



GCE A LEVEL MARKING SCHEME

SUMMER 2025

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

About this marking scheme

The purpose of this marking scheme is to provide teachers, learners, and other interested parties, with an understanding of the assessment criteria used to assess this specific assessment.

This marking scheme reflects the criteria by which this assessment was marked in a live series and was finalised following detailed discussion at an examiners' conference. A team of qualified examiners were trained specifically in the application of this marking scheme. The aim of the conference was to ensure that the marking scheme was interpreted and applied in the same way by all examiners. It may not be possible, or appropriate, to capture every variation that a candidate may present in their responses within this marking scheme. However, during the training conference, examiners were guided in using their professional judgement to credit alternative valid responses as instructed by the document, and through reviewing exemplar responses.

Without the benefit of participation in the examiners' conference, teachers, learners and other users, may have different views on certain matters of detail or interpretation. Therefore, it is strongly recommended that this marking scheme is used alongside other guidance, such as published exemplar materials or Guidance for Teaching. This marking scheme is final and will not be changed, unless in the event that a clear error is identified, as it reflects the criteria used to assess candidate responses during the live series.

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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. (a)	<i>The cardiovascular and respiratory systems play a vital role in effective athletic performance.</i> Outline the relationship between heart rate, stroke volume and cardiac output. 0 mark – For just defining HR, SV and/or Q with no reference to relationship 1 mark for basic outline of the relationship which may include definitions of HR /SV. Accept equation ($Q=SV \times HR$). 2 marks for good outline of the relationship, including correct definition of Cardiac output. 3 marks for detailed outline including the relationship between Q, SV and HR Cardiac Output – amount of blood ejected from heart (ventricles) in one minute. Stroke Volume – amount of blood ejected out of the heart in one beat. Heart Rate – Number of beats per minute. Detailed outline to include. Cardiac output = Stroke volume x Heart rate ($Q=SV \times HR$) Increase in SV and HR cause an increase in cardiac output during exercise. During exercise SV increases due to expansion of cardiac muscle (approx. 70ml at rest to approx. 120ml during maximal exercise) HR increases during exercise from 70bpm at rest to 220-age at max. Increase in Ejection fraction - % of blood pumped from ventricles each beat.	3			3
(b) (i)	<i>During exercise the working muscles require more blood.</i> Describe how blood is re-distributed to the working muscles during exercise 1 mark for a basic description 2 marks for a good description 3 marks for a detailed description <i>HOW not WHY</i> • Vasomotor control • Vascular shunt. • Vasodilation/ widening of arteries /arterioles supplying working muscles. • Vasoconstriction/ narrowing of arteries/ arterioles supplying NON working muscles. • Precapillary sphincter opening in working muscles • Precapillary sphincter closing in NON working muscles • Role of receptors	3			3

Question	Mark scheme	AO1	AO2	AO3	Total
(b) (ii)	Justify three reasons for the re-distribution of blood during exercise. 3x1 marks • Supply more O₂ • Remove CO₂ • Removal of Lactic acid from working muscle / delay lactic acid/ OBLA • Supply more food fuels /CHO/fat for aerobic respiration • Regulate body /muscle temperature • Maintain pH /buffering • Delay fatigue/muscle fatigue • Delay anaerobic threshold		3		3
(c)	Explain how three long-term cardiorespiratory adaptations could improve sporting performance. Candidates need to link and explain how each of the three chosen adaptations could improve performance. Banded answer – see grid <u>Adaptations</u> Cardiac Hypertrophy/myocardium/ increase in heart muscle size. Increase chamber size Blood volume increase/haemoglobin/ red cell count. Increase number of capillaries/ capillarisation/ heart muscle. Increase efficiency of buffering system Increase in Stroke Volume/ heart contracts with greater force/ ejects more blood with each beat. Bradycardia. Increase Cardiac Output Increase max HR Lower resting HR Increase storing capacity of O₂ in blood. RESPIRATORY ADAPTATION Strengthening/Hypertrophy of respiratory muscle. Increase surface area of alveoli. Increase lung volumes/TV/IRV/ERV. Capillarisation of Alveoli.	2	4		6

