

Physical Education

Advanced GCE A2 7875

Advanced Subsidiary GCE AS 3875

Mark Schemes for the Units

June 2009

3875/7875/MS/09

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Mark schemes should be read in conjunction with the published question papers and the Report on the Examination.

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Advanced Subsidiary GCE Physical Education (3875)

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2562 The Application of Physiological and Psychological Knowledge to Improve Performance

Section A

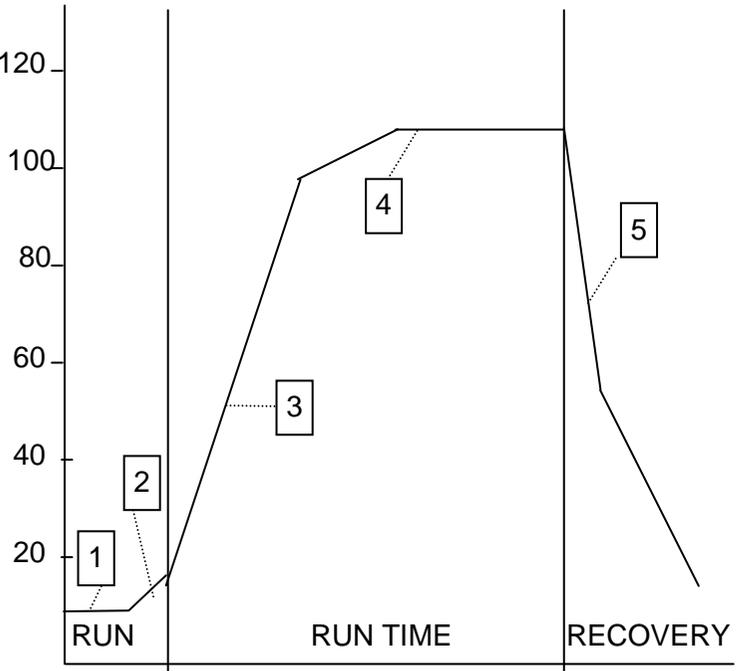
Application of Anatomical and Physiological Knowledge to Improve Performance

Question			Expected Answer	Mark	Additional Guidance
1	(a)	(i)	Using your anatomical and physiological knowledge, identify the type of joint, articulating bones, agonist and antagonist muscles of the gymnast's left ankle.	[4]	
			1 Joint Type: Hinge	4 marks in total	Point 2 – accept first two responses only
			2 Articulating Bones: Tibia and Talus		
			3 Agonist: Gastrocnemius/Soleus		
			4 Antagonist: Tibialis Anterior		
		(ii)	Name one strength training exercise that the gymnast could use to develop the rectus femoris and one to develop the deltoids.	2 marks in total.	
			1 Rectus femoris: Leg press/Leg extension/Squats/Lunges 2 Deltoids: Shoulder press/Dumbbell Lateral Raise/Upright Row		Accept: Step-ups; back press BOD: neck press Do not accept: Bench press
		(iii)	What type of contraction is occurring in the rectus femoris during the landing?		
			1 mark in total. 1 Type of contraction: Eccentric.	[1]	Do not accept: isotonic

Question		Expected Answer	Mark	Additional Guidance
	(b)	Give two functional characteristics of a Type IIb fast glycolytic muscle fibre.	[2]	
		1 Fast contraction time/speed		
		2 Fast relaxation time/speed		
		3 High force of contraction		Accept: high strength of contraction; BOD: powerful contraction.
		4 Low resistance to fatigue		
		5 High anaerobic capacity		Accept: low aerobic capacity Do not accept converse for each of these.
	(c)	How would a warm up affect the vascular system of the gymnast?	[3]	
		3 marks in total. 1 Increase in blood flow/cardiac output/Q/stroke volume 2 Which leads to an increased oxygen delivery to muscles 3 Blood vessels/arteries/arterioles leading to muscles vasodilate/pre-capillary sphincters relax 4 Blood vessels/arteries/arterioles leading to organs vasoconstrict/pre-capillary sphincters contract 5 Vascular Shunt/redistribution of blood from organs to muscles 6 Decrease in blood viscosity/increase in blood temperature 7 Vasodilation of blood vessels near skin to release heat 8 Oxygen dissociates from haemoglobin quicker/Bohr's Shift 9 Increased enzyme/hormone activity 10 Delay in OBLA		Do not accept: venous return increases Point 3: Must clarify where vasodilation occurs Point 4: Must clarify where vasoconstriction occurs Point 10: must be <u>delay</u> not <u>decrease</u> OBLA

Question		Expected Answer	Mark	Additional Guidance
	(d)	Describe the effects of altitude on the respiratory system.	[3]	
		3 marks in total.		
		<ol style="list-style-type: none"> 1. Less oxygen available in atmosphere at high altitude. 2. The partial pressure of oxygen (PPO₂) is reduced/hypoxia due to decrease PPO₂ in alveoli. 3. Hyperventilation/increased rate of breathing/dehydration. 4. A reduction in the diffusion/concentration gradient occurs. 5. Haemoglobin saturation depends on the partial pressure of oxygen/haemoglobin not fully saturated. 6. Less O₂ available to muscles/decreased VO₂ max/aerobic capacity 		<p>Do not accept 'air'</p> <p>Do not accept 'less O₂', must have PPO₂</p>
2	(a)	(i) More oxygen diffuses from the muscle capillaries to the muscle tissue during exercise than at rest. Describe how this occurs.	[4]	
		4 marks in total. <ol style="list-style-type: none"> 1 Partial pressure of oxygen (PPO₂) in the blood remains the same 2 Partial pressure of oxygen (PPO₂) in the muscle tissue decreases 3 Causing an increase in the diffusion gradient 4 Increase in acidity of blood/decrease in blood pH/Bohr Effect 5 Increase in temperature in blood 6 Causes oxygen to have less affinity to haemoglobin 7 Which in turn causes oxygen to dissociate from haemoglobin more readily 		Do not accept increases

Question		Expected Answer	Mark	Additional Guidance
	(ii)	During exercise the heart must increase blood flow to the working muscles to enable effective performance. Describe how the intrinsic mechanisms control the increased blood flow.	[3]	
		3 marks in total. 1 Increase in venous return 2 Increase in blood returning to the right atrium 3 Causes the atrium walls to stretch/starlings law 4 Increase in temperature detected by thermoreceptors 5 Information sent to the CCC 6 Which in turn causes the SA node to increase rate of firing		Point 5: Information received by CCC is emphasis
	(iii)	Define the term Cardiac Output and identify what values you would expect from an athlete at rest and during maximal exercise.	[3]	
		3 marks in total Submax 1 for definition.		
		Definition: 1 The amount of blood ejected by the <u>left</u> ventricle in one minute / Heart rate x stroke volume (HR x SV = Q) 2. Resting value = 4 - 6 litres/4,000 – 6,000ml per min 3. Maximum value = 20 - 25 litres/20,000 - 25,000ml per min		Mark first response only. Must have units.
(b)	(i)	Define minute ventilation (VE)	[1]	
		1 mark in total. 1 The volume of air breathed in or out (of the lungs) per minute / Tidal volume x frequency		Must have complete definition

Question	Expected Answer	Mark	Additional Guidance
(ii)	<p>Draw a graph below to show the minute ventilation of an athlete performing a 30 minute sub maximal training run:</p> <ul style="list-style-type: none"> • At rest • During the 30 minute submaximal training run • For a ten minute recovery period 	[4]	
<p>Minute ventilation (L/min)</p>  <p>RUN RUN TIME RECOVERY</p>			<p>Must have one mark from each area to access max.</p> <ol style="list-style-type: none"> 1. – 2. Can gain pt 2 if pt 1 is above 20 L/min 3. No further than 1/3 along run time 4. Must show change on plateau shape around 5. Sharp drop at start and can show continuing reduction to rest

Question			Expected Answer			Mark	Additional Guidance
			REST	1	Resting value below 20 l/min		
				2	Anticipatory Rise		
			RUN	3	Gradual increase in ventilation at start of exercise		
				4	Plateau (60-120 l/min)		
			RECOVERY	5	Rapid initial decrease at end of exercise to a more gradual decrease to resting level		
							Total: [15 marks]

Section B

Acquiring and Performing Movement Skills

Question	Expected Answer	Mark	Additional Guidance
3 (a) (i)	Identify two characteristics of abilities.	[2]	
	2 marks in total. 1 Innate/genetic/inherited/natural 2 Enduring/stable 3 Underpins (movement) skills		
	(ii) Give an example of a gross motor ability and describe its use in PE or sport.		
	2 marks in total. 1 Speed/strength/endurance/stamina/balance/flexibility/co-ordination 2 Example applied to physical activity eg speed is needed in the sprint run up in long jump.		Do not accept: hand-eye co-ordination. Practical example must be fully applied. Annotate with 'EG' '?' if no example.
(b)	Use a practical example to explain perceptual skills.	[2]	
	2 marks in total. 1 Example eg analysing/judging (flight path/direction) /detecting/interpreting 2 Example applied to physical activity eg tennis player interpreting/judging direction of serve		Do not accept: decision making, anticipation, reaction time, as the answer to point 1.
(c) (i)	Identify the characteristics of the cognitive phase of learning.	[3]	
	3 marks in total. 1 Initial phase of learning 2 A mental picture of the skill is being created/watching a demonstration forms a mental picture 3 Performer needs to concentrate on each part/sub-routine of the skill 4 Trial and error learning/period of discovery/mistakes could be made/performance is inconsistent 5 Movement is jerky/lacks co-ordination/does not flow 6 Relies on external feedback		Accept: novice phase/beginner phase Do not accept: Thinking stage without qualifications Accept: dominant response is incorrect

Question	Expected Answer	Mark	Additional Guidance
	(ii) Use practical examples from Physical Education or Sport to describe two different types of guidance that can be used during the cognitive phase of learning.	[2]	
	2 marks in total No examples – no marks. 1 (Visual) use of demonstration eg teacher demonstrates a tennis serve 2 (Verbal) coach tells performer where to place hands on ball in lay up shot 3 (Manual) performer is physically placed in correct position eg teacher holds performers legs in a handstand 4 (Mechanical) use of a device to provide support/safety for a performer eg use of arm bands in swimming		Accept: use of video to demonstrate a skill
(d)	(i) Describe the self paced and externally paced classifications.	[2]	
	2 marks in total.		
	1 (Self paced) (rate/speed/start) of action is controlled by the performer 2 (Externally paced) (rate/speed/start) of action controlled by environment/other performers		Do not accept: RQ terms
	(ii) Use practical examples to describe discrete and serial skills.	[2]	
	2 marks in total No examples – no marks. 1 (Discrete) the skill has an obvious start and finish/clear beginning and end such as in a swimming dive/forward roll 2 (Serial) movements are linked together to form a sequence such as in a gymnastics floor routine/triple jump.		Both description and example must be correct to award mark.

