented clearly, concisely and be relevant covering all key issues.</p>

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