Question	Mark scheme	AO1	AO2	AO3	Total
	The effect on sporting performance needs to explain why they would be: Higher Faster Longer Stronger Delay the onset of fatigue Other information: Efficient use of O₂/ cells /lungs Improved Max VO₂ Improved gaseous exchange/diffusion Lower resting/ recovery respiratory rate. Increase lactic acid tolerance. Better O₂ transportation Increase aerobic/anaerobic threshold				

Band	AO1 2 marks	AO2 4 marks
3		3 - 4 marks Detailed Explanation of how the 3 long term cardiorespiratory adaptations could improve sporting performance.
2	2marks Correct identification of 3 long term adaptations	2 marks Good explanation of how the 2 long term cardiorespiratory adaptations could improve sporting performance.
1	1 mark Correct identification of 1/2 long term adaptation.	1 mark Basic explanation of how 1 long term cardiorespiratory adaptation could improve sporting performance.
0	0 marks No identification of long term adaptations.	0 marks No explanation of effects of long term cardiorespiratory adaptations.

	AO1	AO2	AO3	Total
TOTAL	8	7	0	15

Question	Mark scheme	AO1	AO2	AO3	Total
2. (a)	Outline the difference between task cohesion and social cohesion. 1 mark for a basic outline of both or definition of either. 2 marks for good outline of both types of cohesion. Social Cohesion - It mainly revolves around the strength of unity in reference to communication and interaction among each other. It also relates to dynamics within the group relationships e.g. communication, enjoyment e.g. attractiveness, mutual respect. For example, A crowd cheering a football team in a match requires strong social cohesion. Task Cohesion - It mainly revolves around the strength of unity in reference to working together to achieve a common goal Other relevant outline/example	2			2
(b)	Explain, using examples, the factors that affect team cohesion. 1-2 mark for basic explanation 3-4 marks for good explanation must have examples. 5-6 marks for detailed explanation must have examples. Interactive sports lend themselves to more cohesion Friendships/ feelings/communication within the group How attracted the group are to each other. Success of the group. Leadership/ type/strength Size of group External perception of threats Similarities of group members /race/gender/age/ability/attitude/effort/skill level/personality. Driven by a common goal (6 I's) identify, interaction, interdependence, interpersonal relationships, identical norms and values, independence	2	4		6

Question	Mark scheme	AO1	AO2	AO3	Total
(c)	Explain how a coach could reduce the Ringelmann effect in a team. 1-2 mark for basic explanation - could include knowledge of Ringelmann effect. 3-4 marks for good explanation of how. 5-6 marks for detailed explanation of how. The Ringelmann effect is the tendency for individual members of a group to become increasingly less productive as the size of their group increases. As more and more people are added to a group, the group often becomes increasingly inefficient. Highlighting individual effort/performance/importance Feedback about performance/positive/negative/reinforcement/praise/ use statistics/notation Social support from group members/social cohesion/team building activities Give individual responsibility Perform in small groups/manipulate success Set individual goals Motivate, avoid low arousal. Avoid boredom Pressure/punishment from team members/coach Attribution theory - failure due to stable /internal factors/task complexity/or relevant e.g. Relevant e.g.	2	4		6
(d)	Justify why a coach would use different styles of leadership with a team. Banded answer – see grid Leadership styles – Autocratic Democratic Laissez faire Emergent Prescribed. Advantages and dis-advantages of each style. Team game situations- Variations in leadership styles dependent upon situation / member characteristics / leader personality.		6		6

Question	Mark scheme	AO1	AO2	AO3	Total
	Dimension model Situational characteristics • Effective leadership will adapt to the situation. • Certain situations may influence / control/dictate a particular mode of leadership e.g. dangerous (environmental factors) with high risk such as teaching javelin will require a strong, autocratic style leadership. • Time Leader characteristics • Effective leadership is related to the personality of the leader. Leadership style will be influenced by personality e.g. autocratic / democratic / laissez-faire • Personality/experience/ability of the leader will influence whether a performer reacts in a positive / negative way towards the leader. Member characteristics • Effective leadership is related to the group e.g. size, experience, tradition / culture, previous expectations. • Age Leaders Behaviour Required behaviour • Style of leadership that is required / suitable / appropriate for the particular situation / members. Actual behaviour • Relates to the leadership style adopted – the way the leader acts and behaves. • The leader's actual behaviour will have a direct impact on performance of the team and the members' satisfaction. Preferred behaviour • This relates to way in which the group wish to be led (links with satisfaction). • The leader's behaviour can have a direct impact on performance and motivation leading to successful outcomes for the team. • Leaders should be flexible / can change / can adapt to differing styles (to accommodate the differing needs to improve performance.)				