Question		Expected Answer	Mark	Additional Guidance
4	(a)	<p>Use practical examples to illustrate three characteristics of skilful performance. 3 marks in total Sub max 2 with no examples.</p> <p>1 Learned movement/movement has been practised/builds on innate characteristics/results from experience/permanent change in behaviour/can be repeated/consistent</p> <p>2 Follows a technical model/movement is correct</p> <p>3 Movement is efficient/economic/effortless/does not waste energy or time</p> <p>4 Movement is fluent/smooth/well timed/flowing/coordinated</p> <p>5 Movement is goal directed/performer knows how to perform movement/movement is goal directed/predetermined</p> <p>6 Movement is aesthetically pleasing/graceful/pleasing to watch</p> <p>7 Performer can concentrate on tactics/strategy/spare attentional capacity</p>	[3]	Accept 'grooved'.
	(b)	<p>Identify characteristics of the short term memory.</p> <p>1 Limited in capacity/can only store 5-9 items</p> <p>2 Holds information for up to 30 seconds</p> <p>3 Encodes information to long term memory</p> <p>4 Chunks information/links information to increase capacity</p> <p>5 Initiates movement</p>	[3]	
	(c) (i)	<p>Why is an advanced performer able to use kinaesthetic feedback? 2 marks in total</p> <p>1 Motor programme is stored in LTM.</p> <p>2 For comparison with movement occurring</p>	[2]	

Question	Expected Answer	Mark	Additional Guidance
(ii)	<p>Use a practical example to explain intrinsic feedback.</p> <p>3 marks in total Sub max 1 intrinsic with no examples.</p> <p>1 (Intrinsic feedback) comes from within performer 2 (Intrinsic feedback) is kinaesthetic/proprioceptive feedback 3 (Example) gymnast feels off balance in a handstand/swimmer is aware of under rotation on tumble turn</p> <p>Explain extrinsic feedback 4 (Extrinsic feedback) comes from external sources/knowledge of results</p>	[3]	Note: one mark for explanation and one mark for example.
(d)	<p>Use practical examples to explain schema theory.</p> <p>4 marks in total Sub max 2 marks with no example.</p>	[4]	

Question	Expected Answer	Mark	Additional Guidance
	<p>1 Information in LTM used to modify motor programmes/a set of rules that determine the performance of a skill/a scheme that provides the basis for a decision</p> <p>2 Recall schema provides detail relating to pre movement</p> <p>3 Initial conditions/body position/environmental factors (eg distance between players)</p> <p>4 Response specifications/what is required to do the skill (eg Speed players need to move to get free)</p> <p>5 Recognition schema relates to factors affecting movement during and after the movement</p> <p>6 Sensory consequences are pieces of information based on kinaesthetic or proprioceptive feedback (eg awareness of body position when reaching for an interception)</p> <p>7 Response outcomes/use of knowledge of results/comparison between actual and intended outcome (eg the pass was successful)</p> <p>8 Variability of practice enhances schema (eg practising different types of pass gives performer increased range of options)</p> <p>9 Errors can help to develop schema (eg a poor pass gives knowledge of results information to help performer perform correct action)</p>		

2563 Contemporary Studies In Physical Education

Question			Expected Answer	Mark	Additional Guidance	
					Accept	Do not accept
1	(a)	(i)	Identify <u>characteristics</u> of Physical Recreation	[3]		comparative comments such as "physical recreation is more organised than play"
			1 (skill/fitness)	limited skill or fitness/ low standard		
			2 (organisation)	limited or low level of organisation/organised by participants/no officials	some organisation	not organised
			3 (rules)	rules flexible or decided by agreement/NGB rules don't need to be followed.	no strict or set rules	no rules/simple rules/little rules/limited rules
			4 (competition)	limited competition		not competitive/no competition
			5 (enjoyable)	enjoyable/fun/taking part more important than winning/non-serious/low level of commitment or physical demand	social	intrinsic/stress relief
			6 (equipment)	basic equipment/no specialist clothing/inexpensive		little equipment
			7 (everyone)	everyone or anyone/available to all/any age	children and adults	
			8 (time)	time flexible or decided by agreement/free time/ own time/leisure time/ spontaneous	no set time/spare time	anytime/whenever
			9 (amateur)	amateur/voluntary/choice/ pre-occupation/hobby		
			10 (space)	space or place flexible or decided by agreement	no set place or space/ no set boundaries	anywhere/wherever

Question			Expected Answer		Mark	Additional Guidance	
						Accept	Do not accept
1	(a)	(ii)	What are the <u>benefits</u> of Physical Recreation?		[3]		
			1 (skill)	become more skilful or competent			
			2 (health & fitness)	improved health or fitness or well being			
			3 (relaxation)	relaxation/stress relief/escape from reality or pressure/cathartic		escape from reality	fun/enjoyment
			4 (appearance)	improve body shape or appearance			
			5 (social)	to socialise or to meet people/friendships.		social skills or benefits	
			6 (self)	self-fulfilment/spiritual development/confidence/improved self esteem/self realisation/intrinsic reward/personal development		sense of achievement/quality of life/personal skills or benefits	leadership/cognitive/aesthetic awareness/moral values/fair play
1	(b)	(i)	Describe part of an athletics <u>lesson</u> that could be classed as sport and a different part that could be classed as education.		[2]	accept reference to athletics lesson only must link description to 'sport' or 'education'	
			1 (sport)	performing to rules/ (running or jumping or throwing) with emphasis on competition or winning/recording results		race/racing	
			2 (education)	<u>learning</u> techniques or skills/ <u>learning</u> values and behaviour eg fair play/ <u>learning</u> health and safety examination work or preparation			

Question			Expected Answer	Mark	Additional Guidance	
					Accept	Do not accept
1	(b)	(ii)	What are the benefits of sport in schools being offered as an extra-curricular activity?	[4]		
			1 (choice)	chosen by those with commitment/voluntary		increases mass participation
			2 (standard)	opportunities to improve performance/develop skills or techniques	chance to achieve excellence/benefit from high level coaching	
			3 (relationships)	development of staff-student relationships/ staff satisfaction		making friends
			4 (time)	allows time for competitive school sport/ students do not need to miss other lessons to participate		
			5 (personal development)	personal development/ leadership opportunities/ learn to win or lose/chance to be successful	chance to be competitive/ gain confidence	
			6 (social development)	social development/ teamwork/communication		to socialise
			7 (use of other staff)	allows teachers outside the PE department to contribute/use of external coaches		
			8 (matches/trials)	opportunity for inter school matches or competitions/ trials	pathway to representative honours/talent ID	
			9 (range of sports)	opportunity to experience new sports		
			10 (school status)	enhances the school's reputation		

Question		Expected Answer		Mark	Additional Guidance	
					Accept	Do not accept
1	(c)	<p>Name a surviving ethnic sport in the UK (other than the Highland Games) and give reasons for its survival</p> <p>3 marks in total. 1 mark for example:</p> <p>1 named ethnic sport</p>		[3]	<p>nb. mark first named ethnic sport only</p> <p>any suitable example eg: Ashbourne football/Ashbourne mob football/Shrovetide football/Hallaton bottle kicking/Haxey Hood/ (Gloucestershire) cheese rolling/Lewes fire festival/ barrel rolling/Cornish hurling/ Lakeland Games/shin kicking</p>	<p>Ashbourne games/ hurling/Gaelic football/ mob football/street football/cheese chasing/ morris dancing/maypole dancing</p>
		2 marks for 2 of:				
		1 (local)	local/unique to area/local pride			'unique' on own/'carnival' on own/
		2 (rowdy)	rowdy			violent/dangerous/ men only/manliness/occupational/ no NGBs/ no officials/ limited organisation/ wagering
		3 (occasional)	occasional/annual/on public holidays			seasonal
		4 (social)	social/community/focus on pub/brings people together			fun/enjoyable/mass participation
		5 (tradition)	traditional/folklore/celebration of past/generation to generation			heritage/culture/historic
		6 (isolation)	isolated/rural/natural/ natural environment			
		7 (ritual)	ritual/ceremonial/celebrations/ religious/festival/supernatural/ medieval customs/carnival atmosphere			singing and dancing/costumes and clothing
		8 (tourism)	attracts tourism or publicity/commercial		brings money to the area	attracts spectators

Question			Expected Answer	Mark	Additional Guidance	
					Accept	Do not accept
1	(d)	(i)	Describe the development of rugby in Samoa.	[3]		
			1 (colonial game)	introduced by colonists/ replaced traditional or pre- colonial games		brought by missionaries
			2 (elitism)	elitist in colonial times/ initially elitist/initially exclusive to high-ranking Samoans		
			3 (spread)	gradual participation by lower ranking Samoans		
			4 (physique)	suited physique		
			5 (temperament)	suited temperament		suited lifestyle or way of life
			6 (integration)	integrated villages or tribes or islands		brought the people together
			7 (7s)	7s game suits limited population		"7s" game on own
1	(d)	(ii)	What is the significance of the Samoan Haka?	[3]		
			1 (cohesion)	bonds team and/or spectators and/or Samoans		
			2 (intimidating)	intimidates opposition/ 'psyches out' opposition		
			3 (psychological)	psychological preparation or advantage		
			4 (war gods)	calling on (war) gods	religion	ritual/ceremonial/traditional
			5 (media)	attracts media attention/ publicity for country		
			6 (ethnic identity)	expression or re-emergence of Samoan ethnic identity		
			7 (link)	link between traditional pastimes and modern day sport/it has survived colonialisation		

Question		Expected Answer		Mark	Additional Guidance	
					Accept	Do not accept
2	(a)	Outline factors that might affect mass participation with reference to opportunity, provision and esteem.		[6]	Accept positives e.g. has enough money to play polo	
		6 marks in total: at least 1 from each section:				
		Opportunity:	Lack of:			
		1 (money)	money/funding/disposable income			
		2 (ability/health)	ability/skill/health/fitness			
		3 (time)	time/pressure of life/work or other commitments			
		4 (choice)	choice/don't want to participate			
		5 (access)	social or physical access/don't fit in/lack of suitable access for disabled.			disability on own – must be qualified
		Provision:				
		6 (equipment/facilities)	equipment or facilities			space
		7 (clubs)	clubs/teams			
		8 (coaching)	suitable or qualified coaches or coaching			
		9 (transport)	transport/don't have a car/no public transport			distance from facilities
		Esteem:				
		10 (confidence)	confidence/been put off in past		embarrassment	lack of self esteem (repeat of question)
		11 (respect)	respect or encouragement from others			
		12 (discrimination)	discrimination/stereotyping/unfair treatment/negative attitudes or beliefs			

Question		Expected Answer		Mark	Additional Guidance	
					Accept	Do not accept
2	(b)	Describe different types of corruption or deviance in high level contemporary sport. 3 marks in total: Points must be described		[3]		
		1 (drugs)	drugs or doping to improve performance			
		2 (gamesmanship)	gamesmanship/unfair play		diving	
		3 (sledging)	sledging/verbal intimidation			
		4 (violence)	violence			
		5 (match fixing)	match fixing/throwing the game/losing on purpose/bribery		paying officials	
		6 (tampering)	tampering with equipment			
		7 (institutionalised corruption)	institutionalised corruption/accept suitable example eg IOC or FIFA accepting bribes			

