

Physical Education

Advanced GCE

Unit **G453**: Principles and concepts across different areas of Physical Education

Mark Scheme for January 2012

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All examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the report on the examination.

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Annotations used in the detailed Mark Scheme (to include abbreviations and subject-specific conventions)

Annotation	Meaning
✓	= Correct response
NAQ	= Not answering the question
BOD	= Benefit of the doubt
R	= Repeat
Vg	= Too Vague
DEV	= Development (levels scheme)
IRRL	= Significant amount of material which does not answer the question
SEEN	= Noted but no credit given
L1	= Level 1 (levels of response scheme)
L2	= Level 2 (levels of response scheme)
L3	= Level 3 (levels of response scheme)
L4	= Level 4 (levels of response scheme)
P	= Practical example (levels of response scheme)
E	= Evaluative point (levels of response scheme)
i	= Independent opinion (levels of response scheme)

Section A Historical Studies (Option A1)

Question		Answer	Marks	Guidance																						
1	(a)	<p>5 marks for 5 of: Description of stage one (sub max 4)</p> <table><tr><td>1. (pop rec/ uncivilised)</td><td>Like (institutionalised) popular recreation/activities cruel or violent/ranged from simple to barbaric/games of force rather than skill/Barbarian or uncivilised games or behaviour</td></tr><tr><td>2. (reflection)</td><td>schools reflected society (which was 'uncivilised')</td></tr><tr><td>3. (bullying)</td><td>Bullying/brutality/ fagging / severe punishments/poor relationships/hooligan behaviour/rebellion</td></tr><tr><td>4. (boy culture)</td><td>'Boy culture'/activities organised by boys themselves/games ignored by teachers</td></tr><tr><td>5. (facilities)</td><td>facilities simple or natural</td></tr><tr><td>6. (rules)</td><td>limited or simple rules to games</td></tr><tr><td>7. (Melting Pot)</td><td>Melting pot / each school developed its own sporting culture/schools' sporting culture dependent on natural facilities</td></tr><tr><td>8. (adopt/adapt)</td><td>Activities adopted or adapted (from home)</td></tr><tr><td>9. (Spartan)</td><td>Spartan or severe living conditions</td></tr></table> <p>Reasons for transition to stage two (sub max 1)</p> <table><tr><td>10.(civilising process)</td><td>Civilising process/Britain becoming more civilised or ordered/increased law and order/need for social control/social development linked to increased responsibility given to boys/police force established so behaviour more civilised/RSPCA established so cruelty against animals reduced</td></tr><tr><td>11. (Arnold)</td><td>Impact or arrival of Dr Arnold/ Arnold a clergyman keen to instil Christian values/Arnold keen to reform/ moral development/increased health awareness/intellectual development linked to educational change</td></tr></table>	1. (pop rec/ uncivilised)	Like (institutionalised) popular recreation/activities cruel or violent/ranged from simple to barbaric/games of force rather than skill/Barbarian or uncivilised games or behaviour	2. (reflection)	schools reflected society (which was 'uncivilised')	3. (bullying)	Bullying/brutality/ fagging / severe punishments/poor relationships/hooligan behaviour/rebellion	4. (boy culture)	'Boy culture'/activities organised by boys themselves/games ignored by teachers	5. (facilities)	facilities simple or natural	6. (rules)	limited or simple rules to games	7. (Melting Pot)	Melting pot / each school developed its own sporting culture/schools' sporting culture dependent on natural facilities	8. (adopt/adapt)	Activities adopted or adapted (from home)	9. (Spartan)	Spartan or severe living conditions	10.(civilising process)	Civilising process/Britain becoming more civilised or ordered/increased law and order/need for social control/social development linked to increased responsibility given to boys/police force established so behaviour more civilised/RSPCA established so cruelty against animals reduced	11. (Arnold)	Impact or arrival of Dr Arnold/ Arnold a clergyman keen to instil Christian values/Arnold keen to reform/ moral development/increased health awareness/intellectual development linked to educational change	5	<p>Sub max 4 for description</p> <p>Sub max 1 for reasons for transition</p> <p>Do not accept for Pt 6 No rules</p>
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	(b)	<p>5 marks for 5 of: Influence of university ‘melting pot’ (sub max 4)</p> <table><tr><td>1. (rules)</td><td>Common set of rules / codification established/NGB’s</td></tr><tr><td>2. (fixtures)</td><td>Teams could play each other/more or regular fixtures</td></tr><tr><td>3. (compromise)</td><td>Ex public school boys had to compromise or sacrifice their school rules</td></tr><tr><td>4. (retention)</td><td>Some schools’ rules retained as internal or festival games (still played today)</td></tr></table> <p>Influence of Oxbridge graduates (sub max 4)</p> <table><tr><td>5. (NGBs)</td><td>They established (many) NGBs / admin skills</td></tr><tr><td>6. (assistant masters)</td><td>They returned to (to their own) schools as (assistant) masters to help with games</td></tr><tr><td>7. (other schools)</td><td>They went on to teach at preparatory or middle class or other schools and spread passion for team games or the cult of athleticism</td></tr><tr><td>8. (role models)</td><td>They were role models/boys looked up to them/‘blues’ highly admired</td></tr><tr><td>9. (spread abroad)</td><td>They took games abroad as army officers or missionaries or as part of colonial service</td></tr><tr><td>10. (old boys clubs)</td><td>They established old boys’ clubs</td></tr><tr><td>11. (priests)</td><td>They spread games at home as: Priests or vicars through parish teams/ community members who set up clubs</td></tr><tr><td>12. (industrialists)</td><td>As industrialists providing for factory teams</td></tr><tr><td>13. community/ politics)</td><td>As politicians or community leaders who provided funding or facilities or support</td></tr></table>	1. (rules)	Common set of rules / codification established/NGB’s	2. (fixtures)	Teams could play each other/more or regular fixtures	3. (compromise)	Ex public school boys had to compromise or sacrifice their school rules	4. (retention)	Some schools’ rules retained as internal or festival games (still played today)	5. (NGBs)	They established (many) NGBs / admin skills	6. (assistant masters)	They returned to (to their own) schools as (assistant) masters to help with games	7. (other schools)	They went on to teach at preparatory or middle class or other schools and spread passion for team games or the cult of athleticism	8. (role models)	They were role models/boys looked up to them/‘blues’ highly admired	9. (spread abroad)	They took games abroad as army officers or missionaries or as part of colonial service	10. (old boys clubs)	They established old boys’ clubs	11. (priests)	They spread games at home as: Priests or vicars through parish teams/ community members who set up clubs	12. (industrialists)	As industrialists providing for factory teams	13. community/ politics)	As politicians or community leaders who provided funding or facilities or support	5	<p>Sub max 4 for influence of university ‘melting pot’</p> <p>Sub max 4 for influence of Oxbridge graduates</p>
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Question	Answer	Marks	Guidance
(c)	5 marks for 5 of: Yes – lawn tennis was a successful vehicle for the emancipation of women because (sub max 4):		5 Sub max 4 for ‘yes’ - lawn tennis was a successful vehicle for emancipation ... Sub max 4 for ‘but’ ... Sub max 1 for contemporary tennis as inclusive game Note Accept under pt1 being able to be involved/active etc. Do not accept - if candidate gives pts 8 – 11 as positive aspects of emancipation but look for pt 1 for involvement.
	1. (athleticism)	women able to be athletic/energetic/get involved in a suitable/un-violent game	
	2. (freedom)	women free from constraints of Victorianism	
	3. (MC)	It was acceptable to middle class	
	4. (stereotypes weakened)	It helped to remove some of the stereotypes (of earlier Victorian times)	
	5. (clubs)	Clubs formed which women (eventually) joined	
	6. (schools)	It was adopted by (exclusive girls) schools	
	7. (participation)	Whole families could play together/girls able to join in / men and women being able to play together	
	But – (sub max 4):		
	8. (restrained)	Women weren’t expected to be vigorous/too athletic	
	9. (doubles)	Women (usually) only played doubles	
	10. (covered)	Women had to stay well covered/clothed	
	11. (privacy)	Women played in private/privacy of walled or hedged gardens	
	12. (social)	Tennis was predominantly a social rather than sporting occasion	
	13. (clubs exclusive)	Clubs were exclusive/middle class did not ‘mix’ below themselves (so not in fact emancipated)	
	Contemporary tennis as inclusive game (sub max 1):		
	14. (age)	Court surfaces/Astroturf courts/indoor courts / racket technology allow play into older middle and older age	
	15. (schemes)	Schemes/campaigns to increase participation in inner cities	
16. (free)	Free or subsidised provision and so easier for those on low income or unemployed to play/’tennis for free’ campaign which makes it easier to those on low income or unemployed to play		
17. (wheelchair)	Increased coverage of or participation in wheelchair tennis		
18. (other)	Accept other relevant example of inclusion		