Question	Mark scheme	AO1	AO2	AO3	Total
	Small group / team - democratic / person orientated / relationship orientated. Female - democratic / person orientated Male – autocratic / command style Beginners / weaker performers – task orientated / democratic / autocratic Elite – person / relationship orientated / democratic / laissez faire Large group / dangerous situation / complex task – Autocratic / Safe environment / basic task – democratic. Other relevant examples.				
Band	AO2 6 marks				
3	5-6 marks Detailed justification of use of leadership styles within team sports.				
2	3-4 marks Good justification of use of leadership styles in sporting context.				
1	1-2 mark Basic justification of use of leadership justification of use of leadership styles in sporting context.				
0	0 marks No justification of use of leadership styles in sporting context.				

	AO1	AO2	AO3	Total
TOTAL	6	14	0	20

Question	Mark scheme	AO1	AO2	AO3	Total
3. (a)	The javelin and discus are technical field events that require the application of biomechanical principles Identify two factors that affect the flight path of a javelin. 2x1 mark Factors determining trajectory Speed of release Height of release Angle of release Max 1 mark for - Environmental factors e.g. wind direction, air resistance, mass/weight, gravity.	2			2
(b)	Explain, with reference to Newton's second law of motion, how an elite athlete could throw the discus a greater distance. 1 mark for knowledge of Newton's second Law 2 marks for basic explanation of how. 3 marks for good explanation of how. Newton's second law ($F = ma$/ $F = m \cdot a$) Elite athletes will perform a spin turn as opposed to a standing throw. The hand is in contact with the discus for a greater time. Therefore force is generated of longer time Since impulse = force x time ($F \times t$) The greater the value of time, the greater the impulse Giving a larger velocity/change in momentum/acceleration Achieving max horizontal range. Greater the speed of release = greater horizontal range Optimal angle of release is 45 degrees. Greater the height of release/the greater the horizontal range (up to optimum).	1	2		3

Question	Mark scheme	AO1	AO2	AO3	Total
(c)	Analyse, with reference to the discus, how the Bernoulli principle can be applied to lift force. 1-2 mark for basic analysis, which might include a description of Bernoulli lift force 3-4 marks for good analysis, of how lift is created through changing pressure. Reference to any other relevant example. 5 marks for detailed analysis – must refer to the discuss. Bernoulli effect- relationship between flow speed and pressure Pressure differential/gradient Causing a lifting force (which helps the discus sail a greater distance) Giving a non-parabolic flight path. Where flow is fast, pressure is low Where flow is slow, pressure is high The resulting pressure force moves from high to low. Air travels further over top of the discus Air flowing over the top moves faster than the air flowing underneath. Therefore, the pressure on top of the discus is lower than the pressure underneath The flight path will be asymmetrical The flight path will not be a true parabola Optimal angle of release 25-45 degrees Relevant diagram.			5	5
(d)	Performance-enhancing drugs (PEDs) are substances used to improve physical ability and are notorious for their illegal use in athletic competitions. Outline the possible risks associated with the misuse of illegal ergogenic aids. 1 mark basic outline could include a list 2 marks for good outline 3 marks for detailed outline. Physical health risks e.g. body reaction to ergogenic aids, addiction Mental health risks e.g. aggression, self confidence Social health risks e.g. cheating Financial risks e.g. banned Other relevant examples	3			3