Question			Expected Answer	Mark	Additional Guidance	
2	(c)	(i)	Describe the organisation and administration of sport in the UK.	[3]	Accept	Do not accept
			1 (historical)	historical/traditional/slow to change/amateur		
			2 (decentralised)	decentralised/little government involvement or interference		
			3 (complicated)	complicated/complex/inefficient		
			4 (funding/clubs)	public or private or voluntary <u>funding</u> or <u>clubs</u> /government funded/local authority funded		
			5 (hierarchical)	hierarchical/on different levels/reference to national – country-local level		
			6 (NGB)	NGBs/each sport has own NGB/NGBs or associations or clubs autonomous		governing bodies
			7 (volunteers)	volunteers/unqualified officials or administrators/unpaid coaches		
			8 (increasing efficiency)	increasing efficiency/increased govt support/work of DCMS/an increasingly professional or businesslike approach (by clubs or organisations)/ positive impact of 2012		
			9 (organisations/example)	accept one of the following <u>with the linked feature</u> : UK Sport - excellence UKSI/EIS – excellence H S Councils –mass participation/start-say-succeed SCUK – develop coaching WSF/DES – mass participation or excellence by women or disabled YST – TopSport -helps sports colleges/mass participation SDOs – mass participation/develops partnership		e.g. Sport England

Question			Expected Answer	Mark	Additional Guidance	
					Accept	Do not accept
2	(c)	(ii)	How does sportscoach UK achieve its aims?		[3]	
			1 (training)	provides workshops or training or courses for coaches/provides specialist high performance workshops/runs <i>coaching for teachers</i> scheme		runs coaching courses/provides coaching/provides coaches
			2 (resources)	produces resource or books or videos/ <i>coachwise</i> Ltd sells resources/funds coaching research		produces magazine Coaching Edge (formerly Faster, Higher, Stronger)
			3 (links)	works with other organisations to promote coach education/works with NGBs or key funding agencies to develop coaching		
			4 (coach development officers)	support network of regional coach development officers		
			5 (coaching levels)	standardises levels of coaching within or across sports/structures sports coaching UKCC/aims to develop coaching system in UK in preparation for the 2012 Olympic Games/coaching task force/First 4 Sport		
			6 (award)	Coach of Year award		

Question		Discuss the relationship between high level sport, sponsorship and the media.
2	(d)	<p>6 marks in total:</p> <p>Level 3: 5-6 marks (comprehensive)</p> <ul style="list-style-type: none"> • well developed answer. • sound knowledge and understanding of strong links. • developed discussion. • well structured. • possibly some independent opinion /judgement/analysis. • at the top of this level all three components of the question have been understood and addressed. <p>Level 2: 3-4 marks (competent)</p> <ul style="list-style-type: none"> • developed answer • knowledge and understanding of links but possibly lack of balance. • limited discussion. • some structure. • limited or no opinion/judgement/analysis. <p>Level 1: 1-2 marks (limited)</p> <ul style="list-style-type: none"> • simplistic/narrow/limited answer. • limited knowledge and understanding of the links. • facts rather than discussion. • limited structure/possibly disjointed. • at bottom of this level, very little grasp of what is relevant to the issue.

		Indicative content
1	(GT)	'golden triangle'
2	(stronger relationship)	stronger relationship in recent years/many hours of coverage/newspapers or supplements
3	(commercialisation)	commercialism/ 'Americanisation' of sport/big sporting events as entertainment
4	(profit)	sport big business or for profit or large amounts of money made/a media commodity/business methods or management techniques now used
5	(interdependence)	sport and media depend on each other
6	(+-)	relationship has advantages and disadvantages
7	(pressure)	increased pressure to win/win at all costs/Lombardianism
8	(minorities)	low profile sports or sports of minority groups get little media attention – so little sponsorship – so unable to market themselves aggressively eg Premier League football v netball
9	(sport stars)	sport stars made/celebrity status
Media		
10	(TV)	TV most powerful aspect of media/other types of media
11	(roles)	different roles of media
12	(Sky)	impact of: Sky or cable or digital or Pay Per View or broadcasting rights
13	(fashion)	sports clothing industry developed by media
14	(influence)	media influences or controls some aspects of events/eg rules or scheduling
15	(deviance)	match fixing/other examples of deviance due to relationship
16	(role models)	potential for role modelling – positive or negative
Sponsorship		
17	(sponsorship)	sponsorship increased by media coverage
18	(stability)	gives sport stability or popularity
19	('big' sports)	'big' sports can have control over their sponsors
20	(amenities)	improved amenities for spectators

Quality of Language

Three marks are available for the quality of Written Communication.

High: A well reasoned, well ordered developmental explanation.
In clear, concise and continuous prose.
Sentences and paragraphs follow on from one another smoothly and logically.
There will be **few, if any, errors** of grammar, punctuation and spelling.

3 marks

Middle: Reasoned statements employing **sound** use of language.
Candidates express straightforward ideas clearly.
Sentences and paragraphs may not always be connected.
There may be **some errors** of grammar, punctuation and spelling, but not such as to suggest a weakness in these areas. **2 marks**

Low: An attempt at explanation with limited quality of language.
The candidate expresses simple ideas clearly but may be imprecise and awkward in dealing with complex or subtle concepts.
Errors in grammar, punctuation and spelling may be **noticeable** and **intrusive** suggesting weaknesses in these areas. **1 mark**

2565 Physical Education: Historical, Comparative, Biomechanical and Sport Psychology Options

Section A

Historical Studies in Physical Education

- 1 (a) (i) Which characteristics of public schools lead to each of the following features of public school games? [3]

3 marks total:

1	(time to play)	Boarding
2	(specialist facilities and equipment)	Fee paying/endorsed/trustees
3	(development of values such as courage and determination)	Spartan

- (ii) Explain the 'melting pot' influence that occurred in public schools. [2]

2 marks total:

FOR
EITHER

1	(explanation 1)	Popular recreations brought from home to schools by boys
2	(rules 1)	Adapted games developed in public schools/own school versions
3	(explanation 2)	When boys went to university/mixture of different school rules.
4	(rules 2)	Standardisation of rules/Cambridge rules

OR

- (iii) Explain how public schools and their ex-pupils influenced the emergence of rational sport. [3]

3 marks total:

1	(other schools)	(Influenced other schools)/middle class 'copies' of the gentry schools founded
2	(teaching)	Teachers returned to school they had attended.
3	(army)	Army took games abroad/spread amongst ranks
4	(church)	Via the church/via vicars or priests/via church youth clubs
5	(industry)	Industrial leaders/giving opportunity and/or provision to workers
6	(family)	Influence on own children/influence in family
7	(community)	Community leaders/provision of community facilities/
8	(clubs)	Formation of sports clubs
9	(University/NGBs)	Standardisation of rules at university/National Governing Bodies (NGBs) formed by old boys

- (b) (i) **Explain the impact of socio-cultural factors on the characteristics of popular recreation.** [6]

6 marks total – see levels mark scheme

Level 3: 5 – 6 marks

- at the top of this level, a comprehensive and well developed answer
- shows good knowledge and understanding of how different socio-cultural factors impacted on the nature of popular recreations
- a clear explanation of how socio-cultural factors impacted on popular recreations

Level 2: 3 – 4 marks

- satisfactory knowledge and understanding of how different socio-cultural factors impacted on the nature of popular recreations
- an attempt at explanation of how socio-cultural factors impacted on popular recreations

Level 1 : 1 – 2 marks

- shows limited/superficial knowledge or understanding of how different socio-cultural factors impacted on the nature of popular recreations
- limited or no explanation – likely to be purely descriptive.

Candidates are likely to make the following points:

Popular recreations were:	because	Socio-cultural factors
1 Local	2	Limited transport and/or communications
3 Uncodified/simple rules/limited organisation	4	Illiteracy/no NGBs
5 Cruel and/or violent	6	Reflection of life and times
7 Occasional/festival	8	Seasonal time/free time on Holy Days or annual holidays
9 Rural	10	Before industrial revolution/before migration to towns
11 Occupational	12	Work sometimes became the basis of play
13 Wagering	14	Rags to riches
15 Courtly and popular/upper class and peasant class	16	Two class society/feudal system
17 Natural/simple	18	No technology/little money

- (ii) Give reasons for the development of sports and pastimes in river towns in pre-industrial Britain. [3]

3 marks total:

1	(natural)	River a natural facility (playground)
2	(middle ages)	Ability to swim was part of Chivalric code in Middle Ages/patronage of lower class swimmers by upper class/wager races organised/lower class swimmers as swimming 'masters' (teachers)
3	(recreational)	Bathing for pleasure recreation/'fun' in summer
4	(survival etc)	Survival/safety/hygiene/to wash/fishing/food
5	(water meadows)	Adjacent meadows for other community sports and pastimes/eg athletic sports or games or horse racing or shooting.
6	(winter)	When frozen river used for sliding/skating/ice fairs
7	(rowing)	Rowing developed/rowing water races/Doggett Coat and Badge

- (c) Describe amateurism and professionalism in rationalised cricket. [4]

4 marks total:

1	(class)	Amateurs were middle/upper class/ex-public schoolboys/professionals were working class
2	(definitions)	Amateurs took part for love of game/professionals took part for a job
3	(William Clarke)	early professional touring sides eg. William Clarke XI
4	(differences 1)	Professionals socially inferior/professionals and amateurs had different travel/eating arrangements/names different in programmes etc
5	(differences 2)	Captain always amateur/opening bat always amateur/amateur would bat – professional bowl
6	(respect)	Amateurs recognised skill of professionals but wanted to keep them in their place/professionals respected
7	(money for amateurs)	Some amateurs became wealthy through cricket/W G Grace a 'shamateur'
8	(coaching)	Professionals coached in public schools
9	(transport)	Professionalism grew due to improved transport

TOTAL 21 MARKS

- 2 (a) (i) Identify the Outdoor Education programme in French primary schools.

Describe two of the components of this programme.

[3]

3 MARKS IN TOTAL

One mark max for identification

1	Les Classe Transplantee
---	-------------------------

Two marks max for two components

2	(Classe de Nieve)	<u>Classe de Neige</u> classes of snow/skiing/snow activities/a combination of academic and skiing classes.
3	(Classe de Vert)	<u>Classe de Vert</u> countryside classes/classes involving hiking/orienteering/expedition activities/a combination of academic and countryside classes.
4	(Classe de Mer)	<u>Classe de Mer</u> classes involving the sea/aquatic activities/a combination of academic activities and aquatic classes.

- (ii) What has the French government done to improve the quality of sport and Physical Education in French schools? [4]

4 marks in total:

1	(Decentralisation)	Decentralised control responsibility for control given to schools.
2	(Teacher training)	Improved teacher training/improved teaching qualifications/CA PEPS/Sports Science degree/STAPS.
3	(Examination)	Physical Education is examined/can be part of the Baccalaureate.
4	(Inspection)	Regular inspection of all schools/inspection every two years.
5	(Joint provision)	Joint provision of facilities/facilities shared with community/sports club/high quality of facilities.
6	(UNSS)	Union du Sport Scholaire/UNSS deliver sport to children/teachers work with UNSS to deliver sport to children.
7	(Sport Study Sections)	Sport Study Sections/departments in high schools that specialise in sport/sport programmes/Sport programmes allow combination of academic study and sport.
8	(Primary Sports Schools)	Primary Sports Schools/specialist sports schools for primary children/non selective schools.

