

GCSE MARKING SCHEME

SUMMER 2022

PHYSICAL EDUCATION - UNIT 1 (FULL COURSE) 3550U10-1

INTRODUCTION

This marking scheme was used by WJEC for the 2022 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.

GCSE PHYSICAL EDUCATION - UNIT 1

SUMMER 2022 MARK SCHEME

Question		Mark Scheme		AO2	AO3	Total
1. (a)		vide an example of commercialisation and reaction time. (AO3 3 marks)			3	3
		Example				
	Commercialisation in sport	Advertising/Branding/sponsorship				
	Technology	HR monitors/ Tracking/Coverage/ Digital screen				
	Reaction time	Starting pistol Reacting to finish				
(b)	distance race like the 2x 2 marks 1 mark for a list	rate ation		4		4
(c) (i)	Identify 3 possible health screening methods an individual might undertake prior to starting a training programme for a half marathon. (AO1 3 marks) 3x1 mark Blood pressure PARQ Heart rate Calorie input/expenditure Blood and urine		3			3

Question	Mark Scheme	AO1	AO2	AO3	Total
(ii)	Justify why clip 1 (Cardiff half marathon) is an accessible event for all target groups. (AO2 4 marks.) 1 mark for examples Max 2 for list plus 2 marks for amplification e.g Access for all, doesn't matter about your ability, for example a fun run for children. • cheap • access for all-e.g. wheelchair race • non-competitive (fun run aspect of the race) • plenty of role models/support system- charities • social • elite • TV coverage		4		4
(iii)	Crowd encouragement is an important form of motivation to the participants. (AO1 1 mark) Identify this type of motivation. Intrinsic Cognitive Complex Extrinsic	1			1
(d)	Assess where power is demonstrated in the race. (AO3 2 marks) 1x2 (one place plus amplification) or 2x1 (2 different places) Reacting to the gun at the start. Sudden change of pace when sprinting at the end 'at the start' 'at the end'			2	2
(e) (i)	Outline the difference in the Anaerobic threshold of an elite athlete compared with a fun runner. (AO1 1 mark) • The threshold for an Elite athlete higher	1			1

Question	Mark Scheme	AO1	AO2	AO3	Total
(ii)	Identify 2 ways a marathon runner could overload their training programme to improve their anaerobic threshold. (AO1 2 marks)	2			2
	2x1 mark Appropriate examples to be given within the use of the acronym.) = Intensity				
	 Increase in Frequency Increase in duration Increase intensity Reference to frequency, duration or intensity e.g I train harder, and train faster, longer. 				

Question	Mark Scheme	AO1	AO2	AO3	Total
2. (a) (i)	Analyse how many people took part in sport in the last 4 weeks in Wales. (AO3 1 mark)			1	1
	1.5 million				
(ii)	Analyse what percentage of individuals with disability or long-term illness participate in sports 3 times a week. (AO3 1 mark)			1	1
	21%				
(b) (i)	Identify an example of a basic skill in the video. (AO1 1 mark)	1			1
	ThrowingRunningWalking				
(ii)	As the performers become more skilled, describe what characteristics they would demonstrate whilst performing?	3			3
	The performers will become:				
	ResponsiveEfficient				
	Effective Fluent movements				
	Fluent movementsAdaptive				
	Confidence				
(c) (i)	Identify an environmental factor that might affect the performance of the climber seen in the video clip. (AO1 1 mark)	1			1
	WeatherDifferent holds in rock				

Question	Mark Scheme	AO1	AO2	AO3	Total
(ii)	Explain the importance of feedback to the climber seen in the video clip. (AO2 2 marks)		2		2
	1 mark – 1 example 2 marks – amplification				
	List: Target setting Analyse strengths and weaknesses Positive feedback				
	 Amplification: By giving positive feedback it will ensure adherence and vice versa negative feedback will reduce adherence – Motivation/Demotivation Target setting Analyse strengths and weaknesses 				

