GCE A LEVEL MARKING SCHEME

SUMMER 2019

A LEVEL (NEW)
PHYSICAL EDUCATION - UNIT 3
1550U30-1

INTRODUCTION

This marking scheme was used by WJEC for the 2019 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.

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Guidance for examiners

It should be remembered that learners are writing under examination conditions and credit should be given for what the learner writes, rather than adopting the approach of penalising him/her for any omissions. It should be possible for a very good response to achieve full marks and a very poor one to achieve zero marks. Marks should not be deducted for a less than perfect answer if it satisfies the criteria of the mark scheme.

For questions that are objective or points-based the mark scheme should be applied precisely. Marks should be awarded as indicated and no further subdivision made.

Banded mark schemes

For band marked questions mark schemes are in two parts.

Part 1 is advice on the indicative content that suggests the range of concepts, facts, issues and arguments which may be included in the learner's answers. These can be used to assess the quality of the learner's response.

Part 2 is an assessment grid advising bands and associated marks that should be given to responses which demonstrate the qualities needed in AO1, AO2 and AO3. Where a response is not creditworthy or not attempted it is indicated on the grid as mark band zero.

Examiners should first read and annotate a learner's answer to pick out the evidence that is being assessed in that question. Once the annotation is complete, the mark scheme can be applied.

This is done as a two stage process.

Stage 1 – Deciding on the band

Beginning at the lowest band, examiners should look at the learner's answer and check whether it matches the descriptor for that band. If the descriptor at the lowest band is satisfied, examiners should move up to the next band and repeat this process for each band until the descriptor matches the answer.

If an answer covers different aspects of different bands within the mark scheme, a 'best fit' approach should be adopted to decide on the band and then the learner's response should be used to decide on the mark within the band. For instance if a response is mainly in band 2 but with a limited amount of band 3 content, the answer would be placed in band 2, but the mark awarded would be close to the top of band 2 as a result of the band 3 content. Examiners should not seek to mark candidates down as a result of small omissions in minor areas of an answer.

Stage 2 – Deciding on the mark

During standardising (marking conference), detailed advice from the Principal Examiner on the qualities of each mark band will be given. Examiners will then receive examples of answers in each mark band that have been awarded a mark by the Principal Examiner. Examiners should mark the examples and compare their marks with those of the Principal Examiner.

When marking, examiners can use these examples to decide whether a learner's response is of a superior, inferior or comparable standard to the example. Examiners are reminded of the need to revisit the answer as they apply the mark scheme in order to confirm that the band and the mark allocated is appropriate to the response provided.

Indicative content is also provided for banded mark schemes. Indicative content is not exhaustive, and any other valid points must be credited. In order to reach the highest bands of the mark scheme a learner need not cover all of the points mentioned in the indicative content but must meet the requirements of the highest mark band. Where a response is not creditworthy, that is contains nothing of any significance to the mark scheme, or where no response has been provided, no marks should be awarded.

Question	Mark scheme	AO1	AO2	AO3	Total
1.	*Cycling has had a tremendous increase in popularity as a consequence of Team GB's success at Olympic and World Championship level over recent years.*				
(a)	During a cycling training session describe the short term responses that occur to the cardiorespiratory system. 4x1 mark • Increased H.R SV/ Q/ blood pressure. • Regulation of sympathetic nervous system/ baroreceptors / chemoreceptors. • Vasomotor control Vasodilation /vasoconstriction, blood redistribution, shunting. Venous return • Increased gaseous exchange /TV / IV / EV. • Greater AV02 diff. • Respiratory pumping / muscle pumping. • Increased body heat. Any other relevant facts. Max 2 marks awarded for cardio/respiratory adaptations, with amplification.	4			4
(b) (i)	Outline **two** physiological adaptations that could occur to the musculoskeletal system as a result of a structured long term **anaerobic** cycling training programme. 1 mark per adaptation (x2). **Max 2 for adaptations** Increase in – glycogen stores, ATP stores, creatine phosphate level, oxidative enzymes, mitochondrial density. Muscle hypertrophy. Changes in type 2b (type 2a muscle fibre. Recruitment of motor units. Increased activation of prime mover Maintain elasticity of muscle fibre, increased tensile strength of ligaments, tendons. Increase calcium (osteoblasts) Bone density No marks awarded for aerobic adaptations.	2			2