- (b) (i) Outline the factors that encourage mass participation in sport in Australia. [4]

4 marks in total:

1	(Government funding)	Government/Australian Sport Commission funding.
2	(Sports Development Group)	Sports Development Group/responsibility is given to a government group to develop mass participation
3	(Initiatives)	Active Australia/More Active Australia/Active Sports Policy are initiatives/scheme to increase participation.
4	(Tradition)	Tradition of participation/sports introduced/continued from the colonial period.
5	(Profile)	Sport has a high profile/media promotion/sport is a trend/use of role models
6	(Climate)	Favourable climate/climate promotes participation.
7	(High Schools)	Physical & Sport Education in High School promotes participation eg 100 mins PE & sport
8	(Primary School)	Fundamental Skills Programme in Primary School is designed to encourage participation teaches basic/essential skills.
9	(Sport Linkage)	Links between school and club encourage participation.
10	(Club initiatives)	Modified games in the clubs/games made easier for youngsters in the clubs/Aussie Sport legacy.

- (ii) Explain why Association Football is becoming more popular in Australia. [3]

3 marks in total:

1	(Governing Body)	A stronger Governing Body is in control/Stronger administration has helped popularity/Governing Body improving the image of football.
2	(Team names)	Teams names have changed/ethnic/racial/incidents have stopped/defused due to the changing of team names/team names changed e.g. Sydney Hellas is now Sydney Knights.
3	(Role models)	Increasing number of football role models/Australian players in English Premiership
4	(International success)	Success in International competition/success in 2006 World Cup
5	(School elective)	Popular school elective/option
6	(Australian Institute of Sport)	Australian Institute of Sport (AIS) has given support to football.
7	(Media)	Media support for football/media is now sympathetic to football/one media outlet determined to make this sport the national game.

- (c) Explain why American Football (grid iron) is a popular sport in the U.S.A. [7]

7 marks in total:

Levels mark scheme

Level 3: 6 – 7 marks

At the top of this level the answer will be comprehensive with points having been developed. A detailed explanation of the popularity of the sport will be given. The answer will show sound knowledge and understanding.

Level 2: 3 – 5 marks

The answer will have a structure and some points have been developed to achieve the top of the level. An explanation of the popularity of the sport will be given. The answer will show knowledge and understanding.

Level 1: 1 – 2 marks

An answer showing limited/superficial knowledge and understanding of why the sport is popular. The answer may lack structure. At the top of this level only one point may have been developed.

Indicative Content

1	(Culture)	The sport suits American culture.
2	(Entertainment)	Games are seen/designed to be entertaining.
3	(Entertainment)	Entertainment outside of the games eg cheerleaders/side attractions
4	(Sensational)	Games demand speed/are fast/intense action
5	(Sensational)	Collision/high impact/aggressive/(leave) capacity for violence
6	(High scoring)	Games can be high scoring
7	(Winning)	Game produces winners/no draws/Lombardian ethic
8	(Media)	Media gives the sport a high profile/media hype up games/extensive/intensive media coverage/strong culture of spectatorism through the media.
9	(Commercialism)	Sport is a business/promoted/marketed as business.
10	(Frontierism)	Game tends to reflect frontier spirit/in keeping with the spirit of America/Sport is seen as the last frontier.
11	(Isolation)	Reflect policy of isolation/America's own game/America did not want colonial games.
12	(Americanisation)	Immigrants took to the American game/rejected European traditional games.
13	(Family)	Emphasis on family entertainment/families watch matches.
14	(Little League)	Opportunities for youngsters in Little League programme.
15	(Schools)	High status/high quality of performance in school attracts interest.
16	(College)	Popularity through College sport
17	(American Dream)	Sport is seen as part of the American Dream/supporters live the Dream through players.

Total 21 marks

Quality of Language

Three marks are available for the quality of Written Communication.

- High:** A well reasoned, well ordered developmental explanation.
In clear, concise and continuous prose.
Sentences and paragraphs follow on from one another smoothly and logically.
There will be **few, if any, errors** of grammar, punctuation and spelling. **3 marks**
- Middle:** Reasoned statements employing **sound** use of language.
Candidates express straightforward ideas clearly.
Sentences and paragraphs may not always be connected.
There may be **some errors** of grammar, punctuation and spelling, but not such as to suggest a weakness in these areas. **2 marks**
- Low:** An attempt at explanation with limited quality of language.
The candidate expresses simple ideas clearly but may be imprecise and awkward in dealing with complex or subtle concepts.
Errors in grammar, punctuation and spelling may be **noticeable** and **intrusive** suggesting weaknesses in these areas. **1 mark**

Section B

Biomechanical Analysis of Human Movement

3 (a) Fig 1 shows the amount of force applied to a discus during a throw.

- (i) Define the term impulse. Using the information on the graph, calculate the value of the impulse of force acting on the discus during the throw. [3]

3 marks in total:

- 1 Impulse = Force x time/Ft/Change in momentum/mv – mu
- 2 Impulse = Area under Ft curve
 $= (\frac{1}{2} \times 0.5 \times 200) + (\frac{1}{2} \times 0.25 \times 200)$
 $= 50 + 25$
- 3 Impulse = 75Ns (Units must be correct)

- (ii) If the mass of the discus is 1.5kg, calculate its outgoing velocity. [2]

2 marks in total:

- 1 Impulse = change in momentum / Ft = mv – mu
 $75 = 1.5v$
 $v = 75/1.5$
- 2 $v = 50\text{ms}^{-1}$ (units must be correct)

- (iii) Explain how the use of follow through would affect the motion of the discus. [4]

4 marks in total:

- 1 The force is applied to the discus for longer
- 2 Increase in impulse of force acting on discus
- 3 Increase in (outgoing) momentum of discus
- 4 Increase in (outgoing) velocity/speed of discus
- 5 Discus is thrown further

- (b) Explain how a lift force can be generated by the discus during its flight. [5]

5 marks in total:

- 1 Lift force is caused by Bernoulli Effect
- 2 Discus adopts aerofoil shape
- 3 Discus creates an angle of attack to the direction of airflow
- 4 Air travels further over the top of the discus (or opposite)
- 5 Air travels faster over the top of the discus (or opposite)
- 6 Low pressure is created above the discus (or opposite)
- 7 Lift force formed from pressure gradient of high to low pressure

- (c) **An athlete performs with rotation prior to the release of the discus. Identify the axis of rotation through which the discus thrower rotates and explain how the thrower uses the Law of Conservation of Angular Momentum to enhance performance.** [7]

Levels marked question:

Level 3 6 – 7 marks

Responses will show understanding of the concepts involved in the Law of Conservation of Angular Momentum and correctly identify the axis of rotation. There will be a full, coherent explanation of the changes that take place during both phases of the throw using the correct technical language. Responses at the lower end of this level may not demonstrate the link with the analogue of Newton's First Law of Motion.

Level 2 3 – 5 marks

Responses should identify correct axis of rotation and show some understanding of the concepts involved. Explanation should be coherent but points will be missed and phases of the throw may not be fully related.

Level 1 – 2 marks

Responses will be limited and explanation lack clarity. For the top of this level the correct axis of rotation should be identified and phases of the throw should be referred to.

Indicative content. 7 marks in total:

- 1 (Axis of rotation) Longitudinal
- 2 (Concept 1) Analogue of Newton 1 states that an athlete will continue to rotate with constant angular momentum
- 3 unless acted upon by an unbalanced/net/external torque/moment of force.
- 4 (Concept 2) MI/Moment of Inertia is the body's resistance to rotate/change angular motion.
- 5 (Concept 3) Angular velocity/speed/ ω is the rate of spin of a body.

(Start of rotation)

- 6 Generate angular momentum
- 7 By applying moment of force/torque to athlete
- 8 Friction/force at feet being applied outside axis of rotation/longitudinal axis
- 9 Large MI/body parts/arms and leg a long way from axis of rotation
- 10 Small ω /angular velocity/rate of spin

(During throw)

- 11 Reduce MI/bring body parts/arm and leg/towards axis of rotation
- 12 Increases ω /angular velocity/rate of spin
- 13 Release speed of discus is greater/discus is thrown further.

Total 21 marks

Psychology of Sport Performance

4 (a) Having an effective leader can be important for team success.

- (i) Identify three characteristics of a good leader in sport. Give a practical example of how each characteristic can help team success. [3]

**3 marks for 3 from (Must have practical example for each):
Only mark 1st three responses**

- 1 Good communication skills
- 2 Good motivator.
- 3 Highly motivated/enthusiastic/determined
- 4 Good at making decisions
- 5 Clear goal/vision
- 6 Empathy/gets on well with team mates/can see others' points of view/approachable
- 7 Good at sport themselves/lead by example?
- 8 Good knowledge of the sport
- 9 Charismatic/has presence/commands respect/influential

- (ii) Explain when an autocratic leadership style and a democratic leadership style could be used by an effective leader to maximise the success of a sports team. [6]

Levels marked

Level 3: 5–6 marks

Candidate explains fully how both styles are used and at the top of this level, relevant practical examples of team success are used. The points are wide ranging.

Level 2: 3–4 marks

Candidate explains both styles.

Level 1: 1–2 marks

Candidate describes rather than explains.

Indicative Content:

(autocratic)

- 1 (Fiedler) Task style better in situations that are extremely favourable and extremely unfavourable/extremes of favourableness.
- 2 If lack of time/time too short for more democratic approach.
- 3 If in a dangerous situation to have control for health and safety.
- 4 In early stage/cognitive stage of learning to establish what is required.
- 5 For large groups when communication is difficult/when control could be lost.
- 6 Males prefer autocratic style.
- 7 If leaders personality is task orientated/autocratic/authoritarian.
- 8 When task is clear/unambiguous/task orientated
- 9 When discipline and control is needed/hostile groups/weak authority/position/to gain control.
- 10 For team players who generally prefer training and instruction style.

(Democratic)

- 11 (Fiedler) In situations that are moderately favourable.
- 12 Plenty of time available
- 13 Task structure is not dangerous and therefore allows other ideas.
- 14 For more advanced performers who have knowledge to contribute.
- 15 For small numbers/individuals because communication is easier.
- 16 Females prefer democratic/social approach.
- 17 If leader's personality lends itself to democratic/social approach.
- 18 When task demands greater interpersonal communication/person orientated
- 19 When group member's can/wish to participate in decision-making/those who prefer democratic approach.
- 20 To motivate group members/ownership/feel valued.
- 21 If demands of situation is social (friendly match).
- 22 If leader and group members are well known to each other.

- (b) **The levels of arousal in individuals can often affect their performance in sport.** [6]

Explain, using practical examples, how:

- the personality of the performer
- the ability level of the performer
- the complexity of the task.

can each affect levels of arousal and therefore sports performance.

nb If inverted U theory drawn – look for explanations for marks to be gained.