	Mark Scheme	AO1	AO2	AO3	Total
•	•		6		6
Candidate to name 3 categories of well-being:					
Max 2 ma	arks per category.				
improved	posture, weight loss, stronger bones, absence				
All other	valid examples should be credited				
No marks	for duplication of mental and social factors				
Band	AO2				
3	 5-6 marks Excellent, well-reasoned explanation why exercise is important in maintaining the health and well-being of individuals Explicit links between the impact of the physical, social and mental health and wellbeing on the individual The answer is balanced and detailed and focuses on the key content. 				
2	 3-4 marks Good, well-reasoned explanation why exercise is important in maintaining the health and well-being of individuals Clear links between the impact of exercise on health and wellbeing on the individual. 				
1	 1-2 marks Limited explanation why exercise is important in maintaining the health and well-being of individuals The answer has some limited detail and focuses on some areas of content. 				
0	0 marks No analysis.				
	and well- Candidat Max 2 ma Physical improved of diseas Social – relationsh Mental – confidence All other with the marks Band 2	Explain why exercise is important in maintaining health and well-being of individuals. (AO2 6 marks) Candidate to name 3 categories of well-being: Max 2 marks per category. Physical – improved fitness, better co-ordination, improved posture, weight loss, stronger bones, absence of disease. Social – social integration, meet new people, strengthen relationships Mental – reduce stress, increased levels of self-confidence, motivation to finish tasks, feel happy. All other valid examples should be credited No marks for duplication of mental and social factors Band AO2 5-6 marks • Excellent, well-reasoned explanation why exercise is important in maintaining the health and well-being of individuals 3 • Explicit links between the impact of the physical, social and mental health and wellbeing on the individual • The answer is balanced and detailed and focuses on the key content. 2 Good, well-reasoned explanation why exercise is important in maintaining the health and well-being of individuals • Clear links between the impact of exercise on health and well-being of individuals • Clear links between the impact of exercise on health and well-being of individuals • Limited explanation why exercise is important in maintaining the health and well-being of individuals • Limited explanation why exercise is important in maintaining the health and well-being of individuals • The answer has some limited detail and focuses on some areas of content.	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Question	Mark Scheme	AO1	AO2	AO3	Total
(e)	Explain 2 long-term effects of exercise on health. (AO2 4 marks)		4		4
	Max 2 marks for two adaptations Up to 2 marks on the effect on health				
	Marks must be rewarded regardless of what box they appear in.				
	Adaptations Cardiovascular system-Cardiac hypertrophy; increased stroke volume (SV) at rest and during exercise; decrease in resting heart rate (HR); increase in cardiac output (Q); capillarisation at the lungs and muscles; increase in number of red blood cells Respiratory system-Increased vital capacity; increase in minute ventilation (VE); increase in tidal volume (TV); decrease in breathing rate (BR); increased number of functioning alveoli; increased strength of the respiratory muscles (internal and external inter-costals and diaphragm) Energy system-Increased production of energy from the aerobic energy system; increased tolerance to lactic acid. Muscular system-Muscle hypertrophy; increased strength of tendons; increased strength of ligaments Skeletal system-Increase in bone density. Losing weight Max 2 marks Effects: (all other correct examples to be credited) Cardiovascular system – increased blood flow to working muscles and removal of waste products and CO2 Reducing fatigue. Respiratory system – more O2 in blood, take longer to reach Anaerobic threshold - work at a higher intensity for longer				
	Muscular system – more powerful contractions during performance				
	Losing weight – reduce the risks of obesity, Diabetes etc				

Question	Mark Scheme		AO1	AO2	AO3	Total	
3. (a)	•	Analyse Figure 1 to provide the relevant examples to complete the table. (AO3 3 marks)				3	3
			Example				
	A Classif	ication of lever	1st				
	B Type o	f movement	Extension				
	C Type o	f joint	Ball and socket				
(b)	shoulders in L1-2 basic armovement — contraction, a L3-4 detailed movement — contraction, i of terminolog Indicative co Muscular collisometric to (stillness) Muscle contraction Movement Movement Abduction/Ac Rotation/circ Concentric Con	figure 1. (AO1 2 malysis of muscul might include the and identifying the analysis of muscul which will include identifying the condition. Intent: Intent:	tion and movement at the marks, AO3 2 marks) ar contraction and type of muscular e correct movement. Cular contraction and the type of muscular rect movement. Correct use the type of muscular rect movement and the upward position	2		2	4
(c)	maintaining r	mobility in a joint.	an important role in lons and ligaments.	2			2
	Structure	Function					
	Tendon	Attach muscle	to hone				
	Ligament	Attach bone to					
	Ligament	/ ttaoii bolic to					

Question	Mark S	Scheme	AO1	AO2	AO3	Total
(d)	Discuss the positive and neg on officiating in sport. (AO1 2 (levelled response)	•	2		4	6
	Advantages	Disadvantages				
	Supports team approach so there is less pressure on individuals	Slows the game				
	Information can be shared easily and quickly and stored over time	Not available at all levels of competition				
	Decisions and scoring are more reliable and accurate	No longer trust people's decisions				
	There is increased confidence and trust in officials	Undermines respect for officials' knowledge and expertise				
		Undermines honesty, integrity and the spirit of fair play				