Question	Mark scheme	AO1	AO2	AO3	Total
(ii)	Explain the effect of each of these adaptations on performance. 2x2 marks 1 mark for adaptation linked to effect 1 mark for effect linked to performance • Increased power, strength, speed, reaction time, flexibility, agility • Increased lactic acid tolerance, • Delay anaerobic threshold • Positive effects on osteoarthritis and osteoporosis. • Other relevant example		4		4
(c) (i)	In order to maximise performance in cycling performers need to consider the effect of drag. Identify two factors that influence drag in cycling. 2x1 marks **Factors** • Air resistance is the force acting against moving objects slowing them down • **Speed** of object. The faster an object moves, the more resistance it will encounter. In cycling we refer to this resistance as drag. • **Shape** of object and the way in which air (in the case of cycling) flows past it. • **Size** of the object and the way in which air (in the case of cycling) flows past it.	2			2

Question	Mark scheme	AO1	AO2	AO3	Total
(ii)	Explain the strategies that could be employed to limit these effects. 2x2 marks maximum of 2 marks per strategy 2 marks for application **<u>Strategies</u>** **<u>Example answer</u>:** • In cycling, streamlining can be achieved in a number of ways. Cyclists adopt a low crouch position (using drop handlebars to reduce their frontal cross-section area) • **Streamlining** is an effective way of reducing drag and aiding a smoother flow of air past an object. • This smooth flow involves air flowing in layers known as **laminar flow.** • Advances in bike design such as oval-shaped frame tubes and disc wheels have helped reduce drag. • Helmets have been designed to have a more aerodynamic shape (teardrop). The use of 'skin-suits' • Diagrams with explanation is acceptable.		4		4

Question	Mark scheme	AO1	AO2	AO3	Total
2.	Premier league football requires a high level of motivation and assertion.				
(a)	Explain, giving examples, the difference between assertion, instrumental aggression and hostile aggression. 3x2 marks 1 mark for explanation 1 mark for example <u>Assertion</u> is forceful play within the laws of the game, can this be referred to as channelled aggression, there is no intent to harm or injure the opposition. Goal directed behaviour, controlled. Relevant example <u>Aggression</u> (hostile) intent to cause harm, pain, injure opponent, accompanied by anger. Relevant example. <u>Instrumental aggression</u>. Premeditated aggressive action that is carried out in order to achieve a specific goal, a form of aggression used as a means to achieve a goal within a sporting context, to win. Primary reinforcement is extrinsic reward. Relevant example, taking a player out of the game.		6		6

Question	Mark scheme	AO1	AO2	AO3	Total
(b)	Describe the strategies a coach could use to control aggressive behaviour in football. 4x1 mark • Cognitive stress management techniques, e.g. : imagery goal setting mental rehearsal positive self-talk cognitive re-labelling • Somatic stress management techniques, e.g.: biofeedback breathing techniques PMR self-directed relaxation meditation • Lower/control arousal levels. • Punishment/sanctions removal from situation, e g: substitution • Reinforcement/praise/reward of good/fair behaviour • Other influences e.g.: Education Role models Leadership	4			4

Question	Mark scheme	AO1	AO2	AO3	Total
(c)	In relation to the frustration aggression hypothesis, explain the possible causes of unwanted aggression in sport. 2x2 marks 2 marks for theory + 2 marks for application (causes) in sport Frustration aggression hypothesis – goal's blocked, tension is created, aggression releases tension, catharsis. Aggressive cue hypothesis- certain cues trigger aggressive behaviour. • nature • nurture Causes • losing • pain • embarrassment • ambient temperature • home or away • unfair officiating • poor performance • heavy loss • opponent's reputation Award maximum of 2 marks for causes only. Any other relevant example.		4		4

Question	Mark scheme	AO1	AO2	AO3	Total
(d)	Describe the **social facilitation theory** in relation to sporting performance. 4x1 marks **Social facilitation theory** The concept that the presence of others will affect performance. • Crowd / audience / other performers / team mates, influencing performance. • This can be positive (enhanced/improvement) • Negative (impaired/inhibited) • Audience effect – extroverts tend to perform better. Introverts tend to perform worse. • Dominant response (drive theory) • Concept of being evaluated/ judged, (evaluation-apprehension theory) **Home field advantage** • Increased arousal in front of home fans can create pressure which could lower or raise performance. • drive theory • evaluation apprehension • distraction conflict	4			4

