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# **GCE MARKING SCHEME**

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**SUMMER 2016**

**PHYSICAL EDUCATION - PE4  
1314/01**

## **INTRODUCTION**

This marking scheme was used by WJEC for the 2016 examination. It was finalised after detailed discussion at examiners' conferences by all the examiners involved in the assessment. The conference was held shortly after the paper was taken so that reference could be made to the full range of candidates' responses, with photocopied scripts forming the basis of discussion. The aim of the conference was to ensure that the marking scheme was interpreted and applied in the same way by all examiners.

It is hoped that this information will be of assistance to centres but it is recognised at the same time that, without the benefit of participation in the examiners' conference, teachers may have different views on certain matters of detail or interpretation.

WJEC regrets that it cannot enter into any discussion or correspondence about this marking scheme.

**GCE Physical Education**  
**SUMMER 2016 MARK SCHEME**

**SECTION A**

1. Performance analysis is playing an increasingly important role within sport and coaches are becoming ever more sophisticated in the strategies they are employing to analyse and subsequently provide feedback.

(a) Explain the limitations of solely using real-time observation to analyse sporting performance [4]

Level 1      1-2      Candidates lists some of the limitations of using real-time observation but there is little explanation.

Level 2      3-4      Candidates explains in detail limitations of using real-time observation in order to help refine sporting performance.

**The following is indicative of the material that might be included in the answer.**

- It is very difficult, if not impossible, for coaches to observe and remember all the key events occurring within a training session or match using just their powers of observation. This is why using performance analysis as a discipline within sport is developing at a considerable pace.
- Problems with retaining and recalling information that coaches have observed during games. Studies suggest that coaches can only recall between 30-50% of the key performance factors they had witnessed within a game due to the way in which our memory works.
- Coaches may form biased views of their athletes, which in turn may mean that incorrect guidance is given on how to improve performance.
- During a game, coaches will only be able to observe small sections of what is actually going on. Views may be obstructed or the coach's position may not allow them to see the full field of play. This is where other performance analysis methods such as video and notational analysis have proved extremely beneficial.
- Subjectivity in a performance heightened situation may lead to the coach making the wrong decision.
- The emotional nature of the competitive situation may mean that performers are unable to take information on board or coaches may not be able to clearly articulate their views.
- Storage and retrieval of information – coach observations do not provide a permanent record for athletes to refer back to.

- (b) Discuss the various strategies, apart from real-time observations, that are used to analyse the physical and technical aspects of performance in a named sporting activity. [6]

Level 1	1-2	Candidate identifies at least one recognised analysis technique and may attempt to explain how it is linked to performance.
Level 2	3-4	Candidate applies different analysis techniques linking them to refining performance.
Level 3	5-6	Candidate analyses different analysis techniques and applies them effectively to show how they can help to refine performance.

**The following is indicative of the material that might be included in the answer.**

The main factors of performance that may be monitored and analysed when seeking to refine performance can be grouped under the following headings: **physical/physiological factors, technical factors, tactical factors and behavioural/psychological factors.**

The focus of analysis depends very much on the sporting activity and the level of the performer with different sporting activities placing a different emphasis on these components.

Sporting activities place a different emphasis on these components.

- Physical aspects: Physical fitness is a critical factor in most sports – the physical training programmes should match the demands made of the performer while competing.
- Technical aspects: efficiency of movement and its aesthetic qualities – a thorough understanding of the technical demands of the sport is essential to the coach and performer.

### **Physical PA techniques**

- Fitness testing: field (eg. Multistage Fitness test) and laboratory (eg. Wingate Anaerobic test). Outside competition to gain information on performance eg. physical conditioning. Most important use of fitness testing is to provide feedback to performers about their progress in relation to their goals. There are good for establishing a starting point for performers (baseline information) and useful for helping to plan training programmes.
- Physiological testing eg. Blood lactate analysis, blood pressure, resting heart rate.
- GPS tracking systems eg. Prozone, Nike +, Strava, Garmin Connect. Increasing used by recreational performers as well as the elite.

## Technical PA techniques

- Biomechanics: Biomechanical analysis of technique is integral to the work of coaches in most sports. It can determine how coaches devise and manipulate practice sessions and what feedback they give to performers. In order to carry out a technique analysis the coach needs to know what good technique looks like and an understanding of the biomechanical principles involved in its execution. Study of the body motions in terms of force, time, distance. Frame analysis.
- Notation: Using symbols to record information about performance – statistical – patterns of play – technical errors and achievements – work/rest intervals. Match analysis only provides raw data but it can help in making more informed decisions about performance. Many software companies have developed computerized products such as Prozone to help match analysis - speed of analysis affects depth of analysis.
- Video: Provides objective information and can enhance performance analysis. Permanent, immediate, technological aids (freezing, slow motion). Use of performance analysis software such as Dartfish.