Band	AO1	AO3
3		 3-4 marks Excellent, well-reasoned discussion on the positive and negative effects technology has on officiating in sport Explicit links between the impact of technology on officiating in sport The answer is balanced and detailed and focuses on the key content.
2	2 marks Good knowledge of the positive and negative effects of technology on officiating in sport.	 2 marks Good, well-reasoned discussion on the positive and negative effects of technology on officiating in sport Clear links between the impact of technology on officiating in sport The answer has some detail and focuses on some areas of content.
1	1 mark Limited knowledge of the positive and negative effects of technology on officiating in sport.	1 mark Limited discussion on the positive and negative effects of technology on officiating in sport The answer has some limited detail and focuses on some areas of content.
0	O marks No knowledge of the positive and negative effects of technology on officiating in sport.	0 marks No analysis.

Question	Mark Scheme	AO1	AO2	AO3	Total
(e)	Describe how an official might use verbal and visual guidance during a sporting event. (AO1- 2x1mark)	2			2
	Max 1 mark for each				
	Verbal – e.g. whistle, talking to players Visual – arm actions Must use accurately show, or words to that effect, no marks for 'show'				

Question	Mark Scheme	AO1	AO2	AO3	Total
4.	Bronwen Jenkinson became the first Welsh woman to win the 10mile, Snowdon mountain race since 1989.				
(a) (i)	Explain why cardiovascular endurance is one of the main components of fitness used during the race. (AO2 4 marks)		4		4
	L1-2 basic explanation of why cardiovascular endurance is one of the main components of fitness used during the race.				
	L3-4 detailed explanation of why cardiovascular endurance is one of the main components of fitness used during the race.				
	 Cardiovascular Endurance is the ability of the heart and lungs to provide the working muscles with oxygenated blood for a prolonged period of time. Duration thereforeWHY Intensity /terrainWHY 				
(ii)	Identify an appropriate test to measure cardiovascular endurance. (AO1 1 mark)	1			1
	e.g. Multistage Shuttle Run Test (not the Bleep test) 12 min cooper run Yo-Yo endurance tests Maximal Oxygen Consumption Test (VO _{2max})				
(iii)	Describe the protocol for the appropriate test in (a) (ii). (AO1 3 marks)	3			3
	3 valid points 3x1 mark				
	Duration/Distance Procedure/measured Validity/reliability				

Question	Mark Scheme	AO1	AO2	AO3	Total
(b)	Explain the functions of the systemic circulatory system. (AO2 4 marks)		4		4
	L3-4 detailed explanation of the functions of the systemic circulatory system using relevant terminology.				
	Type of circulatory system				
	 In the systemic circulation, blood travels out of the left ventricle, to the aorta, to every organ and tissue in the body, and then back to the right atrium. The arteries, capillaries, and veins of the systemic circulatory system are the channels through which this long journey takes place. Once in the arteries, blood flows to smaller arterioles and then to capillaries. While in the capillaries, the bloodstream delivers oxygen and nutrients to the body's cells and picks up waste materials. Blood then goes back through the capillaries into venules, and then to larger veins until it reaches the vena cava. Blood from the head and arms return s to the heart through the superior vena cava, and blood from the lower parts of the body returns through the inferior vena cava. Both vena cava deliver this oxygen-depleted blood into the right atrium. From here the blood exits to fill the right ventricle, ready to be pumped into the pulmonary circulation for more oxygen. 				
(c)	Assess the importance of vasodilation and vasoconstriction of the vascular system for an athlete. (AO1 2 marks, AO3 4 marks) Levelled answer. Indicative content: Definition x2 Open/close Management of blood and its redistribution Vasodilation takes more oxygenated blood to the working muscles, and removes more waste products like CO2 and LA, Vasodilation helps the body to lose heat, while Vasoconstriction helps to keep heat within the body, if an individual overheats, performance will decrease. Takes blood away from e.g. stomach	2		4	6

Band	AO1	AO3
3		3-4 marks Excellent, well-reasoned assessment of the importance of vasodilation and vasoconstriction of the vascular system for an athlete Explicit links between the impact of vasodilation and vasoconstriction and performance The answer is balanced and detailed and focuses on the key content.
2	2 marks Good knowledge of the importance of vasodilation and vasoconstriction of the vascular system for and athlete.	2 marks Good, well-reasoned assessment of the importance of vasodilation and vasoconstriction of the vascular system for an athlete Clear links between the impact of vasodilation and vasoconstriction and performance The answer has some detail and focuses on some areas of content.
1	1 mark Limited knowledge of the importance of vasodilation and vasoconstriction of the vascular system for an athlete.	1 mark Limited assessment of the importance of vasodilation and vasoconstriction of the vascular system for an athlete The answer has some limited detail and focuses on some areas of content.
0	0 marks No knowledge of the importance of vasodilation and vasoconstriction of the vascular system for an athlete.	0 marks No analysis.