Question	Mark scheme	AO1	AO2	AO3	Total
3.	*Elite tennis stars are able to return the ball after receiving a tennis service at speeds of over 100 mph but are still able to keep the ball in play by applying topspin.*				
(a)	Describe the effect of topspin on a tennis ball. 4x1 mark Principles and Explanation • Hitting the ball **harder** over the net as it will dip significantly in the latter part of its flight • When the ball **spins**, the air molecules surrounding the ball spin with it. This creates what is called a boundary layer. When this boundary layer of air molecules collides with the oncoming (or mainstream) air, a decrease in velocity is seen along with the creation of a pressure differential • **"Pulled" down** sharply. The pressure differential on opposite sides of the ball causes a Magnus force, which is directly from a high pressure region to a low pressure region. • Players can hit balls at high speeds and make them dip into a small area. Non-parabolic flight path. • Balls can be hit higher over the net, making the shot more difficult to return/ **higher bounce** of ball. • This is due to the Magnus force/downward force (which is the Bernoulli effect applied to spinning objects) • Correct diagram can be used to reinforce answer.	4			4

Question	Mark scheme	AO1	AO2	AO3	Total
(b)	Explain Welford's model of information processing in relation to returning a tennis serve (figure 1) Banded answer. Indicative content: 1. Information in through our senses, sensory input (vision, audition, proprioception), (chunking). Perception – awareness, understanding, making sense of information received. Temporarily store all of these inputs prior to filtering, selective attention Inputs that are seen as relevant to the decision are then stored in the short-term sensory store (1-2 seconds) GATE- translation of perception into action/doing 2. Decision is made by comparing the information in the short-term memory with previous experiences stored in the long-term memory. The decision process takes place by comparing the current situation, held in the short term memory, with previous experiences, held in the long term memory, to determine an appropriate action. The action and the results are stored for future reference the whole process then begins again. Short and long term memories. It is suggested that the short term memory can only hold up to seven pieces of information and that it is retained for less than a minute. The long term memory, which appears to have limitless capacity, contains information relating to past experiences. 3. Effector (Action). Nervous system and muscular system. Translation mental process into action, movement. The action is performed with reference to the movement pattern stored in long term memory. Once the action is completed, the situation and result are stored in the long term memory for future reference. 4. Feedback – feeding in to memory, knowledge of performance knowledge of results, positive and negative.		8		8

3. (b)	**When receiving a tennis serve the ball can travel at a speed of around 130 miles per hour (mph).** **In relation to receiving a tennis serve explain Welford's model of information processing (Fig 1)** **[8]**
Band	**AO2**
3	**7-8 marks** Outstanding explanation of effects of Wellford's model Covering all stages listed in the mark scheme.
2	**5-6 marks** Good explanation of effects of Wellford's model An understanding of the model within the 4 stages.
1	**1-4 marks** Limited explanation of effects of Wellford's model A limited understanding of the model.
0	**0 marks** No explanation of effects of Wellford's model

Question	Mark scheme	AO1	AO2	AO3	Total
(c)	Discuss the influence of increasing television coverage on sport. Banded answer Indicative content **Advantages** Concept of Golden Triangle Sport & Media: High level sport is a media commodity, commerce, entertainment. Sport available almost 24/7. Media control aspects of sport e.g. timing, season Celebrities are created and role models can have positive and negative impacts Sponsorship increased due to media coverage Sponsorships increase popularity. Sport is a relatively in expensive form of advertising Money from sponsorships can help improve spectator provision Increased disabled sport coverage. Paraolympics etc. Promotion of lifelong involvement in sport. Promotion of healthy image. Professional opportunities for different careers such as performers, coaches officiating, commentators Standards of performance have been improved over the years because sport is so popular to watch on TV. Facilities are improved. Stadiums are bigger and modern so more people can watch it live as well as watching it on TV. Media is TV. It's the most prominent and powerful aspect of the media with Sky, BT and Pay per View having had a significant impact in recent years. Other forms of media are the internet, social media, newspapers, radio etc. Big screens in stadiums let the audience see replays, Hawkeye decision, highlights of a game to keep audience entertained.			8	8