(d)*	
Levels Descriptors	Levels Discriminators
Level 4 (18 – 20 marks) A comprehensive answer: <ul style="list-style-type: none"> • detailed knowledge & excellent understanding • detailed analysis and excellent critical evaluation • well-argued, independent opinion and judgements which are well supported by relevant practical examples • very accurate use of technical and specialist vocabulary • high standard of written communication throughout. 	Discriminators at Level 4 <u>are likely</u> to include: <ul style="list-style-type: none"> • detailed knowledge and excellent understanding of reasons for replacement (rather than just points of knowledge about each approach); consistently and accurately applied • excellent evaluation to include both positive and negative aspects of both the national curriculum and the 1950s approach together with a conclusion. • all aspects of question addressed with balance (why 1933 was replaced/evaluation of NC v 1950s)
Level 3 (13 - 17 marks) A competent answer: <ul style="list-style-type: none"> • good knowledge and clear understanding • good analysis and critical evaluation • independent opinions and judgements will be present but may not always be supported by relevant practical examples • generally accurate use of technical and specialist vocabulary • written communication is generally fluent with few errors. 	Discriminators at Level 3 <u>are likely</u> to include: <ul style="list-style-type: none"> • good knowledge and clear understanding of reasons for replacement (rather than just points of knowledge about each approach) • good evaluation of both the national curriculum and the 1950s approach together with a conclusion. • all aspects of question addressed but not necessarily with balance (why 1933 was replaced/evaluation of NC v 1950s)
Level 2 (8 - 12 marks) A limited answer: <ul style="list-style-type: none"> • limited knowledge and understanding • some evidence of analysis and critical evaluation • opinion and judgement given but often unsupported by relevant practical examples • technical and specialist vocabulary used with limited success • written communication lacks fluency and contains errors. 	Discriminators at Level 2 <u>are likely</u> to include: <ul style="list-style-type: none"> • limited knowledge and understanding of reasons for replacement ie some attempt at explaining reasons for replacement rather than just points of knowledge about each approach • some evidence of evaluation although likely to be more descriptive than evaluative • an unbalanced approach but at the top end of this level all parts of the question are likely to be addressed
Level 1 (0 - 7 marks) A basic answer: <ul style="list-style-type: none"> • basic knowledge and little understanding • little relevant analysis or critical evaluation • little or no attempt to give opinion or judgement • little or no attempt to use technical and specialist vocabulary • errors in written communication will be intrusive. 	At Level 1 candidates <u>are likely</u> to: <ul style="list-style-type: none"> • show basic knowledge and understanding of the reasons for replacement • be descriptive rather than explanatory or evaluative • be unbalanced and not address all aspects
[0 marks] No response or no response worthy of credit.	