*Named sporting activity must be used. Otherwise max. 3 marks.*

2. Recent studies have suggested that the cost of obesity and overweight conditions on the NHS could increase from between £6 billion and £8 billion in 2015 to between £10 billion and £12 billion in 2030.

(a) Define obesity and explain, using the energy balance equation, how an individual can manage their weight through both diet and exercise. [3]

- Obesity is defined as having 'a BMI of 30 to 39.9'. Someone with a BMI of 40 or above is considered severely obese. Waist circumference is also used as an indicator of obesity. Generally, men with a waist circumference of 94cm or more and women with a waist circumference of 80cm or more are more likely to develop obesity-related health problems (NHS, 2014).

- Energy balance equation:

If Energy input (calorific intake) = Energy output (calorific expenditure) then WEIGHT STAYS SAME. If energy input (calories taken in - diet) is greater, the individual will gain weight. If energy expenditure (calories burnt - exercise) is greater, then the individual will lose weight.

*1 mark for definition, 2 marks for explanation of energy balance equation*

(b) Define the concept of body image and explain how it is culturally constructed. [3]

#### **Concept of body image**

- Body image is a combination of the picture that an individual has of their own body, how others see us and the values that society links to body shape and size. It is personal to each one of us and, subsequently, has links with self confidence and esteem.
- Cash and Pruzinsky define body image as the 'internal, subjective representations of physical appearance and bodily experience'. The representations are filtered through the lens of cultural portrayals of bodies, media depictions and peer group expectations.

#### **How is body image culturally constructed**

- The constructionist view of the body allows us to understand the links between body image and the media. The way in which we see our physical ourselves is not a natural process but a culturally mediated one.
- Associations are often formed ie. fatness equals ugliness whilst thinness equals attractiveness. Rewards are often seen to be available to those people whose bodies measure up to our cultural expectations e.g. preferential treatment.
- Images of the body are used to sell products and often a particular body shape is linked to a product.
- Women's (in more recent times, men's) struggle to live up to media images can lead to dissatisfaction with their own body and may result in eating disorders such as anorexia and bulimia.
- Many individuals adjust their lifestyle in order to improve their body image (and their self esteem). Such changes include training for appearance or weight control purposes, dieting and 'protective changes' (such as the use of make up or clothes that mask body shape). There are also changes in cognition – the idea of 'learning to live with ourselves'.

1 + 1 + 1 (amplification)

(c) Explain the various strategies an individual could use to ensure the completion of an exercise programme designed for weight management purposes. [4]

- Set appropriate goals (SMARTER approach). Goals should be performance and not outcome-related.
- Train with other people e.g training with peers, attending fitness classes, support and encouragement from family, friends(positive reinforcement) and teachers
- Vary activities to avoid tedium e.g. gym classes such as spinning, HIIT, Zumba, music whilst exercising.
- Rewards e.g. extrinsic forms of motivation such as free gifts from gyms, certificates for attendance/most improved pupil, financial incentives from family, praise from others.
- Cognitive strategies ('building an active mindset') e.g. positive self talk, replacing negative thoughts with positive ones (links with attribution theory), stress management techniques and avoidance of the so-called 'all-or-nothing' phenomenon (where individual 'forgets' that engaging in some PA is better than doing nothing at all and develops negative self).
- Ensure that the programme is efficient and planned carefully. HIIT is very effective as it can fit into a busy schedule as each workout only takes 15-20 minutes. You could, therefore, effectively train during a lunch hour.
- Practical strategies eg. pick an exercise programme that you can carry out anywhere. HIIT is seen as very good from this perspective as most of the exercises used as simply bodyweight exercises and do not require expensive gym equipment.

3. Levels of anxiety and arousal can vary for different performers and across different sporting activities.

Using appropriate theories, explain why levels of arousal and anxiety may fluctuate and outline the different stress management techniques that a performer could implement in order to maximise their performance. [10]

**The following is indicative of the material that might be included in the answer.**

- Definitions - arousal (a state of alertness and anticipation that prepares the body for action or similar) and anxiety (a form of fear or apprehensive that that is created by awareness of this arousal: it is a negative emotional state caused because a situation is seen as threatening or similar). May be linked with stress (distress).
- Arousal theories – drive theory (Hull); inverted-U theory (Yerkes-Dodson), catastrophe theory (Fazey and Hardy), zone of optimal functioning (Hanin), attention narrowing and peak flow (Csikzentmimalyi)
- Different performers will need different levels of arousal in order to perform at their optimal level. Variations due to level of expertise/phase of learning, personality type and type of skill being carried out (Oxendine, 1970). For example, low levels of arousal are required for a golf put, whereas high levels of arousal are required for a tackle in rugby.
- Types of anxiety: trait anxiety; state anxiety (cognitive and somatic) and competitive anxiety. Candidates may make links with composure, choking, self confidence and self efficacy.
- Optimal performance occurs when somatic state anxiety is at moderate levels. However, the lower the level of cognitive state anxiety, the better the performance. High levels of cognitive state anxiety have been seen down to have a major detrimental effect of performance.