Question	Mark scheme	AO1	AO2	AO3	Total
(e)	Describe how a performer could use the process of carbo- loading. 1-2 marks for basic description of knowledge. 3-4 marks for good description of carbo-loading stages. 5-6 marks for detailed description to include days/timings/percentages. Description of carbo loading e.g. Astrand /Sherman • Depletion - Reducing muscle glycogen stores. The training intensity continues or in some instances increases but the carbohydrate intake is reduced. • Tapering - The amount of training is reduced with the same amount of low carbohydrate consumption. There also could be preparation for the event and a replenishment of glycogen stores in later stages of tapering. • Loading – repletion - intensity has decreased to almost no training and there is an increase in the consumption of carbohydrates. Allows the body to overload the systems with glycogen. SUPER COMPENSATION 6/7 day cycle. Initial depletion of glycogen stores 2 4 6 Tapering of exercise over days 6-1. Rest on final day 80% increase in CHO intake over final 3/4 days Pre competition meal high in medium and low GI carbs Med to high GI food Maltodextrin Energy/Isotonic drinks. Gel Hydration High CHO intake over 2/3 days prior to match 8-10grams per kg of body weight. Other relevant carbohydrate loading techniques	6			6
TOTAL		12	2	5	19

Question	Mark scheme	AO1	AO2	AO3	Total
4 (a)	Outline how response time could be improved. 1 mark for basic outline, can include a list. 2 marks for good outline 3 marks for detailed outline Practice responding to stimulus Use previous experience Anticipation/warning signals/attend to preliminary movements Control/reduce arousal level Reduce number of stimuli/ create simple a time situation Use selective attention/concentrate/focus Use mental rehearsal Increase intensity of stimulus/brightness and size of stimulus Make stimulus and response compatible Use kinesthesia/sense of sound/touch Increase physical fitness Other relevant answers	3			3
(b)	Explain how the Psychological Refractory Period (PRP) can affect reaction time. 1 mark for basic explanation, for knowledge. 2 marks for good explanation of how. 3 marks for detailed explanation of how it affects reaction time. PRP is the delay in being able to respond to a second or two closely spaced stimuli. PRP occurs where there is a presentation of a second stimulus before the previous stimulus has been processed. PRP refers to a period of time during which the response to a second stimulus is significantly slower because a first stimulus is still being processed. This delay in response time is required to divide attention This slows down reaction time. Related to Single channel hypothesis, channel of limited capacity (explanation of process acceptable) Hick's law Relevant examples - it is often associated with disguised shots or dummies Relevant diagram can be used to support answer		3		3

Question	Mark scheme	AO1	AO2	AO3	Total
(c)	'Cricket coaches consistently provide feedback to individuals and the team. Analyse, using examples how feedback can influence sporting performance. Banded answer – see grid Candidates can refer to: - Functions of feedback Inform – increase knowledge Error detection/error correction Motivate/praise/increase self confidence Reinforce / good /correct performance/rewards Punishment- against undesirable behaviour/ supplemented by positive reinforcement - Types of feedback- Positive/negative Immediate/delayed Concurrent/terminal Knowledge of performance/knowledge of results Verbal/visual Internal /external - Other relevant factors e.g. Type of activity Personality of performer Avoid information overload Allow performer to develop internal feedback/kinesthesia (rather than relying on external/augmented feedback) Attribution theory - Stage of learning – Cognitive/ Associative/ Autonomous Novice = positive feedback/praise/reinforce good habits/ immediate/ simple /clear/no overload/KP Advanced performers = positive + negative/detect errors/prevent bad habits/delayed/detailed/KR			10	10

Band	AO3
3	8-10 marks Detailed analysis and knowledge on the influence of feedback. Detailed examples are included 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	4-7 marks Good analysis on the influence of feedback. Good examples are included. 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	1-3 mark Basic analysis on the influence of feedback. analysis on the influence of feedback. Basic examples are included. 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 mark No analysis of the different uses of feedback. Response not worthy of credit