Question	Mark Scheme	AO1	AO2	AO3	Total
(d)	Using the data below, analyse why Cardiac Output has increased during exercise. (AO3 3 marks) Must include data for max 3 marks, max 2 marks for any response, without the use of data			3	3
	Q at rest = SV x HR Q at rest = 70 x 80 Q at rest = 5600 ml Q at rest = 5.6 l Q during exercise = SV Q during exercise = 24 Q during exercise = 24	0 × 200 -,000 ml			
	Exercise increases SV and HR Need for oxygen/carbon dioxide removal/ nutrients Therefore increases Q				
(e)	Evaluate the barriers that limit participation in sport. (AO1 2 marks, AO3 4 marks) Provision, Opportunities, Esteem Age, religion, economic status, interest/ability/skill, family and friends, health and fitness			4	6
	The differences between the barriers that limit male and female needed, however- a band 3 answer must have within the content the differences between male and female sports. Also saying the gap is closing.				

Band	AO1	AO3
3		3-4 marks Excellent, well-reasoned evaluation of the barriers that limit participation in sport Explicit links between the impact of Provisions, opportunities and esteem on participation in sport The answer is balanced and detailed and focuses on the key content.
2	2 marks God knowledge of the barriers that limit participation in sport.	2 marks Good, well-reasoned evaluation of the barriers that limit participation in sport Clear links between the impact of Provisions, opportunities and esteem on participation in sport. The answer has some detail and focuses on some areas of content.
1	1 mark Limited knowledge of the barriers that limit participation in sport.	1 mark Limited evaluation of the barriers that limit participation in sport The answer has some limited detail and focuses on some areas of content.
0	O marks No knowledge of barriers that limit participation in sport.	0 marks No analysis.

Question	Mark Scheme	AO1	AO2	AO3	Total
5. (a)	Using Figure 3 identify 2 components of fitness demonstrated by the athlete. (AO1 2 marks)	2			2
	1 mark each				
	StrengthBalanceFlexibility				
(b)	Compare the body composition of a weightlifter and an obese individual. (AO2 2 marks)		2		2
	Max 1 mark per point				
	 A weight lifters body composition includes a lower percentage of body fat and a higher percentage of fatfree mass, which includes muscle. Obese individual is more likely to have a high percentage of body fat and a lower percentage of FFM Possibly WL would have a greater bone density due to exercise increasing calcium absorption WL and Obese individual could have a higher % body fat than a normal individual. 				
(c)	Identify 2 appropriate recovery methods that can be used by athletes. (AO1 2 marks)	2			2
	2x1 mark Rehydrate, Active recovery Ice baths Stretch Massage Nutrition				
(d)	Identify why weightlifting is classified as predominantly internally paced. (AO1 1 mark)	1			1
	 With Internally paced, the performer controls the rate at which the skill is executed. Effected by the individual 				
(e)	Justify why fixed practice is the most effective for a weightlifter. (AO2 2 marks)		2		2
	 Weightlifting is a closed skill. It involves repeatedly practicing a whole skill in order to strengthen the motor programme so the body learns the movement. 				

Question	Mark Scheme	AO1	AO2	AO3	Total
(f)	Identify 2 mental preparation techniques the weightlifter could use prior to performance. (AO1 2 marks)	2			2
	Max 1 mark per technique.				
	Imagery/picturingMental rehearsalVisualisation				
(g)	Flexibility and mobility can be seen as important in allowing weightlifters to perform at the top level.				
(i)	Explain why sedentary individuals are often prescribed mobility exercises for health reasons. (AO2 4 marks)		4		4
	L1-2 basic explanation of why sedentary individuals are often prescribed mobility exercises for health reasons				
	L3-4 detailed explanation of why sedentary individuals are often prescribed mobility exercises for health reasons				
	 Low impact and low intensity therefore: Increases HR therefore burn calories Increases BMR therefore burn calories Reduced risk of associated health risks because they are active Non-competitive, therefore feel they can engage in the activity Increases ROM that results in an increase in activity Provides independence, therefore improved self-confidence 				
(ii)	Identify 2 negative physical consequences of being a sedentary individual. (AO1 2 marks) Max 1 mark per consequence.	2			2
	Increased risk of:				

Assessment Objectives

	AO1	AO2	AO3	Total
Q1	7	8	5	20
Q2	5	12	2	19
Q3	8		9	17
Q4	8	8	11	27
Q5	9	8		17
Total	37	36	27	100