Question		Answer	Marks	Guidance
(d)*	Indicative Content: 1933 course replaced by 1950s approach because:		20	
	1. (idealism)	Post war ideals / renewal <ul style="list-style-type: none">• 1950s more idealistic times		
	2. (philosophy)	Changes in educational philosophy <ul style="list-style-type: none">• More holistic or child centred approach thought necessary• Eg children to develop - cognitive/social skills/problem solving/thinking/creativity/discovery / enjoyment aspect		
	3. (variety)	More variety needed <ul style="list-style-type: none">• Eg Movement to music/swimming/educational Gymnastics		
	4. (war)	Blitz or war time bombings created need for re-building programme <ul style="list-style-type: none">• New schools built (with new gymnasia)		
	5. (creativity - teaching)	A more creative approach needed <ul style="list-style-type: none">• a desire for fewer prescriptive 'tables'• more autonomy for teachers wanted		
	6. (women)	By 1950 women PE teachers demanded a different approach <ul style="list-style-type: none">• More child centred approach• Eg 'graduates' of Dartford college or other example		
	7. (equipment)	Better provision <ul style="list-style-type: none">• Additions to playgrounds available/full apparatus• Eg purpose build gymnasia/apparatus like army assault courses		
	8. (welfare state)	1950s welfare state system/improved standard of living/ <ul style="list-style-type: none">• government keen to provide for/encourage health		
	9. (social change)	Social change <ul style="list-style-type: none">• from strict class system to (alleged) equality of opportunity for all		
	10. (training)	By 1950s better teaching <ul style="list-style-type: none">• PE a profession• PE colleges training specialist teachers• EG Chester College or other		

Question	Answer	Marks	Guidance																												
	<p>Yes – today’s NC being better than 1950s approach because:</p> <table><tr><td>11.(time)</td><td>Specific amount of time available<ul style="list-style-type: none">protected timeeg government targets/5 hour offer</td></tr><tr><td>12.(teachers)</td><td>More specialist PE teachers</td></tr><tr><td>13.(balance/variety)</td><td>A balanced PE experience/wider variety or broader range of skills developed<ul style="list-style-type: none">thinking or analytical or social skills or creativity developedeg fair play/integrity/independence/problem solvingVariety leads to great likelihood of lifelong participation / healthy lifestyles</td></tr><tr><td>14.(consistency)</td><td>Consistent experience wherever child goes to school/same in all schools<ul style="list-style-type: none">easy transfer between schools</td></tr><tr><td>15.(support)</td><td>Support provided<ul style="list-style-type: none">especially to non-specialist teacherseg by partnerships/by SSCOs</td></tr><tr><td>16.(adapt)</td><td>Schools can adapt it<ul style="list-style-type: none">to suit themselves or their strengths or the strengths of teachers</td></tr><tr><td>17.(standards)</td><td>(Arguably) higher standards/clear national standards</td></tr><tr><td>18.(rights)</td><td>Learners gain the right to learn certain content<ul style="list-style-type: none">Eg dance</td></tr></table> <p>But – today’s NC perhaps not better than 1950s approach because:</p> <table><tr><td>19.(admin)</td><td>Burden of admin/record keeping<ul style="list-style-type: none">Restricts time for creative planning</td></tr><tr><td>20.(inadequate support)</td><td>Inadequate support<ul style="list-style-type: none">Especially for non-specialist teachersEg in primary schools</td></tr><tr><td>21.(lack of experience)</td><td>Lack of experience of assessment<ul style="list-style-type: none">Can lead to confusion or skewed results</td></tr><tr><td>22.(unbalanced)</td><td>Schools still able to offer unbalanced programme<ul style="list-style-type: none">Eg no dance if teachers not keen</td></tr><tr><td>23.(constraints)</td><td>It can constrain or reduce creativity of teachers</td></tr><tr><td>24.(pressure)</td><td>It can put pressure on schools<ul style="list-style-type: none">Eg to provide certain activities or facilities</td></tr></table>	11.(time)	Specific amount of time available <ul style="list-style-type: none">protected timeeg government targets/5 hour offer	12.(teachers)	More specialist PE teachers	13.(balance/variety)	A balanced PE experience/wider variety or broader range of skills developed <ul style="list-style-type: none">thinking or analytical or social skills or creativity developedeg fair play/integrity/independence/problem solvingVariety leads to great likelihood of lifelong participation / healthy lifestyles	14.(consistency)	Consistent experience wherever child goes to school/same in all schools <ul style="list-style-type: none">easy transfer between schools	15.(support)	Support provided <ul style="list-style-type: none">especially to non-specialist teacherseg by partnerships/by SSCOs	16.(adapt)	Schools can adapt it <ul style="list-style-type: none">to suit themselves or their strengths or the strengths of teachers	17.(standards)	(Arguably) higher standards/clear national standards	18.(rights)	Learners gain the right to learn certain content <ul style="list-style-type: none">Eg dance	19.(admin)	Burden of admin/record keeping <ul style="list-style-type: none">Restricts time for creative planning	20.(inadequate support)	Inadequate support <ul style="list-style-type: none">Especially for non-specialist teachersEg in primary schools	21.(lack of experience)	Lack of experience of assessment <ul style="list-style-type: none">Can lead to confusion or skewed results	22.(unbalanced)	Schools still able to offer unbalanced programme <ul style="list-style-type: none">Eg no dance if teachers not keen	23.(constraints)	It can constrain or reduce creativity of teachers	24.(pressure)	It can put pressure on schools <ul style="list-style-type: none">Eg to provide certain activities or facilities		
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Section A Comparative Studies (Option A2)

Question		Answer	Marks	Guidance
2	(a)	5 marks for 5 of: Australia (sub max 4):	5	Sub max 4 for Australia Sub max 1 for UK
		1. (Australian)		
		2. (cricket)		
		3. (People's game/egalitarian)		
		4. (frontierism)		
		5. (space)		
		6. (National)		
		7. (media/commercial)		
		8. (Draft)		
		9. (fame/fortune)		
		10. (women)		
		11.(schools)		
		12.(pathway to top)		
		13. (season)		