### **Stress management**

- Somatic and cognitive techniques.
- Somatic techniques relate to the body and their purpose is to reduce the physiological responses associated with arousal e.g. biofeedback (the use of physiological measuring equipment to help teach athletes how to control physiological responses); breathing control techniques and relaxation including progressive muscle relaxation (PMR) and meditation.
- **Cognitive techniques** relate to thinking and they emphasise the role of the thought processes in managing arousal and anxiety e.g. imagery; mental rehearsal or mental practice; goal setting (performance-orientated not outcome-orientated and measurable); positive self-talk and cognitive relabeling.

**Level 3 (8-10 marks)**

Candidate shows excellent knowledge of theories related to arousal and anxiety. There is detailed discussion of how arousal and anxiety may differ between different sports and individual with differing personalities. Stress management techniques (cognitive and somatic) are explained in depth. There is excellent use of relevant examples and technical language throughout.

**Level 2 (5-7 marks)**

Candidate shows good knowledge of theories related to arousal and anxiety. There is some good discussion about how arousal and anxiety may vary for sports and individuals but this is not fully developed. Knowledge of stress management techniques (cognitive and somatic) is evident but not explored in detail. There is good use of relevant examples and technical language throughout.

**Level 1 (1-4 marks)**

Candidate shows limited knowledge of theories related to arousal and anxiety. There is little understanding demonstrated of how arousal and anxiety may change in different situations and for different individuals. Knowledge of stress managements techniques may be superficial. There is only limited use of technical language and examples not always matched appropriately.

## SECTION B

The following levels should be applied to both questions.

LEVEL	MARK BAND	DESCRIPTOR
Level 1	1-5	<p>Candidate makes few, if any, relevant points with no real application. There may be an attempt to draw conclusions but understanding of connections between different areas of subject content is limited or not demonstrated.</p> <p>Information is poorly organised. There is limited use of specialist terminology/vocabulary and frequent errors in spelling, punctuation and grammar.</p>
Level 2	6-10	<p>Candidate makes some valid points using relevant principles, concepts and theories. There may be some application with valid conclusions drawn. Some ability to make connections between different parts of the subject content is demonstrated.</p> <p>Information is well organised and ideas are expressed in a logical manner. There is good use of specialist terms/vocabulary with some errors in spelling, punctuation and grammar but these are not intrusive.</p>
Level 3	11-15	<p>Candidate shows good knowledge and understanding of relevant principles, concepts and theories. There is good application and analysis with sound logical conclusions drawn. The ability to make connections between different parts of the subject content is demonstrated on several occasions.</p> <p>Information is very well organised and argument is expressed clearly and coherently. There is good use of specialist terms/vocabulary and spelling, punctuation and grammar are generally accurate.</p>
Level 4	16-20	<p>Candidate demonstrates excellent knowledge, understanding, analysis, and evaluation using relevant principles, concepts and theories. The ability to synthesise and make connections between different parts of the subject content is fully demonstrated throughout the answer.</p> <p>Information is very well organised and the form and style of communication is highly appropriate. There is very good use of specialist terms/vocabulary with few, if any, errors in spelling, punctuation and grammar.</p>

4. In order to achieve national sporting success in global events such as the Olympic Games and World Cups, countries should concentrate their efforts on developing excellence rather than promoting mass participation. [20]

Critically analyse this statement.

- Definition – mass participation (concept that sport is open to everyone and not simply those who are highly skilled or exceptionally committed).
- Introduction and context – sports participation continuum and pyramid structure. Importance of identification and development. At the highest/elite levels (excellence), performers be on the verge or have reach the very pinnacle of sporting performance – national/international level.
- **There is, inevitably, a link between the different levels of the pyramid and so changes at one end (such as in the funding of elite sport) will have a knock on effect at the other.**
- Mass participation (grass roots / sports for all) v elite performance / excellence.
- Is it justifiable to such a disproportionate amount of public money on the preparation of elite athletes at the expenses of mass participation/sport for all schemes? UK Sport spends more than £100 million per annum on its elite performance programmes through a combination of Exchequer and National Lottery funds. Who does success benefit?
- UK Sport adopts a ‘**no compromise**’ approach to the funding of sports and athletes. This means that sports that are not success (ie. do not win medals) are not funded or have their funding significantly reduced. Is this approach too ruthless?
- There are a number of benefits that are associated with success in international sporting competitions (such as World Cups and Olympic Games) and many governments now feel that it is a legitimate use of public funds to support elite athletes. However, supporting elite sport is very costly and others argue that funds could be better used in other areas such as health, education and the promotion of sport for all.