Sub max 2 with no practical examples

(Personality variable) sub max 2

- 1 Extroverts like/may perform well in front of others/extroverts seek high arousal/extroverts have low internal arousal/low arousal in the brain/cerebral cortex (reticular activating system explained).
- 2 Because they (extroverts) seek stimulation (from external sources/crowds/audience).
- 3 Introverts may not perform well in the presence of others/Introverts seek low arousal/they have high internal arousal (reticular activating system explained).
- 4 Because they (introverts) do not affiliate socially/do not seek stimulation.
- 5 High need to achieve/high achievers/very competitive personality seeks high arousal (opposites apply eg those with learned helplessness/NAF performers seek low arousal).
- 6 Highly confident/high self-efficacy performers seek high arousal (opposite applies).
- 7 Personality linked to attentional control that is affected by arousal.

(ability level) sub max 2

- 8 High ability do well with high arousal/low ability do not do well with high arousal/high ability do not do well with low arousal/low ability do well with low arousal.
- 9 Intermediate/most/do well in situations of moderate arousal.
- 10 High ability have automatic/learned responses/motor programmes and can cope with high arousal (opposite applies).
- 11 Arousal level affects attention to cues/cue utilisation difficult if arousal too high or too low.
- 12 Low ability/novices/may be distracted/attention is over-wide/narrow/difficulty in selective attention therefore prefer low/moderate arousal.
- 13 High ability can often use stress management techniques/can control their emotions/arousal effectively.
- 14 The zone of optimal functioning/ZOF/peak flow experience is reached when arousal levels are optimal.

(complexity of task) sub max 2

- 15 If task is complex/difficult/open then arousal needs to be kept under control/moderate/low.
- 16 If task simple/closed high arousal often needed.
- 17 Dynamic/gross tasks usually require high arousal.
- 18 Fine/aiming tasks usually require low arousal.
- 19 Arousal can affect attentional control/can distract (be aware of repeated point 11).

- (c) **Aggressive behaviour in sport can lead to a decrease in performance both for individuals and for the team. [6]**

As a sports coach explain how you would help team members eliminate aggressive tendencies. Use practical examples to illustrate your answer.

Levels Marked

Level 3: 5–6 marks

Candidate identifies and explains fully different methods with fully explained relevant practical examples.

Level 2: 3–4 marks

Candidate identifies, with some explanation, but mostly describes different methods with some relevant practical examples.

Level 1: 1–2 marks

Candidate identifies with very little description/explanation and with few or no relevant practical examples.

Indicative Content:

- 1 Cognitive techniques/lower psychological arousal.
- 2 Count to ten/mantra/concentrate on repeating words/phrases/positive self talk.
- 3 Imagery/imagine calm/control/quiet place.
- 4 Mental rehearsal of activity/imagining ones own actual movement.
- 5 Forgetting/distancing from aggressive cues/walking away/removing yourself from situation/negative thought stopping.
- 6 Play harder/channel assertion (aggression) in game
- 7 Take up an activity, which will release tension/aggression/take an interest/ be motivated by non-aggression/displace feelings/take it out on something else.
- 8 Reasoning that aggression is wrong/knowing consequences.
- 9 Somatic techniques/lower somatic/physiological arousal.
- 10 Progressive relaxation techniques/yoga/meditation/breathing techniques
- 11 Use biofeedback/information on physiological arousal is recognised and dealt with.
- 12 Give role/(position of) responsibility.
- 13 Punish player/withdraw player/time out.
- 14 Remove aggressive cues/change of position.
- 15 Positively reinforce positive/assertive/non-aggressive behaviour (accept opposite)
- 16 Use non-aggressive/assertive role models/use of peer pressure.
- 17 Stress performance goals/ decrease importance of the event.

Total 21 marks

2566 Exercise and Sport Physiology and the Integration of Knowledge of Principles and Concepts Across Different Areas of Physical Education

Section A – Exercise and Sport Physiology

1 (a) Fig. 1 shows the energy systems being used at the start of a session of aerobic exercise.

(i) The shaded area in Fig. 1 represents the time during which the performer works anaerobically.

Identify the energy system A and the energy system B.

[2]

2 marks in total.

1. A = (ATP) PC/CP/lactic/phosphogen
2. B = LA/lactic acid/anaerobic glycolysis/lactacid

(ii) During exercise lactic acid will accumulate in the blood and muscles.

Describe the effects lactic acid has on the performer's body. Explain how lactic acid is removed from the body.

[4]

4 marks in total.

2 marks for effect of lactic acid

CRAMP = no mark

1. leads to fatigue/pain/soreness/tiredness
2. increase in acidity/decrease in pH (of blood and muscles)
3. denatures/inhibits enzyme action (glycogen phosphorylase & PFK)/stops the breakdown of glycogen/glucose/fats

2 marks for removal of lactic acid

4. removed during lactacid debt component/slow component of EPOC
5. requires oxygen/use of aerobic system
6. (is oxidised to) H₂O and CO₂
7. is converted to glycogen/glucose (in the liver)/cori cycle/glucose
8. is converted to protein
9. removed in urine/sweat
10. removal can be **speeded up** by the use of active recovery/cool down

- (b) The onset of blood lactate accumulation/OBLA can be expressed as a percentage of $\dot{V}O_2$ max.

An untrained performer reaches OBLA at 55-60% of $\dot{V}O_2$ max.

A trained performer can delay OBLA until 85-90% of $\dot{V}O_2$ max.

Define both OBLA and $\dot{V}O_2$ max.

Explain the physiological adaptations of aerobic training in skeletal muscle that delay OBLA in a trained performer.

[5]

5 marks in total

2 marks for definitions

(OBLA)

1. reaches 4mmol per litre/the point (during increasing exercise intensity) where the concentration of lactic acid in the blood **suddenly** increases

($\dot{V}O_2$ max)

2. the **maximum** amount of **oxygen** that can be taken in and **used/utilised/consumed** by the body in **one minute**

3 marks for explanations of aerobic adaptations

(Muscle)

3. (mitochondria) increased size/number of mitochondria **which allows** for **more** efficient respiration/more energy produced.
4. (myoglobin) increased myoglobin content **allowing increased** oxygen carrying capacity/**storage** within the muscle
5. (capillary) increased capillary density within the muscle which **allows** for **more** efficient gaseous exchange/oxygen in/ carbon dioxide out
6. (hypertrophy or hyperplasia) of slow twitch muscle fibres which **allows more** respiration to take place
7. (glycogen) increased stores of muscle glycogen/triglycerides which **allows more** fuel to be broken down during respiration
8. (aerobic enzymes) increased activity of aerobic enzymes **which improves** the aerobic breakdown of glycogen/fats
9. (buffering) increased buffering capacity **which means** that lactic acid is oxidized **more quickly** in the muscles/less lactic acid is produced at the same exercise intensity/**increased** tolerance to lactic acid

- (c) **Fig. 2 shows how exercise intensity determines the type of food fuel used for energy creation. The duration of exercise can also affect the type of food fuel used.** [4]

Explain how intensity and duration of exercise play such an important role in the type of food fuel used by a performer.

4 marks in total

(carbohydrates) (accept glycogen/glucose/CHO)

1. carbohydrates are the major fuel used during high intensity work (> 30% VO_2max)/for exercise lasting less than 20 minutes
2. (at high intensity exercise the body works anaerobically and) only carbohydrates can be broken down anaerobically/cannot metabolise fats
3. the lactic acid system is dominant which uses carbohydrate as a fuel
4. lactate build up in the blood and muscles inhibits aerobic enzyme action/PFK/fat metabolism
5. at high intensity exercise fast twitch muscle fibres are recruited which contain few aerobic enzymes (cannot metabolise fats)

(fats) (accept lipids/triglycerides)

6. fats are the major food fuel during low intensity work (< 30% VO_2max)/for exercise lasting longer than 20 minutes
7. (after 20 minutes of exercise) the aerobic system is dominant which can use fats as a fuel
8. fat metabolism requires (15%) more oxygen/can only occur after a certain time when there is sufficient oxygen in the body
9. at lower intensity exercise slow twitch muscle fibres are recruited which contain many aerobic enzymes/can metabolise fats

(proteins)

10. only used towards the end of aerobic exercise/when body is close to exhaustion/energy can not be obtained from glycogen or fats
11. a constant supply of oxygen is needed
12. releases the same amount of energy as carbohydrates/approx 4 kcal per gram

TOTAL KNOWLEDGE MARKS = 15

2 Synoptic Question – Scientific focus

(a) (Application of Anatomical and Physiological Knowledge to Improve Performance)

Sub-maximal activity is exercise of long duration and low to medium intensity.

Sketch a graph to show changes in heart rate before, during and after a long run of submaximal exercise intensity.

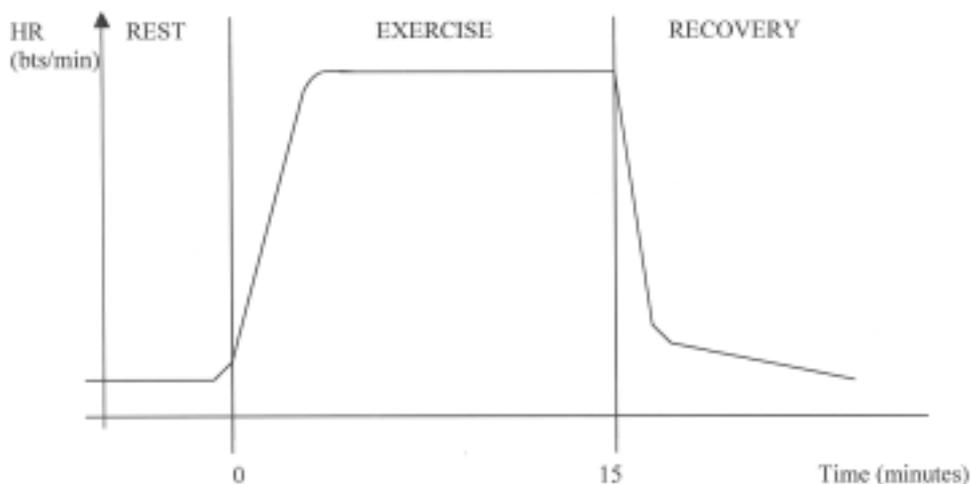
MARK SCHEME

- Bar chart can get point 1 only;
- Accept if zones indicated;

Graph

(submax 3)

1. (axes) both axes correctly labelled with units
2. (rest) showing slight increase in heart rate just before exercise/anticipatory rise
3. (exercise) showing a sharp increase in heart rate followed by a plateau/steady state
4. (recovery) showing a rapid decrease followed by slower decrease in heart rate



During exercise there will be an increased demand for oxygen by the working muscles.

Describe and explain the mechanism that the body uses to distribute cardiac output during exercise.