Question			Answer	Marks	Guidance		
			UK (sub max 1): <table><tr><td>14. (lack of....)</td><td>Other sports dominant/no space for another major game/other sports dominate school curricula/tradition of other sports/lack of knowledge of it/ lack of media coverage / lack of teaching or coaching expertise/lack of role models</td></tr></table>	14. (lack of....)	Other sports dominant/no space for another major game/other sports dominate school curricula/tradition of other sports/lack of knowledge of it/ lack of media coverage / lack of teaching or coaching expertise/lack of role models		
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	(b)	5 marks for 5 of:	5																																			
					<table><tr><th></th><th>Provision for elite sport in Australia</th><th>Comparison with UK</th></tr><tr><td>1. (decentralised)</td><td colspan="2">Both decentralised systems</td></tr><tr><td>2. (institutes)</td><td colspan="2">Both have institutes/UK copied Australia/UK has UK Sport or home country institutes</td></tr><tr><td>3. (examples)</td><td>Eg Australian Institute of Sport / Victorian Institute of Sport (VIS)/Melbourne/SASI/NSWIS/NTIS</td><td>Eg English Institute of Sport (EIS) at Bisham or Sheffield/SINI/SIS/WIS</td></tr><tr><td>4. (state v country)</td><td>Each state has at least one institute/all institutes of equal status</td><td>Each home country has its own institute/all institutes of equal status</td></tr><tr><td>5. (Govt)</td><td>Government (ASC) directly involved in sporting decisions</td><td>Government not (directly) involved with sporting policy</td></tr><tr><td>6. (funding)</td><td>Funded by government & business/private enterprise</td><td>Funded by National Lottery & business sponsorship</td></tr><tr><td>7. (facilities)</td><td colspan="2">Institutes in both countries have world class / excellent / top facilities/equipment/technology</td></tr><tr><td>8. (support)</td><td colspan="2">Institutes in both countries provide an environment that maximises potential/supports high performance sport/institutes in both countries provide world class support eg coaching/medical/scientific</td></tr><tr><td>9. (financial help)</td><td colspan="2">Institutes in both countries provide financial aid/sponsorship to performers</td></tr><tr><td>10. (ACE)</td><td colspan="2">Institutes in both countries provide educational and/or vocational opportunities eg ACE eg advice about media and finance</td></tr></table>		Provision for elite sport in Australia	Comparison with UK	1. (decentralised)	Both decentralised systems		2. (institutes)	Both have institutes/UK copied Australia/UK has UK Sport or home country institutes		3. (examples)	Eg Australian Institute of Sport / Victorian Institute of Sport (VIS)/Melbourne/SASI/NSWIS/NTIS	Eg English Institute of Sport (EIS) at Bisham or Sheffield/SINI/SIS/WIS	4. (state v country)	Each state has at least one institute/all institutes of equal status	Each home country has its own institute/all institutes of equal status	5. (Govt)	Government (ASC) directly involved in sporting decisions	Government not (directly) involved with sporting policy	6. (funding)	Funded by government & business/private enterprise	Funded by National Lottery & business sponsorship	7. (facilities)	Institutes in both countries have world class / excellent / top facilities/equipment/technology		8. (support)	Institutes in both countries provide an environment that maximises potential/supports high performance sport/institutes in both countries provide world class support eg coaching/medical/scientific		9. (financial help)	Institutes in both countries provide financial aid/sponsorship to performers		10. (ACE)	Institutes in both countries provide educational and/or vocational opportunities eg ACE eg advice about media and finance	
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10. (ACE)	Institutes in both countries provide educational and/or vocational opportunities eg ACE eg advice about media and finance																																					

Question		Answer	Marks	Guidance		
	(c)	5 marks for 5 of:	5			
					PE in USA	Comparison with UK
		1. (focus on...)			direct skill learning/fitness/training	...participation/skill learning/holistic development/educational emphasis / BAHL
		2. (content)			credit accurate response on content	credit accurate response on content
		3. (assessment)			(focus on) testing or measurement	(less formal) teacher assessment
		4. (exams)			Limited/none at school level	Widespread examinations in PE
		5. (prof dev...)			...provided by superintendent or state	...provided via public or private routes
		6. (good practice)			Blue Ribband Schools/Beacon Schools	Specialist sports colleges/Beacon Schools/independent school that focus on sport
		7. (admin)			Decentralised admin	Decentralised admin/becoming more centralised
		8. (funding)			State funded	State funded/schools need or seek additional funding
		9. (control)			Controlled by school board	Schools (increasingly) autonomous/government determines curriculum
		10. (inspection)			Inspected by superintendent (of school board)	Inspection by Ofsted
		11. (NC)			No National curriculum/optional	National curriculum/ PE secure as subject/compulsory to 16 yrs
12. (status)	PE lower status thought less valuable than in UK	PE higher status				

(d)*	
Levels Descriptors	Levels Discriminators
Level 4 (18 – 20 marks) A comprehensive answer: <ul style="list-style-type: none"> • detailed knowledge & excellent understanding • detailed analysis and excellent critical evaluation • well-argued, independent opinion and judgements which are well supported by relevant practical examples • very accurate use of technical and specialist vocabulary • high standard of written communication throughout. 	Discriminators at Level 4 <u>are likely</u> to include: <ul style="list-style-type: none"> • detailed knowledge and excellent understanding of cultural factors that influence sporting excellence in the UK and the USA • direct comparisons of cultural factors throughout • high quality independent opinion/judgement re the similarities and differences • a well-structured, balanced answer
Level 3 (13 - 17 marks) A competent answer: <ul style="list-style-type: none"> • good knowledge and clear understanding • good analysis and critical evaluation • independent opinions and judgements will be present but may not always be supported by relevant practical examples • generally accurate use of technical and specialist vocabulary • written communication is generally fluent with few errors. 	Discriminators at Level 3 <u>are likely</u> to include: <ul style="list-style-type: none"> • good knowledge and clear understanding of cultural factors that influence sporting excellence in the UK and the USA • some direct comparisons which show good knowledge of the cultural factors that influence sporting excellence. • high quality independent opinion/judgement re the similarities and differences • a competently structured, balanced answer
Level 2 (8 - 12 marks) A limited answer: <ul style="list-style-type: none"> • limited knowledge and understanding • some evidence of analysis and critical evaluation • opinion and judgement given but often unsupported by relevant practical examples • technical and specialist vocabulary used with limited success • written communication lacks fluency and contains errors. 	Discriminators at Level 2 <u>are likely</u> to include: <ul style="list-style-type: none"> • limited knowledge and understanding of cultural factors that influence sporting excellence in the UK and the USA • some attempt at a comparison of the cultural factors • a description of cultural factors rather than a focus on their influence
Level 1 (0 - 7 marks) A basic answer: <ul style="list-style-type: none"> • basic knowledge and little understanding • little relevant analysis or critical evaluation • little or no attempt to give opinion or judgement • little or no attempt to use technical and specialist vocabulary • errors in written communication will be intrusive. 	At Level 1 candidates <u>are likely</u> to: <ul style="list-style-type: none"> • show basic knowledge of the factors • make little or no attempt to compare • describe factors rather than focus on their influence on sporting excellence
[0 marks] No response or no response worthy of credit.	