### **Issues relating to the promotion and funding sporting excellence**

- Sporting success can boost national pride and morale. Concept of the ‘feel good factor’ and bread and circuses theory – divert attention away from problems within society (esp. important in the age of austerity)
- Economic benefits – shop window policy. Increase tourism for the county.
- Success in elite sport as a great driver of mass participation.
- Success at an elite level can help to create more role model leading to increased participation (widen the base of the participation pyramid) - more media exposure.
- Creation of role models – links with social learning theory. Lord Coe - everything starts from emulation and aspiration.
- Is elite sport too elitist? Money is ploughed into the chosen few at the expense of the rest.
- Is elite sport something to aspire towards? Problems with win at all costs (Lombardian ethic) and deviance – made worse by the commercialism of sport?

### **Issues relating to the funding and promotion mass participation**

- Governments use sport as a mechanism for introducing or reinforcing social harmony. By providing opportunities and facilities, it is felt that people will use their leisure time productively. This may then reduce instances of crime and anti-social behaviour.
- Health of the nation debate. Higher levels of grass roots participation will, inevitably, lead to associated health benefits/reduction of strain on the NHS.
- Benefits of sport linked to development of moral integrity, leadership skills, respect for the rules and authority – sport builds character.
  
- Conclusion: Is it possible for Governments to promote both excellence and mass participation (finite levels of funding – funding elite programmes may direct money away from mass participation programmes – both are costly).
- Results from funding elite sport more immediately visible and tangible - ...

**Candidates must be given credit for any other relevant information included**

5. Sportsmanship, moral integrity and fair play have gradually deteriorated as sport has become increasingly commercialised and globalized.

Discuss this statement.

- Definitions – deviance (behaviour that is seen to deviate from the norm within society); absolute and relative deviance; deviant underconformity and overconformity (related to the sport ethic).
- Sportsmanship v gamesmanship debate. Notion of the contract to complete.
- Is it naïve to assume that fair play should still be part of modern professional sport given the vast sums of money available for success?
- Issues relating to sports performers as role models within society.
- The commercialisation of sport refers to the process of sport becoming subject to the market forces of commerce. Evidence that sport has become increasingly commercialized include the proliferation of entrepreneurs buying sports teams as a business investment; the hyper inflation of footballers wages; the power of the transfer market; the commodification of sports brands (such as Nike and Adidas); the importance of television revenues (and associated pay-per-view and sport-specific satellite channels); increased prize money and the importance of sponsorship and advertising deals.
- Win ethic dominates sport – the rewards for winning have become so significant that a ‘win at all costs’ mentality has permeated into the bloodstream of sport. The concept of sportsmanship has been eroded and replaced by increased gamesmanship, deviant and even violent behaviour as athletes (and teams/sports authorities) seek to gain the vast rewards associated with success.
- Potential extrinsic rewards outweigh the consequences of being caught cheating. Pressure may be applied by sponsors, coaches/managers and/or teammates eg. Lance Armstrong case.
- Examples may be used to illustrate the rise of such deviant behaviour e.g. violent play, drug taking, gamesmanship such as diving in football and sledging in cricket. Examples of off field deviant behaviour might include bribery and illegal payments and corruption relating to the World Cup and Olympic bidding process.
- Is there still a moral code within sport? Is it acceptable to cheat because you believe that everyone else is?
- Has the traditional principles of British sport (eg. valuing physical and moral qualities) been eroded by the increased Americanization? Impact of the Lombardian ethic.
- Issue of macho culture and violence within American sport.
- Sportsmanship and fair play are still an important part of sport. Players who demonstrate good sportsmanship not only abide by the written rules of the game but also follow the unwritten ones such as walking before the umpire’s decision in cricket or passing the ball back to the attacking team after an injury. Examples to illustrate this counter argument should be included.
- It may be the case that deviance in sport is not increasing, it is just the case that the sports authorities are getting better at catching the cheats (e.g. important of World Anti-Doping Agency (WADA) and new drug testing technology) or that there is more media coverage of issues relating to deviance in sport.