MARKSCHEME

Distribution of cardiac output during exercise (submax 6)

5. vascular shunt mechanism/(redistributes blood during exercise so that) areas with the greatest need receive more blood/areas with low demand receive less blood
6. up to 88% of cardiac output can be redistributed to the muscles during intense exercise
7. through vasodilation of arteries/arterioles feeding working muscles
8. and vasodilation/opening of precapillary sphincters feeding working muscles
9. through vasoconstriction of arteries/arterioles feeding other organs (eg liver/kidney/intestines)
10. and vasoconstriction/closing of precapillary sphincters feeding other organs (eg liver/kidney/intestines)
11. controlled by the vasomotor control centre/VCC
12. VCC located in the medulla oblongata of the brain
13. VCC responds to changes in blood pressure/muscle/blood chemistry
14. chemoreceptors detect changes in lactic acid/carbon dioxide/oxygen/pH/content of blood
15. chemoreceptors located in muscles/aorta/carotid arteries
16. baroreceptors detect changes in blood pressure
17. baroreceptors located in aorta/carotid arteries
18. VCC can control diameter of arterioles/precapillary sphincters via the sympathetic nervous system
19. which acts on the middle layer of smooth muscle in an arteriole/the ring of smooth muscle at the opening of a capillary (precapillary sphincter)

After exercise, to maintain venous return, a performer may carry out a cool down.

Describe the importance of venous return and explain how exercise levels during a cool down help to maintain venous return.

MARKSCHEME

Venous return and cool down

(submax 6)

(venous return)

20. the flow of blood through the veins back to the heart/right atrium
21. stroke volume is dependent on venous return/venous return determines stroke volume/cardiac output
22. Starling's law of the heart
23. if venous return decreases, stroke volume decreases/if venous return increases, stroke volume increases/maintains stroke volume/cardiac output

(cool down helps to maintain venous return by:)

24. (continued skeletal muscle contractions) maintain muscle pump
25. **skeletal muscles** contract and push against the vein walls/helps to squeeze/push blood up towards the heart
26. the valves in the veins open and close with the pressure to prevent any backflow of blood
27. (continued exercise maintains respiratory rate that) maintains respiratory pump
28. breathing remains deeper
29. creating pressure changes in the thorax/abdomen
30. (during inspiration) diaphragm flattens
31. **pressure increases** in abdomen/compressing veins/this helps to **squeeze**/push blood up towards the heart
32. prevents blood pooling in veins

TOTAL KNOWLEDGE MARKS = 13

(b) Feedback is important in the learning of movement skills.

Explain the main functions of feedback in the learning of movement skills. (submax 5)

1. motivation/to give incentive/drive
2. encourage persistence/to carry on
3. improve confidence/lower anxiety/stress
4. detect errors/to correct actions/give information about technique/knowledge of performance/KP
5. to prevent bad habits/to stop errors occurring in the first place
6. **reinforce** correct actions/movements
7. reduce inhibition/prevent drive reduction/offset plateau effect
8. (intrinsic feedback) enables kinaesthesia/proprioception/getting the feel of the skill
9. (negative feedback) punishes learner if wrong
10. knowledge of results/gives information about the end result/KR

The transfer of learning can help or hinder the learning of movement skills.

Identify and describe three different types of transfer that occur in practical performance.

Explain how a teacher/coach can ensure that transfer of learning helps the learning of movement skills.

(Three types of transfer) (submax 3)

11. positive transfer – helps the learning/performance of skills
12. negative transfer – hinders the learning/performance of skills
13. proactive transfer – helps/hinders learning/performance of skills yet to be learned
14. retroactive transfer – helps/hinders already learned skills
15. bilateral transfer – the learning/performance of skills from one limb to another

(ensuring effective transfer) (submax 3)

16. skill to transfer needs to be well learned/motor programme/grooved skill
17. environmental conditions need to be similar/replicating game situation
18. skill needs to be similar/have similar processing requirements/if responses are similar then more likely to be transferred/S-R bond similar
19. transferable elements need to be emphasised/coach points out what can be transferred/point out differences/learner is aware that skill can be transferred
20. reinforcement/praise will help/emphasise success from transfer/show positive results/positive feedback

There are a number of theories related to the learning of motor skills in sport.

Describe the operant conditioning theory of learning. (submax 4)

21. learning involves the stimulus-response/S-R bond/association between stimulus and response
22. trial and error is a feature
23. involves shaping/modifying behaviour
24. reinforcement is essential for learning/praise/punishment
25. responses not reinforced will be redundant/not be learned/retained/negative reinforcement/removal of stimulus
26. the effect of behaviour can affect future behaviour
27. (law of effect shows that if) the result of behaviour is satisfying then the same behaviour is repeated
28. (law of exercise shows that) practice/rehearsal/repeat of the S-R bond must take place
29. (law of readiness shows that) the individual must be physically/mentally ready for behavioural change

TOTAL KNOWLEDGE MARKS = 13

(c) (Exercise and Sport Physiology)

Strength training requires energy and involves periods of work followed by periods of recovery.

Define energy and explain the role of ATP in the muscle.

MARKSCHEME**Energy****(submax 3)**

1. the capacity/ability to perform work
2. only usable form of energy (in the body)
3. (made available in the body) from the breakdown of ATP/adenosine triphosphate/to give ADP + P + energy/used to create energy/work
4. ATP can be resynthesised
5. broken down by enzyme ATPase
6. in an exothermic reaction
7. occurs in sarcoplasm/mitochondria

Fig. 3 is a graph to show the changes in fuel stores in the muscle during a typical strength training session.

Identify fuel X and fuel Y and describe where in the body they are stored. Explain the shape of the graph for each fuel.

MARKSCHEME**Fuels during strength training session****(submax 6)**

8. X = phosphocreatine/PC/creatine phosphate
9. stored in muscle cell/sarcoplasm
10. Y = glycogen
11. stored in liver/muscle cell/sarcoplasm

(PC)

12. levels decrease during the work interval
13. muscles are using (ATP)PC system for energy/muscles are using PC as fuel for exercise/PC is being broken down for ATP resynthesis
14. levels increase during the rest interval
15. during the alactacid debt component of recovery/EPOC
16. aerobic system used to replenish muscle phosphogens/PC
17. 50% replenished in 30 seconds

(glycogen)

18. level remains the same during first work interval
19. because fuel is PC/glycogen not needed
20. (after this) levels decrease for remainder of session
21. during work intervals glycogen is used as fuel for exercise/muscles are using lactic acid system for energy/glycogen is being broken down for ATP resynthesis
22. during rest intervals glycogen is used as fuel for aerobic system during recovery/EPOC

Describe and explain the neural and physiological changes that occur to skeletal muscle after a period of aerobic weight training.

MARKSCHEME

Physiological adaptations to aerobic weight training (submax 5)

NB: Must hit a least 1 point from neural to access submax 5

(neural changes)

23. greater force can be generated during contraction
24. recruitment of more motor units
25. improved synchronisation of motor units
26. inhibition of tension threshold of Golgi tendon organ/autogenic inhibition delayed
27. muscle can withstand a greater force before Golgi tendon sends signal to CNS
28. improved coordination of antagonistic muscle pairs

(physiological changes)

29. muscle hypertrophy/muscle fibres have got larger
30. increased number of muscle fibres available for contraction
31. hyperplasia/muscle fibre splitting
32. increased aerobic capacity of muscle/increased amount of oxygen used in the muscle
33. increased mitochondrial density
34. increased myoglobin stores
35. increased glycogen stores
36. increased triglyceride stores
37. increased capillary density/capillarisation
38. increase in aerobic enzyme activity
39. increase in buffering capacity/tolerance to lactic acid/resistance to fatigue/work for longer

TOTAL KNOWLEDGE MARKS = 13

APPENDIX

Suggested links - not intended to be exhaustive

AS → AS	A2
<p>Heart rate curve during exercise</p> <ul style="list-style-type: none"> ↪ cardiac cycle/conduction system ↪ SV & Q ↪ control of heart rate 	<p>ATP resynthesis energy continuum recovery aerobic capacity physiological adaptations to training ergogenic aids motion force</p>
<p>Vascular shunt mechanism & venous return</p> <ul style="list-style-type: none"> ↪ cardiac output ↪ respiration at rest ↪ respiration during exercise 	

A2 → A2	AS
<p>Energy and ATP</p> <ul style="list-style-type: none"> ↪ ATP resynthesis ↪ reversible reactions ↪ coupled reaction 	<p>muscle fibre types heart rate control strengthening exercise heart rate response to exercise control of blood supply response to exercise respiratory response to exercise</p>
<p>Fuels interval training</p> <ul style="list-style-type: none"> ↪ lactic acid component of recovery/EPOC ↪ principles of training ↪ ergogenic aids 	
<p>Adaptations to aerobic strength training</p> <ul style="list-style-type: none"> ↪ ATP resynthesis ↪ principles of training ↪ aerobic capacity ↪ other types of strength training ↪ ergogenic aids 	

(d) BIOMECHANICAL ANALYSIS OF HUMAN MOVEMENT

Describe what is meant by friction and explain how sports performers manipulate friction to enhance their performance.

Spin is often used to control the flight path of balls in sport. Sketch a free body diagram showing all the forces acting on a ball with backspin during flight.

Explain how backspin affects the flight path of a ball.

(Friction) Submax of 8 marks from;

(description)

1. occurs when two surfaces have a tendency to slide/slide over one another
2. (friction is the force) that opposes motion
3. (friction) is parallel to the two surfaces
4. its value is determined by the roughness of the two surfaces
5. and the (Normal) Reaction force generated between the two surfaces

(improving performance) (opposites can apply)

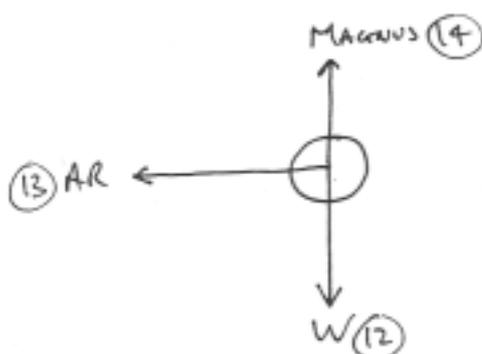
6. rougher the surface 1 (footwear, tyres, skis) = greater friction/more grip.
7. rougher the surface 2 (road, pitch, court) = greater friction/more grip.
8. warmer the surface = greater friction/more grip.
9. greater the (Normal) Reaction = greater friction/more grip.
10. greater the down force created by the vehicle/performer = greater friction/more grip.