Question		Answer	Marks	Guidance
	(d)*	Indicative Content: SIM = similarities between two systems DIFF = Differences between two systems	20	

Question			Answer	Marks	Guidance
			Political:		
			6. (Policy/pathway) Clear structure of governing body control helps <ul style="list-style-type: none"> • university pathway helps 		
			7. (system) Decentralised system		
			8. (funding) Limited direct government funding of high level sport <ul style="list-style-type: none"> • Private funding 		
			9. (economy) Capitalism drives sport <ul style="list-style-type: none"> • capitalism driven by competition which is mirrored in sport 		
			10. (golden triangle) USA drove link between sport and commercialism		
			11. (fame/fortune) Fame or fortune for more/in all professional sports/in many university sports Eg basketball	DIFF/BUT: improving organisation and administration of high performance sport <ul style="list-style-type: none"> • Academies 	
			7. (system) Decentralised system	SIM/BUT: decentralised system <ul style="list-style-type: none"> • several autonomous bodies Eg Youth Sport Trust 	
			8. (funding) Limited direct government funding of high level sport <ul style="list-style-type: none"> • Private funding 	SIM: + national lottery <ul style="list-style-type: none"> • some government, lottery and private funding 	
			9. (economy) Capitalism drives sport <ul style="list-style-type: none"> • capitalism driven by competition which is mirrored in sport 	DIFF: mixed economy <ul style="list-style-type: none"> • not exclusively driven by competition 	
			10. (golden triangle) USA drove link between sport and commercialism	TRAD DIFF – BUT: Increased commercialisation of sport <ul style="list-style-type: none"> • sport linked with multi-national companies • impact of 'golden triangle' • UK followed American lead 	
			11. (fame/fortune) Fame or fortune for more/in all professional sports/in many university sports Eg basketball	SIM/BUT: Fame or fortune for few/opportunities not widespread <ul style="list-style-type: none"> • Mainly for men Eg Association Football 	

Question			Answer	Marks	Guidance
			Social:		
			12. (discrimination) Discrimination <ul style="list-style-type: none"> • impact on opportunity, provision, esteem • impact on minority group participation and performance • WASP dominance • stacking/centrality 		
			13. (opportunity) BUT: Land of opportunity/land of the free <ul style="list-style-type: none"> • theoretical opportunities for all/claim of cultural pluralism/ Eg Williams/Jordan 		
			14. (tradition) DIFF: Lack of tradition of mass participation		
			15. (incentive) American Dream <ul style="list-style-type: none"> • rags to riches possible 		
			Values:		
			16. (Lombardian v counter culture) Lombardian or win ethic <ul style="list-style-type: none"> • Vince Lombardi as 1960s football coach Eg any of Big Four sports Limited outlet for culture counter culture or radical ethic activities 	DIFF: tradition of taking part rather than winning <ul style="list-style-type: none"> • winning important but ruthless pursuit has traditionally not been considered to be sporting • Sportsmanship or fair play 	

Question			Answer	Marks	Guidance
			<ul style="list-style-type: none"> Counter culture – taking part more important than winning Eg lifetime sports/keeping fit/backpacking/outdoor recreation Radical – equal importance of taking part and winning Eg amateur sport – golf/running Zero-sum mentality – no draws 		
		17. (elitism)	Elitist system/elitism dominant		DIFF: Elitism not a traditional value/ reluctant to adopt elitist policy
		18. (young people)	Sport for young people driven mainly by Lombardianism		DIFF/BUT: Sport for young people driven by participation as well as performance

Section B Sports Psychology (Option B1)

Question			Answer	Marks	Guidance
3	(a)		2 marks for characteristic of extrovert and neurotic 2 marks for practical examples of Type A and Type B	4	2 marks for characteristic of extrovert and neurotic 2 marks for practical examples of Type A and Type B
			1. (extroversion) Outgoing/affiliates to other people/likes to be with others/sociable (Do not accept confident on its own unless 'confident in the presence of others')		
			2. (neurotic) Unstable/unpredictable/(tends towards) mood swings/(highly) emotional/tendency to worry/exhibit anxiety		
			3. (Type A) Practical example showing high personal stress levels/anxious/high arousal/apprehensive/intolerant/impatient/works fast / ambitious / aggressive / highly competitive Eg Football player being very anxious and wound-up about playing		
			4. (Type B) Practical example showing low personal stress/low arousal/cool under pressure/confident/tolerant/relaxed / passive / less competitive (than Type A). Eg Athlete being very confident or calm when preparing for a race		

Question		Answer	Marks	Guidance	
	(b)	Description of styles (sub max 4):		6	Sub max 4 for descriptions of styles Sub max 2 for practical examples of Broad and Internal If combined then look for equivalent to points 5 and 6
		1. (Broad)	Focus or concentrate on a lot of information or peripheral stimuli/placements or positions of other players or performers		
		2. (Narrow)	Focus or concentrate on very few stimuli/concentrate on small amount of information		
		3. (External)	Focus or concentrate on outside/environmental factors		
		4. (Internal)	Focus or concentrate on themselves/affective responses/emotions/own thoughts/strategies or tactics		
		Practical examples of Broad and Internal (sub max 2):			
		5. (Broad Eg)	Eg football player looks up for pass to a number of possible teammates but still has ball under control eg tactics for a free kick		
6. (Internal Eg)	Eg a tennis player realises that she does not feel confident when attempting a serve with slice. Eg planning the tactics for the free kick				