Question	Mark scheme	AO1	AO2	AO3	Total
	Disadvantages Watch sport as opposed to taking part Create sedentary lifestyle. Powerful sports such as the Premier League football have some control over their sponsors Top level performers lose their privacy. Paparazzi intrusion before and after a match, or even in their free time. Only very few get high financial rewards, e g Roger Federer, Cristiano Ronaldo become rich because they are the best in the world. Major sporting events may not be available to watch unless you 'pay to view'. Some performers may be forced to perform more frequently. TV coverage links with deviance, cheating, hooliganism. Any other relevant example				

3. (c)	Discuss the influence of increasing television coverage on sport (8)
Band	**AO3**
3	**7-8 marks** Outstanding discussion of advantages **and** disadvantages of increased media coverage in sport.
2	**5-6 marks** Good discussion of advantages **and** disadvantages of increased media coverage in sport.
1	**1-4 mark** Limited discussion of advantages **or** disadvantages of increased media coverage in sport.
0	**0 marks** No discussion of advantages or disadvantages of increased media coverage in sport.

Question	Mark scheme	AO1	AO2	AO3	Total
4.	*Elite performance is all about "marginal gains" (Brailsford). Coaches apply the latest techniques to make the smallest of improves to their athletes. This includes supplementation and psychological interventions.*				
(a)	Describe how legal supplementation can be used to improve sporting performance. 1 mark for each description of legal supplement. 1 mark for each impact on performance. **Legal supplements** Ergogenic aids – means of improving the efficiency and enhancing quality of performance <u>Creatine monohydrate</u> – enhancing CP stores. Improve power, speed, strength, duration and intensity. Train harder for longer. There are different methods for taking creatine. Loading phase, 20 - 25 gms per day for 5-7 days. Maintenance phase 10 gms per day for 10-14 days. Alternatively take 5 grams over a long period/indefinitely. Some candidates may refer to flushing out phase. <u>Caffeine</u> - stimulates CNS, improve reaction time. Large quantities are illegal. Can lead to dehydration diuretic. <u>Protein</u> - amino acids, growth and repair of muscle, bone, tendons, support immune system Protein shakes, protein bars. <u>Casein</u> - milk protein, slow releasing, helps metabolic rate, yields greater strength. Whey- by product of cheese production, Immunoglobulin is an antibody that is found in whey protein powder.	6			6

Question	Mark scheme	AO1	AO2	AO3	Total
(b)	Discuss how knowledge of the **attribution theory** could benefit a coach when developing an athlete's sporting performance. Banded answer. Indicative content: • Attribution theory - perceived cause for events or behaviour. • Reasons for behaviour, for winning and losing. • Important because it can affect –future effort, motivation and behaviour. • Coaches can use attribution theory to develop an understanding of performer's behaviour and an understanding of motivation. • Identification of reasons for performance helping performer to improve, develop, maintain performance, develop confidence. • Weiner model of attribution  • Locus of control/causality and stability dimensions explained. • Stable elements that are permanent. • Unstable temporary elements that can be changed • Internal –under performer's control. • External –outside of performers control. • Internal /unstable – concentration, commitment, confidence, attitude, preparation. • Relevant example of ability, effort, luck, task. • Attributing defeat to external attributions sustains confidence and establishes a winning expectation, taking away the responsibility of the loss from players. This would maintain self-esteem, sustain motivation, pride. • Success should be attributed to stable /internal reasons	2	2	6	10

Question	Mark scheme	AO1	AO2	AO3	Total
	• Link with motivation- understanding attributions help coach/performer to realise what needs improving, how hard they need to work even when winning. • Attribution affect EXPECTATIONS (how we will perform in future) EMOTION (pride, enjoyment, satisfaction/dissatisfaction, disappointment, frustration) • SELF SERVING BIAS –where performers who lose tend to attribute their failure to external causes and performers who win attribute success to internal factors. This limits sense of shame due to failure and highlights personal achievement and success. • LEARNED HELPLESSNESS – extreme lack of motivation, feeling of hopelessness. Caused by reinforced failure and internal /stable factors. • Global learned helplessness (all sport). • Specific learned helplessness (one sport). • Relevant example. • ATTRIBUTIONAL RETRAINING – changing attributions to help motivation. Focus on external factors.				