(Spin) Submax of 8 marks from;

(Diagram)

11. direction of spin relative to direction of motion correct
12. weight acting downwards from CM
13. air resistance acting opposite direction of motion from CM/back of ball
14. magnus/lift/force acting upwards perpendicular to direction of motion

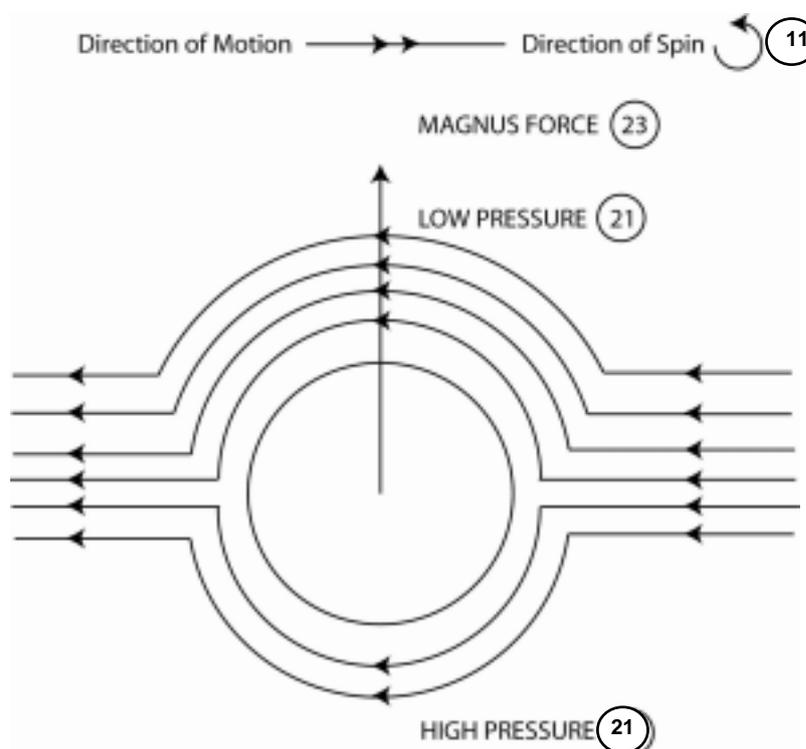
⑪ →→→ Direction of Motion ↺ Direction of Spin.



(d) (effect)

15. Backspin makes the flight path asymmetric/non parabolic.
16. Makes flight path longer/ball travels further.
17. Allows ball to travel more slowly in some sports to enable recovery.
18. Due to Magnus Effect.
19. Air travels further over the top of the ball.
20. Air travels faster on the top of the ball.
21. Creates low pressure on top of the ball/high pressure below the ball
22. Create low pressure gradient/high to low pressure (from below to above ball).
23. Creates a lift/upwards force/Magnus force on ball.

Students may use the following diagram



TOTAL 13 MARKS

SYNOPTIC LINKS

AS (with A&P)

Newton's Laws – N1 and N3
Angular motion – generation of spin

A2

Friction – N2 and N3
Spin – Comparison with topspin, sidespin
- other factors
- Bernoulli Effect
- Resultant forces and parallelogram law.

(e) Psychology of Sport

An audience or crowd at a sports event can affect performance both positively and negatively.

Explain the possible positive and negative effects of an audience on sports performance. (submax 6)

1. arousal/drive/anxiety/effort/motivation/nervousness increased
2. dominant response/more likely to occur/learned responses automatic/motor programmes are run
3. good performances from well learned/stronger/elite/correct dominant response produced
4. extroverts likely to perform better with an audience/Reticular activating system (RAS) favours extroverts when audience present
5. if audience in familiar setting performance helped/'homefield' advantage/disadvantage if away/unfamiliar/hostile environment
6. attention narrows for those who are used to audiences/high levels of ability/optimum cue utilisation
7. proximity of the audience/how close the crowd are to the player can either help or hinder
8. weaker players/novices performance deteriorates/incorrect dominant response
9. introverts likely to perform worse with audience present/RAS does not favour introverts
10. anxiety raised by being judged/perceived judgement of others/evaluation apprehension/the nature of the audience/who is in the audience
11. distractions/widening of attentional focus/utilisation of too many cues

Concentration is often important for a sports performer.

Explain the effect of different attentional styles on performance. (submax 6)

(ID) 12. (Nideffer) broad and narrow dimension

(ID) 13. external and internal dimension

(stimuli) 14. (broad) - attention takes into account a lot of information/peripheral stimuli/can enable performer to take in peripheral info (open skills)

(focus) 15. (narrow) - attention is on very few stimuli/concentrate on small amount of stimuli/information/cues/can enable performer to focus on important elements in the environment/watch the ball/take aim.

(environment) 16. (external) - Focus is on environmental stimuli/focus directed outwards

(escape from pain) 17. (external) can enable performer to concentrate on external factors (other than internal)/can escape inner pain/exhaustion.

(emotions) 18. (Internal) - Focus on themselves/emotions/thoughts

- (feel good) 19. (internal) - performer can concentrate on feeling good/zone of optimal functioning/ZOF/peak flow experience/control arousal
- (overload) 20. information overload/too much information can cause confusion
- (combat distinction) 21. the right attention can enable performers to deal effectively with distractions/will not be put off/selective attention
- (reaction time) 22. effective attention will improve reactions/reaction time/response time/movement time
- (optimism) 23. effective attention can prevent negative feelings
- (attribution) 24. enables positive attributions
- (differences in ability) 25. good performers can draw on a range/combination of different styles

Goal setting can help sports performance but the right type of goal needs to be set.

Explain what is meant by the setting of process, performance and product goals to improve performance in sport. (submax 5)

26. (process) concerned with technique/style
27. (process) directs attention/gives information/targets to be more successful/be able to progress with more effective techniques
28. (performance) comparison with previous attempts/judged against other performances/personal best
29. (performance) improving times/intermediate results/stepping stone to improve outcome
30. (product/outcome) focus on end result/to win overall/concerned with outcome of competition
31. (product) (gives) long term goal/can be used to aim even higher in the future/leads to progression/used as overall aim/may be just out of reach
32. goal setting can raise self confidence
33. goal setting can control arousal levels
34. goal setting can motivate/develop strategies to reach set goals/linked to achievement motivation
35. goal setting can direct attention/focus efforts
36. goal setting enables success to be experienced/gives feeling of achievement/satisfaction
37. goal setting can regulate the amount of effort expended on a particular task/ensures no wasted effort

TOTAL KNOWLEDGE MARKS = 13

SYNOPTIC LINKs

A/S	<>	A2
		Goal setting>achievement mot
Feedback>information processing		>confidence>anxiety>leadership
>operant conditioning>closed loop	<>	>attitudes.
>motivation>transfer.		
		Confidence>anxiety
Transfer>feedback>motivation	<>	>achievement mot.
>schema>operant conditioning		
		Confidence>social facilitation
Operant conditioning>feedback	<>	>stress management>aggression
>transfer>reinforcement>motivation		>Attention styles.
		Attentional styles>stress
Information processing>motivation.	<>	Management>confidence>
		Social facilitation.

Section B

3 (Socio-cultural focus)

Part one

(a) (Contemporary Studies in Physical Education)

What is meant by the term sponsorship and what are the roles of the media in contemporary sport?

Sponsorship**(submax 1)**

- giving of money or goods (to performers or teams) to get financial return or to improve/increase image/advertise

Roles of media**(submax 2)**

- inform
- entertain
- educate/increase knowledge
- advertise

Discuss the relationship between high level sport, sponsorship and the media. Submax 10:

General points:	
6. (golden triangle)	(sport, sponsorship & media form the) 'golden triangle'/interdependence/rely on each other
7. (+ -)	relationship has advantages and disadvantages
8. (stronger relationship)	Stronger relationship in recent years
9. (entertainment)	big sporting events now entertainment
10. (profit)	commercialisation or Americanisation of sport/sport big business or for profit/business methods or management techniques now used.
11. (money)	money from media & sponsorship give sport/s freedom or opportunity/facilities/equipment
12. (pressure)	increased pressure or pressure to win/win at all costs/Lombardianism
The Media	
13. (TV)	TV most powerful aspect of media/millions of viewers
14. (types)	other types of media eg newspapers, radio, internet etc/raise awareness of sport
15. (Sky)	impact of: Sky or cable or digital or Pay Per View or broadcasting rights (negative or positive)
16. (fashion)	industry of sports clothing developed by media
Sponsorship & media	
17. (sponsorship)	sponsorship increased due to media coverage/high media coverage attracts high sponsorship
Media & sport	
18. (commodity)	(high level) sport a media commodity/makes money/profits for media
19. (hours)	many hours of coverage/24 hr coverage/possibly over – exposure

20. (minorities)	low profile sports or sports of minority groups get little media attention - so little sponsorship - so unable to market themselves aggressively eg premier league football v netball.
21. (sport stars)	sport stars created/celebrity status achieved
22. (deviance)	match fixing/types of advertising/other examples of deviance/possible loss of integrity for sport
23. (role models)	potential for role modelling
24. (influence)	Media can influence or control aspects of sport/eg rules of scheduling
Sponsorship & sport	
25. (inexpensive)	sport considered a relatively inexpensive form of advertising
26. (stability)	Sponsorship gives sport stability or popularity
27. (instability)	Sponsorship can be withdrawn leading to instability
28. ('big' sports)	'big' sports can control their sponsors
29. (amenities)	improved amenities for spectators due to funding from sponsorship

TOTAL KNOWLEDGE MARKS = 13

Part Two**(b) (Historical Studies in Physical Education)**

Discuss the impact of the industrial revolution on the development of rational sports and recreations. (submax 10)

Initial changes	
1. (Rural to urban)	migration of lower classes from rural to urban areas/search for regular work
2. (space)	loss of space
3. (lifestyle)	from seasonal time to machine time therefore more structured lifestyle
4. (time)	loss of time/12 hour days/no time to 'play'/72 hour week
5. (money)	Poverty/low wages/working class as slaves to factory (1830s)/no money to play
6. (work conditions)	poor working conditions/pollution
7. (living conditions)	poor living conditions/lack of health and hygiene provision/disease/no energy
8. (loss of rights)	loss of right to take part in previous activities: eg mob football or blood sports/increased law and order/police force by mid century/less violent
Developments later in the century:	
9. (middle class)	middle class/new attitudes and/or ways of behaving/civilising process/manners and tastes changing/respectable
10. (regularity/competition/impact)	improved transport and communications/greater distances travelled by players/spectators/less time to get to places
11. (transport 2)	leagues/cups/competitions grew/games became regular/national
12. (time)	increased free time/1870-1890/Saturday 1/2 day – influence on spectatorism/week paid holiday by end of century/regular working hours
13. (media/literacy)	improved literacy of people/accessibility of media
14. (factory acts)	factory Acts improved conditions and opportunities for sport/improved pay (for some)
15. (Industrial patronage)	Industrial patronage/provision for sport by wealthy industrialists/factory teams/broken time payments
16. (excursion trips)	excursion trips provided by some factory owners
17. (church)	increased involvement of Church/acceptance and encouragement of sports and games/eg Sunday school teams
18. (purpose built facilities /parks/baths)	public baths/initially for hygiene and later for recreation eg swimming galas for middle class/stadia/equipment/provision of public parks/improved purpose built facilities
19. (public school boys)	influence of ex-Public Schoolboys in industry or the Church or local Government – new ways of and reasons for taking part/values of Athleticism spread to lower classes
20. (codification/NGB's)	Development of rules/governing bodies

Account for the growth of lawn tennis as a rational recreation.**(submax 8)**

21. (substitute)	substitute for upper class game of real tennis/middle class could not play real tennis.
22. (fashion)	became fashionable/sold to middle class/socially acceptable/respectable
23. (privacy)	could be played in own gardens/high walls and hedges to maintain privacy
24. (female participation)	suitable for females/did not have to be too strenuous/allowed women to play
25. (stereotypes)	helped to remove some stereotypes of earlier Victorian times.
26. (dress)	did not initially require special dress/they could stay covered.
27. (social)	social occasion/a place for young men and women to meet
28. (clubs)	clubs formed/NGB/LTA
29. (exclusivity)	clubs exclusive so that middle class didn't have to 'mix' below themselves
30. (Wimbledon)	fashion encouraged by start of Wimbledon championships/role models
31. (schools 1)	adopted by exclusive girls' schools
32. (schools 2)	played as informal or low status or house or social games in boys public schools.
33. (family)	whole family could play together

TOTAL KNOWLEDGE MARKS = 13

(c) (COMPARATIVE STUDIES IN PHYSICAL EDUCATION)

Outline the characteristics of ethnic games as they are played in France.