Question		Answer	Marks	Guidance	
	(c)	5 marks for 5 from:		5	
		1. (Acceptance/belonging)	To be accepted/behaviour can follow that of others to seek acceptance or a sense of belonging to a group (which can lead to positive or negative lifestyle behaviours) or you make more friends giving a sense of belonging or well-being		
		2. (Norms/pressure/conformity)	Influence of group norms/pressure from others in the group or pressure to conform to follow a certain lifestyle or way of behaving (positive or negative)		
		3. (values)	The values of the group may be adopted which may lead to positive or negative lifestyle behaviour		
		4. (positive/negative – motivation)	Can motivate/encourage you to follow an active and healthy lifestyle or not to follow an active and healthy lifestyle		
		5. (confidence)	Confidence can be increased with the presence of others in the group or it may be decreased (leading to social loafing)		
		6. (social loafing)	Individuals may not make as much effort as others in the group/have lower motivation.		
		7. (aggression/assertion)	Assertion may increase when in a group/aggression		
		8. (deindividuation – loss of being an individual)	Deindividuation/loss of sense of being an individual/lose sense of identity can occur when in a group which can lead to dysfunctional/anti-social/unhealthy behaviour		
		9. (able to identify with others)	Increased sense of group identity can lead to positive or negative lifestyle behaviour		
		10. (prejudice)	Being part of a group can make you more prejudiced against other individuals/groups / the In-group Out-group effect		
		11. (leaders)	Leaders in the group can influence behaviour (positive or negative effects) / become a leader / role model yourself to influence a healthy lifestyle		
		12. (creativity)	Creativity can increase because of dynamic features of being in a group or creativity can be diminished because of the influences to conform		

(d)*	
Levels Descriptors	Levels Discriminators
Level 4 (18 – 20 marks) A comprehensive answer: <ul style="list-style-type: none"> • detailed knowledge & excellent understanding • detailed analysis and excellent critical evaluation • well-argued, independent opinion and judgements which are well supported by relevant practical examples • very accurate use of technical and specialist vocabulary • high standard of written communication throughout. 	Discriminators at Level 4 <u>are likely</u> to include: <ul style="list-style-type: none"> • detailed knowledge and excellent understanding of all three theories of leadership • detailed analysis and excellent critical evaluation of all three leadership theories • both positive and negative aspects of theories are explored well • detailed knowledge of both leadership styles (described in detail) effectively applied to lifestyle behaviour • a well structured, balanced answer.
Level 3 (13 - 17 marks) A competent answer: <ul style="list-style-type: none"> • good knowledge and clear understanding • good analysis and critical evaluation • independent opinions and judgements will be present but may not always be supported by relevant practical examples • generally accurate use of technical and specialist vocabulary • written communication is generally fluent with few errors. 	Discriminators at Level 3 <u>are likely</u> to include: <ul style="list-style-type: none"> • good knowledge and clear understanding of the three theories of leadership • all three leadership theories analysed with a good attempt at critical evaluation for at least one theory • both positive and negative aspects of theories explored for at least one theory • good knowledge of both leadership styles (clearly described) with a good attempt at addressing how they affect lifestyle behaviour • all aspects of the question attempted competently • a competently structured, balanced answer
Level 2 (8 - 12 marks) A limited answer: <ul style="list-style-type: none"> • limited knowledge and understanding • some evidence of analysis and critical evaluation • opinion and judgement given but often unsupported by relevant practical examples • technical and specialist vocabulary used with limited success • written communication lacks fluency and contains errors. 	Discriminators at Level 2 <u>are likely</u> to include: <ul style="list-style-type: none"> • at least two theories explained with evidence of at least one being critically evaluated perhaps with limited success • at least one style described with limited reference to how it might affect lifestyle behaviour or at the bottom of this level with some reference to sport alone
Level 1 (0 - 7 marks) A basic answer: <ul style="list-style-type: none"> • basic knowledge and little understanding • little relevant analysis or critical evaluation • little or no attempt to give opinion or judgement • little or no attempt to use technical and specialist vocabulary • errors in written communication will be intrusive. 	At Level 1 candidates <u>are likely</u> to: <ul style="list-style-type: none"> • show basic knowledge and understanding of theories of leadership • describe leadership theories rather than critically evaluate • leadership styles described but with little reference to how they might affect lifestyle behaviour
[0 marks] No response or no response worthy of credit.	

Question		Answer	Marks	Guidance	
	(d)*	Indicative Content:		20	
		1. Traits of leadership	Innate/genetically determined. <ul style="list-style-type: none">Great man theory/males more predetermined towards leadership(Male dominance disputed because females make just as good leaders or there are examples of female leaders)		
		2. Traits of leadership	Stable/enduring characteristics <ul style="list-style-type: none">Unchanging in all/many situationsLeaders will not lose their influence over time		
		3. Traits of leadership	Traits are behaviours that are pre-determined <ul style="list-style-type: none">rather than learned Examples of traits eg confidence/assertion/interpersonal skills		
		4. Traits of leadership	Leadership influence may be affected positively or negatively by your innate personality characteristics <ul style="list-style-type: none">Examples eg extroversion may help with leadership or (trait) confidence		
		5. Traits of leadership (negative view)	This is an unsuccessful theory because leaders do not show leadership traits at all times. <ul style="list-style-type: none">Many leaders do not show leadership characteristics unless a situation demands it / does not take into account the environmentMany leaders do not show leadership characteristics unless others are present to be copied or influences are presentFemales just as able to become leaders		
		6. Social learning	(Bandura) - We observe and copy behaviour. <ul style="list-style-type: none">Reinforcement of leader behaviour a key feature		
		7. Social learning	Learn leadership through copying significant others/role models <ul style="list-style-type: none">In sport this may be the copying the most successful/high profile leadersPractical examples eg a captain of a football team may copy the leadership style of the coach because he looks up to him.		

Question			Answer	Marks	Guidance
			<p>8. Social learning (negative view)</p> <p>Not a successful theory because different people exposed to the same role models do not all display leadership characteristics</p> <ul style="list-style-type: none"> • Importance of situational/environmental factors makes this theory invalid / it ignores inherited traits • Practical examples eg the aggression of a well-respected captain may not be copied by all the players in the team. 		
			<p>9. Interactionist</p> <p>Interaction of traits with the environment or traits can be triggered by environmental factors</p> <ul style="list-style-type: none"> • Practical example of the environment triggering certain leadership behaviour traits (eg danger might illicit autocratic style) 		
			<p>10. Interactionist</p> <p>In sport you may show leadership traits because the situation demands that you are</p> <ul style="list-style-type: none"> • Examples eg in a rugby match you show leadership because the aim is to win • Leadership performance may be affected positively or negatively depending how the performer perceives the requirements of the situation 		
			<p>11. Interactionist (Negative view)</p> <p>Does not take into account those that are predictable / consistent in their behaviours or those who are natural (born) leaders in every situation.</p> <ul style="list-style-type: none"> • Eg a school pupil is the Head Boy and captain of the school rugby team and leads an exercise class 		