Question	Mark scheme	AO1	AO2	AO3	Total
5.	Discuss the view that developing elite performance should take priority over increasing mass participation levels. Banded answer Indicative content 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 pattern represented as a continuum and **pyramid** structure. Importance of identification and development. Majority of performers will be towards the bottom of the pyramid. At the highest/elite levels (excellence), performers can be on the verge or have reached 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. Concept of **Opportunity, Provision, Esteem.** Sport for all v Sport Excellence debate. Disproportionate amount of public money on the preparation of elite athletes at the expense of mass participation/sport for all schemes, can this be justified. 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 successful (ie.do not win medals) are not funded or have their funding significantly reduced. 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 of 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 country. Success in elite sport as a **great driver of mass participation**.	2	2	16	20

Question	Mark scheme	AO1	AO2	AO3	Total
	Success at an elite level can help to create more role models leading to increased participation (widen the base of the participation pyramid) Extended 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 promotion mass participation Promoting excellence will not address wider societal issues/inequalities. Some sports don't need funding-mass spectator sports (football) 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 antisocial 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. Mass participation benefits tend to be long term. **Candidates must be given credit for any other relevant information included**				

4. (b)	**Discuss how knowledge of attribution theory could benefit a coach in developing an athlete's sporting performance.** **[10]**		
Band	**AO1** **2 marks**	**AO2** **2 marks**	**AO3** **6 marks**
3			**5-6 marks** The discussion shows outstanding evaluation of Attribution theory. Reasoned judgements are evident. There are excellent links between theory and practice The response is clearly expressed and shows accurate use of technical terminology. Writing is very well structured using accurate grammar, punctuation and spelling
2	**2 marks** Good knowledge and understanding of Attribution theory.	**2 marks** Good application of the Attribution theory	**3-4marks** The discussion shows good evaluation of Attribution theory. Some reasoned judgements are evident. There are good links between theory and practice The response is adequately expressed and shows appropriate use of technical terminology. Writing is generally well structured using reasonably accurate grammar, punctuation and spelling.
1	**1 mark** Limited knowledge and understanding of Attribution theory.	**1 mark** Limited application of Attribution theory.	**1-2 marks** The discussion shows limited evaluation of Attribution theory. The response shows basic use of technical terminology. Writing shows some evidence of structure but with some errors in grammar, punctuation and spelling
0	**0 marks** No knowledge of attribution theory	**0 marks** No application of attribution theory	**0 marks** No discussion of the different uses of attribution theory Response not worthy of credit

5.	**Discuss the view that developing elite performance should take priority over increasing mass participation levels.** **[20]**		
Band	**AO1**	**AO2**	**AO3**
	2 marks	**2 marks**	**16 marks**
3			**11-16 marks** Outstanding evaluation of the mass participation versus elite performance debate. Detailed and reasoned judgements are made. Positive and negative effects on sport are discussed in detail. The response is clearly expressed, and shows accurate use of technical terminology. Writing is very well structured using accurate grammar, punctuation and spelling.
2	**2 mark** Good knowledge and understanding of mass participation versus elite performance debate.	**2 mark** Good application of the mass participation versus elite performance debate.	**5-10 marks** Good evaluation of the mass participation versus elite performance debate. Judgements are made but not always evidence-based. Evaluation tends to be one sided concentrating on either the positive or negative effects. The response is adequately expressed, and shows appropriate use of technical terminology. Writing is generally well structured using reasonably accurate grammar, punctuation and spelling.
1	**1 mark** Limited knowledge and understanding of the mass participation versus elite performance debate.	**1 mark** Limited mass participation versus elite performance debate.	**1-4 marks** Limited evaluation of the mass participation versus elite performance debate. Evaluation is one sided and is superficial. The response shows basic use of technical terminology. Writing shows some evidence of structure but with some errors in grammar, punctuation and spelling.
0	**0 marks** No knowledge and understanding of the mass participation versus elite performance debate	**0 marks** No application of the mass participation versus elite performance debate.	**0 marks** No evaluation of the mass participation versus elite performance debate. Response not worthy of credit.

Unit 3: Assessment objectives Mark Allocation

	Q1	Q2	Q3	Q4	Q5	Total
AO1	8	8	4	8	2	30
AO2	8	10	8	2	2	30
AO3	0	0	8	6	16	30
Total	**16**	**18**	**20**	**16**	**20**	**90**