(submax 6)

Characteristics of Games 6 marks max	
1. (Local champion)	a local champion is recognised/local champion has great prestige/status
2. (Location 1)	remote/rural locations/isolation
3. (Location 2)	unique to a particular area eg Basque region/Provence region for bull fighting
4. (Tradition)	historical/traditional games
5. (Structure)	simple rules/unsophisticated activities/often a reflection of the working environment/simple equipment
6. (Entertainment)	opportunities for fun/gambling/celebration/social/festival
7. (Political)	appeasement of ethnic groups
8. (Identity)	maintains community identity/significant for community
9. (Ritual)	often ritualistic/associated with ceremony
10. (Manliness)	participants tend to be male/games are proof of manliness
11. (Tourist)	games have become tourist attractions/in recent times commercial opportunities have emerged

Compare the organisational, cultural, and geographical factors that influence the production of Olympic champions in the U.K. with those of either Australia or U.S.A.

(submax 10)

	U.K.	Australia	U.S.A.
Organisation			
12. (Centres of Excellence)	United Kingdom Sports Institute (U.K.S.I.)	Australian Institute of Sport (A.I.S.)	Centre of excellence is the College (American University equivalent)
13. (Selection to centres)	Via clubs /Governing Bodies	Via Schools and Clubs eg Sports Linkage	Via Schools eg Sports Scholarship
14. (Location/ structure of Centres)	Centres of Excellence are decentralised in all countries		
	Each home country has its own institute eg English Institute of Sport	A.I.S. located in each State eg VIS	Colleges (Universities) are distributed throughout USA.
15. (Government funding)	Government funding for UK and Australia		Small government funding
16. (Distribution of funding)	Eg Lottery funding via Sport England/TASS	Eg Funding via ASC	Eg Universities are self funding/commercial motives

	17. (Administration of centres)	UK Sport oversees UKSI	Australian Sports Commission (ASC) oversees the A I S	American Colleges are autonomous bodies
	18. (Provision/sports science)	All institutes provide top quality coaching, medical/sports science facilities		
	19. (Facilities)	Access to on site facilities/good facilities	AIS can be a resource only eg no on site sports facilities at VIS/VIS is a resource not a facility	Access to on site facilities/good facilities
	20. (Education)	U.K.S.I and Australia Institute of Sport provide education opportunities Eg A.C.E.		Scholarship provides opportunity for degree/combination of training and study
	Cultural factors			
	21. (Tradition)	Culture based on traditional values/values of Empire/association with amateur ideal Colonial legacy	Ambitious/young culture is developing international reputation based on sport/nation building/	Sport reflects USA society policy of isolation/national identity promoted by Sport/reflection of frontier spirit
		All countries address equality in Olympic representation		
	22. (Equality)	Eg Ethnic minorities In track & field/more opportunity for women.	Eg Commitment to multi-culturalism/ Aborigines now included in Olympic team	Eg A multi-cultural society/domination of African Americans in track and field events.
	23. (Ideology)	Traditional participation ethic/taking part counts/growth of elitism	National obsession with sport/winning is important/sense of fair play	Lombardian ethic prevails/win at all cost in all sports
	24. (Economy)	All countries are economically stable/wealthy/affluent and can afford to invest in sport		
	Geographical factors			
	25. (Climate)	Unpredictable/unfavourable climate eg Unsuitable for winter Olympic sports	Highly favourable for outdoor sports eg Highly favourable for summer Olympic sports	All climatic types/suitable for summer & winter Olympic sports.
	26. (Natural environment)	No natural provision for altitude training/no areas of natural wilderness/few large spaces	Diverse environment In which to produce excellence such as desert/genuine wilderness/many large spaces	High mountain/high terrain suitable for high altitude training/Areas of wilderness/many large spaces
	27. (Population)	Relatively large population base/62 million people	Small population base/19 million people	Large population base/280 million

TOTAL MARKS = 13

GIVE T1 – for extra relevant information about countries that do not hit knowledge marks (ie. France, AUS, US).

GIVE T2 – for relevant UK information in non-comparative (France) section.

- for contemporary issue points on comparative part which are relevant but not on the UK knowledge mark scheme.

T1 marks

USA	Professional Sport. Commercial emphasis on Big 4 professional sports.
USA	Professional Sport. USA has own sports/historical legacy of isolation.
USA	Professional Sport. Competition within the country eg baseball World Series.
USA	Sport & ethnicity. Some cultural prejudices/Centrality and Stacking is still a feature of the professional sports scene.
USA	Amateur Sport. No tradition of the amateur sports club.
USA	Olympic Games. The foremost/top Olympic nation.

T1 marks

France	Professional Sport. Tradition of professional sport in France.
France	Professional Sport. Government funding has capped professional salaries eg soccer.
France	Professional Sport. Tour de France has high status/first professional cycle race.
France	Professional Sport. Strong International tradition eg World Cup winners.
France	Sport & ethnicity. Assimilation of ethnic players across all nation sports.
France	Amateur Sport. Tradition of the amateur sports club. Historical links with Vichy government.
France	Olympic Games. Founder country of modern Olympics.

T1 marks

Australia	Professional Sport. Tradition of professional sport in Australia/National Obsession/tradition of gambling.
Australia	Professional Sport. Pathway to professional sport can be via club or Australian Institute of Sport.
Australia	Professional Sport. Adopted Colonial games/invented Australian Rules Football.
Australia	Professional Sport. Nation building through international sport/great rivalry with England/Motherland/Ashes mythology.
Australia	Sport & ethnicity. Now a multi-cultural society/history of cultural prejudice/soccer a game for ethnic Europeans/Australian Rules Football no cultural prejudices.
Australia	Amateur Sport. Tradition of the amateur sports club/follow English example.
Australia	Olympic Games. Represented at every Olympic Games/leading Olympic nation/medals in 15 different sports in 2004 Games.

T2 marks

UK	Professional Sport. Increasing commercial emphasis/only soccer can match commercial status of USA.
UK	Professional Sport. UK had strong amateur tradition/amateur tradition giving way to professionalism eg rugby union is now a full time professional sport at the top level.
UK	Professional Sport. Strong International tradition eg World Cup winners.
UK	Sport & ethnicity. Some cultural prejudices eg ethnic cultures not truly represented in all sports/some sports support multi-culturalism eg rugby league has always encouraged ethnic players.
UK	Amateur Sport. Strong tradition of the amateur sports club.
UK	Olympic Games. Represented at every Olympic Games/an aspiring Olympic nation.

Appendix:**Examples of possible links****AS to AS**

- sport as big business
- sport as a concept
- minority groups
- media coverage/documentaries of surviving ethnic sports and other aspects of sport and culture specification eg Samoan rugby/running in Kenya.
- sport and commercialism - the American Dream
- National governing Bodies and lack of professionalism
- lower parts of performance pyramid not covered
- heavily sponsored stars become role models

A2 to A2

- comparison with pre-industrial times
- public schools also had impact of development of sports
- lawn tennis important in terms of sport and gender

AS to A2 and A2 to AS

- top level tennis today heavily sponsored
- lawn tennis today still relatively elitist
- impact of media coverage both then and now
- sport and gender both then and now

Banded criteria for synoptic assessment

16 - 19	<p>A comprehensive response:</p> <ul style="list-style-type: none"> • Comprehensive knowledge has been consistently and clearly linked to practical performance. • Relevant links and connections between and within study areas have been made successfully. • Responses at the top of this level will demonstrate sound analytical and evaluative skills. • There is evidence of well-argued, independent opinion and judgements supported by sound examples. • Technical and specialist vocabulary is used accurately. • The Quality of Written Communication is generally fluent with few errors.
11 - 15	<p>A competent answer:</p> <ul style="list-style-type: none"> • Substantial knowledge has been linked to practical performance and the majority of examples will be well considered. • Relevant links between and within subject areas have been made with some success. • Evidence of sound analysis is apparent. • Independent opinions and judgements will be present but towards the bottom of this level, not always supported by sound examples. • Technical and specialist vocabulary is used with some accuracy. • The Quality of Written Communication is generally fluent with few errors.
6 - 10	<p>A straightforward answer:</p> <ul style="list-style-type: none"> • There will be evidence that some knowledge has been linked to practical performance. Connections are made between and within study areas but at the bottom of this level, links will be tenuous. • Analysis will be limited and restricted to the obvious. • Opinion and judgement will be unsupported. • Technical and specialist vocabulary is used with limited success. • The Quality of Written Communication lacks fluency and there will be errors.
0 - 5	<p>A limited answer:</p> <ul style="list-style-type: none"> • There will be limited knowledge with few links to practical performance. • Connections within and between study areas rarely made. • Opinion and judgement almost entirely absent. • Little or no attempt to use technical and specialist vocabulary at the bottom of this level. • Errors in Quality of Written Communication will be intrusive.

Grade Thresholds

Advanced GCE Physical Education 3875 7875
June 2009 Examination Series

Unit Threshold Marks

Unit		Maximum Mark	A	B	C	D	E	U
2562	Raw	60	36	32	28	24	21	0
	UMS	120	96	84	72	60	48	0
2563	Raw	45	31	28	25	23	21	0
	UMS	90	72	63	54	45	36	0
2564	Raw	90	70	63	56	49	42	0
	UMS	90	72	63	54	45	36	0
2565	Raw	45	30	27	24	21	18	0
	UMS	90	72	63	54	45	36	0
2566	Raw	60	45	41	37	33	29	0
	UMS	120	96	84	72	60	48	0
2567	Raw	90	71	64	58	52	46	0
	UMS	90	72	63	54	45	36	0

Specification Aggregation Results

Overall threshold marks in UMS (ie after conversion of raw marks to uniform marks)

	Maximum Mark	A	B	C	D	E	U
3875	300	240	210	180	150	120	0
7875	600	480	420	360	300	240	0

The cumulative percentage of candidates awarded each grade was as follows:

	A	B	C	D	E	U	Total Number of Candidates
3875	18.28	40.98	64.44	85.16	97.32	100	1824
7875	15.01	35.51	60.26	82.96	96.59	100	10376

12200 candidates aggregated this series

For a description of how UMS marks are calculated see:

http://www.ocr.org.uk/learners/ums_results.html

Statistics are correct at the time of publication.

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