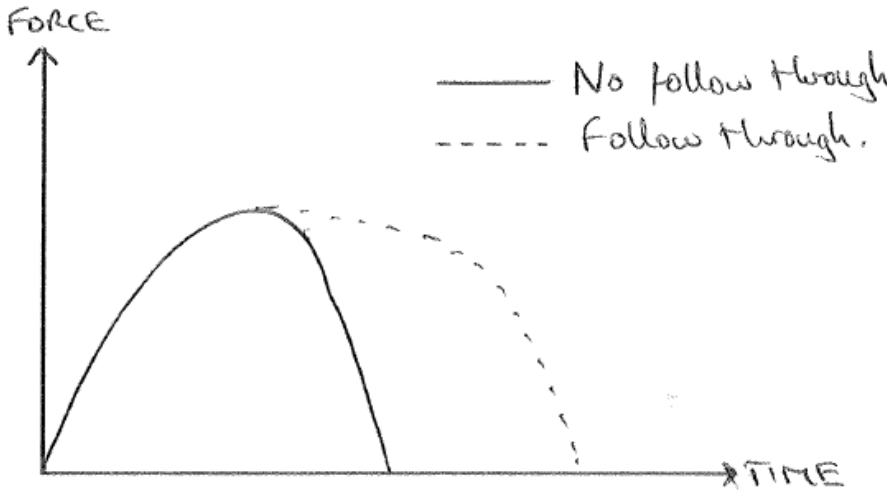
Question			Answer	Marks	Guidance
			Description of autocratic:		
			12. (Autocratic)		
			Autocratic is task oriented		
			<ul style="list-style-type: none"> • gets job done or the task is the most important • good when there is little time/time is short • practical example 		
			13. (Autocratic)		
			Can be authoritarian or disciplinarian		
			<ul style="list-style-type: none"> • not bothered about personal consequences or personal relationships / not sharing decisions. • practical example 		
			Autocratic affects lifestyle behaviour:		
			14. (Autocratic – affect lifestyle)		
			Will have a strong message to influence (positively or negatively)		
			<ul style="list-style-type: none"> • seems confident • leadership decisions must be right because of conviction/tone 		
			15. (Autocratic – affect lifestyle)		
			May be intimidated into following leader		
			<ul style="list-style-type: none"> • fear of not conforming • practical example eg you don't like being shouted at so you don't exercise 		
			16. (Autocratic – affect lifestyle)		
			Novices more likely to be influenced		
			<ul style="list-style-type: none"> • they do not have the experience to form their own judgements • practical example of beginner following healthy lifestyle behaviour 		
			17. (Autocratic – affect lifestyle)		
			Males more likely to be influenced		
			<ul style="list-style-type: none"> • males respond better to authoritarian behaviour • some dispute over this research because some females also respond well to autocratic 		

Question			Answer	Marks	Guidance	
			18. (Autocratic – affect lifestyle)	Good for large groups <ul style="list-style-type: none">• need for control/discipline• practical example		
			19. (Autocratic – affect lifestyle)	Good for hostile groups or dangerous situations <ul style="list-style-type: none">• need to establish/maintain discipline/authority		
			Democratic characteristics:			
			20. (Democratic)	Democratic is person orientated <ul style="list-style-type: none">• concerned with keeping good personal relations/getting on with the group.• when there is time available• practical example		
			21. (Democratic)	Decisions are shared <ul style="list-style-type: none">• opinions taken into account• practical example		
			Democratic affects lifestyle behaviour:			
			22. (Democratic – affect lifestyle)	Motivated to follow because friendlier approach <ul style="list-style-type: none">• good personal relationships foster confidence• ownership of decisions by group members can make leadership stronger• but if your opinions are ignored then can be demotivating		
			23. (Democratic – affect lifestyle)	Small groups respond well <ul style="list-style-type: none">• easier to gain ideas or share ideas with fewer people		
			24. (Democratic – affect lifestyle)	Intermediate/good performers/experienced exercisers/healthy people respond well <ul style="list-style-type: none">• they have more to offer decision making because of experiences/knowledge		

Question			Answer	Marks	Guidance
			<p>25. (Democratic – affect lifestyle)</p> <p>Females more likely to respond positively</p> <ul style="list-style-type: none"> • females tend to want to contribute more or are better at interpersonal communication/relations • some dispute over this because many males display these characteristics 		
			<p>26. (Democratic – affect lifestyle)</p> <p>Good for friendly or positive groups/individuals</p> <ul style="list-style-type: none"> • more likely for such people to want to contribute to decisions 		

Section B Biomechanics (Option B2)

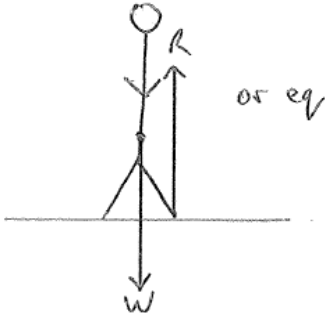
Question			Answer	Marks	Guidance
4	(a)		3 marks in total	3	
			1. (Axis of rotation) Transverse		
			2. (formula) angular velocity/ ω = <u>angular distance/displacement/θ</u> Time/ t or $\omega = \frac{6}{0.5}$		
			3. (answer) 12 rad/s or rads^{-1} (units must be correct)		