TOTAL	3	3	10	16
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Question	Mark scheme	AO1	AO2	AO3	Total
5.	Discuss how globalisation has influenced sport. The following is indicative of the material that might be included in the answer. Banded answer – see grid • Definitions of globalisation (Giddens) • Migration of players • National teams - The key issues relating to the global migration of players and its effects of national teams. • Consequences of globalisation – i.e. global migration of players, coaches and expertise; creation and celebrity nature of global superstars and teams. • Globalisation as a mechanism of financial gain. Three levels of globalisation: 1. creation of global sporting competitions, 2. the development of satellite communications, 3. growth of the sporting goods market (Cashmore). Examples of globalisation of sport such as the rise of sporting goods – brand evolution (Nike) and global competitions such as (but not limited to) African Cup of Nations in football, Indian Premier League (IPL) in cricket and Premier League in football. • Commercialisation of sport- sport becomes subject to market force of commerce. • Sport has become a commodity (bought and sold) • Symbiotic relationship of Golden triangle – media, sport and sponsor • Better stadiums, • Better Tv coverage • Better standard • More participation e.g. womens football • Rise in professionalism led to rise in commercialisation. • Players and other individuals want share of profits. • Entrepreneurs buying sport teams as business investment (Glaziers/ Man Utd). Huge increase in wages/fees. Transfer market. Massive prize money. Sponsorship and advertising deals. Commodification of sports brands (Nike).	1	4	15	20

Question	Mark scheme	AO1	AO2	AO3	Total
	- Importance of television revenues, huge Sky /BT sport deals for televising rights. Pay per view/ Sport channels. - Americanisation of sport. - Has sport become over commercialised? Rewards are so massive that it creates a 'win at all cost mentality. Lombardian ethic. - Naïve to assume that fair play could still be part of modern sport given vast sums of money involved! - Is there still a moral code in sport? - Sportsmanship v Gamesmanship debate. Sportsmanship has been eroded and replaced by gamesmanship as individual's/teams/ authorities seek to gain the vast rewards associated with success. - Models of morality. - Deviant (behaviour deviating from norm of society) even violence is becoming more prevalent. - Potential rewards outweigh consequences of being caught. - Everybody else cheats!! - Pressure by sponsors/coaches/managers /teammates. - Examples of deviant behaviour – violent play, drug taking, match fixing, bungs, bribery, sledging, diving in football, corruption (Fifa, IOC) - Poor role models. However / Counter argument – - Good role models - Sportsmanship is still important and still evident in modern sport. - Relevant examples should be included. - Are sport authorities getting better at catching cheating. Has cheating in sport always existed. - Better drug test. WADA. - Greater coverage of deviance by media - Involvement of law enforcement agencies – police in sex abuse cases. FBI in IOC corruption.				

Band	AO1 1 mark	AO2 4 mark	AO3 15 mark
3			11-15 marks Detailed discussion on the effects of globalisation on sport. 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		2-4 mark Good application of the effects of globalisation on sport.	5-10 marks Good discussion on the effects of globalisation on sport . Judgements are made but not always evidence-based Discussion 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 Basic knowledge of the effects of globalisation on sport	1 mark Basic application of the effects of globalisation on sport .	1-4 marks Basic discussion of the effects of globalisation on sport Discussion 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 of the effects of globalisation on sport to include commercialisation and the influence on deviance, sportsmanship and fair play.	0 marks No application of the effects of globalisation on sport to include commercialisation and the influence on deviance, sportsmanship and fair play.	0 marks No discussion on the effects of globalisation on sport to include commercialisation and the influence on deviance, sportsmanship and fair play. Response not worthy of credit

Unit 3: Assessment objectives mark allocation

	Q1	Q2	Q3	Q4	Q5	Total
AO1	8	6	12	3	1	30
AO2	7	14	2	3	4	30
AO3	0	0	5	10	15	30
Total	15	20	19	16	20	90

QUESTION	AO1	AO2	AO3	TOTAL
1a	3			3
1bi	3			3
1bii		3		3
1c	2	4		6
	8	7	0	15
2a	2			2
2b	2	4		6
2c	2	4		6
2d		6		6
	6	14	0	20
3a	2			2
3b	1	2		3
3c			5	5
3d	3			3
3e	6			6
	12	2	5	19
4a	3			3
4b		3		3
4c			10	10
	3	3	10	16
5	1	4	15	20
	1	4	15	20
	30 (30)	30 (30)	30 (30)	90 (90)