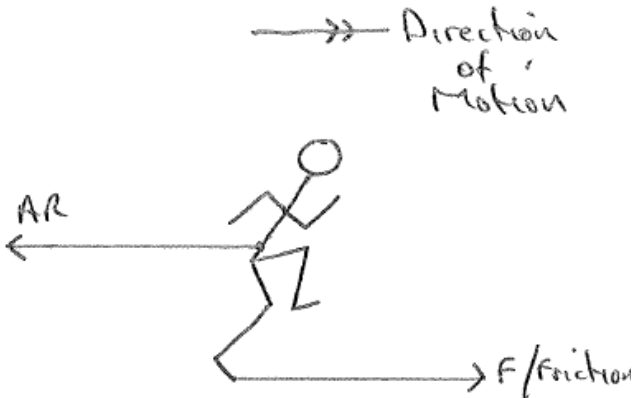
Question		Answer	Marks	Guidance														
(b)		<p>Graph (sub max 2):</p>  <p>Force</p> <p>— No follow through - - - Follow through.</p> <p>TIME</p> <table><tr><td>1. (axes)</td><td>Force and time labelled on correct axes and non follow through curve</td></tr><tr><td>2. (follow through)</td><td>Follow through curve as an extension to original curve</td></tr></table> <p>Effects (sub max 4):</p> <table><tr><td>3. (time)</td><td>Increases time that force is applied</td></tr><tr><td>4. (impulse)</td><td>Increases impulse acting on ball</td></tr><tr><td>5. (momentum)</td><td>Increases momentum of ball</td></tr><tr><td>6. (velocity/ distance)</td><td>Increases velocity of/distance travelled by ball</td></tr><tr><td>7. (control)</td><td>Increases control over the direction ball travels</td></tr></table>	1. (axes)	Force and time labelled on correct axes and non follow through curve	2. (follow through)	Follow through curve as an extension to original curve	3. (time)	Increases time that force is applied	4. (impulse)	Increases impulse acting on ball	5. (momentum)	Increases momentum of ball	6. (velocity/ distance)	Increases velocity of/distance travelled by ball	7. (control)	Increases control over the direction ball travels	6	<p>Sub max 2 for graph</p> <p>Sub max 4 for effects</p>
1. (axes)	Force and time labelled on correct axes and non follow through curve																	
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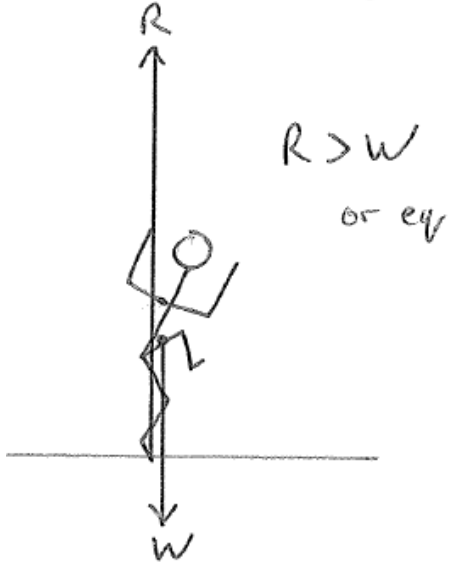
Question			Answer	Marks	Guidance																											
	(c)		<p>Explanation (sub max 5):</p> <table><tr><td>1. (aerofoil)</td><td>Discus is an aerofoil shape</td><td></td></tr><tr><td>2. (angle of attack)</td><td>Takes on an appropriate angle of attack to the direction of motion</td><td></td></tr><tr><td>3. (distance)</td><td>Air has to travel further over the top of the discus</td><td></td></tr><tr><td>4. (speed)</td><td>Air travels faster over the top of the discus</td><td></td></tr><tr><td>5. (low pressure)</td><td>This creates a low pressure area on top of the discus</td><td></td></tr><tr><td>6. (Bernoulli)</td><td>Called the Bernoulli principle</td><td></td></tr><tr><td>7. (pressure gradient)</td><td>Air tries to move from high to low pressure (creating the lift force)</td><td></td></tr></table> <p>Effects (sub max 2):</p> <table><tr><td>8. (non parabolic)</td><td>Makes flight path non parabolic/asymmetrical</td><td></td></tr><tr><td>9. (distance)</td><td>Lengthens flight path/discus travels further / is in air for longer</td><td></td></tr></table>	1. (aerofoil)	Discus is an aerofoil shape		2. (angle of attack)	Takes on an appropriate angle of attack to the direction of motion		3. (distance)	Air has to travel further over the top of the discus		4. (speed)	Air travels faster over the top of the discus		5. (low pressure)	This creates a low pressure area on top of the discus		6. (Bernoulli)	Called the Bernoulli principle		7. (pressure gradient)	Air tries to move from high to low pressure (creating the lift force)		8. (non parabolic)	Makes flight path non parabolic/asymmetrical		9. (distance)	Lengthens flight path/discus travels further / is in air for longer		6	<p>Sub max 5 for explanation</p> <p>Sub max 2 for effects</p>
1. (aerofoil)	Discus is an aerofoil shape																															
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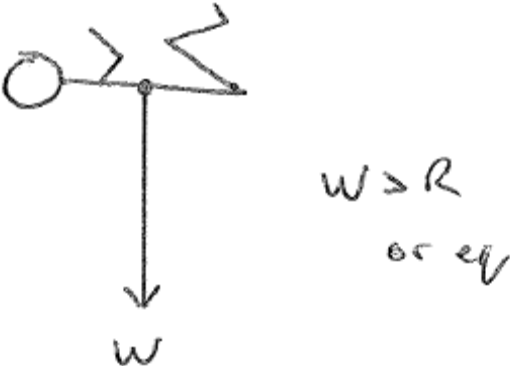
(d)*	
Levels Descriptors	Levels Discriminators
Level 4 (18 – 20 marks) A comprehensive answer: <ul style="list-style-type: none"> • detailed knowledge & excellent understanding • detailed analysis and excellent critical evaluation • well-argued, independent opinion and judgements which are well supported by relevant practical examples • very accurate use of technical and specialist vocabulary • high standard of written communication throughout. 	Discriminators at Level 4 are likely to include: <ul style="list-style-type: none"> • detailed understanding of balanced and unbalanced forces • detailed application of concepts to vertical and horizontal directions • detailed analysis • accurate and clear use of free body diagrams to illustrate analysis • relevant sporting examples throughout the answer • very accurate use of technical language throughout the answer • a well structured, balanced answer
Level 3 (13 - 17 marks) A competent answer: <ul style="list-style-type: none"> • good knowledge and clear understanding • good analysis and critical evaluation • independent opinions and judgements will be present but may not always be supported by relevant practical examples • generally accurate use of technical and specialist vocabulary • written communication is generally fluent with few errors. 	Discriminators at Level 3 are likely to include: <ul style="list-style-type: none"> • good knowledge and understanding of both balanced and unbalanced forces • good application of concepts to both horizontal and vertical directions but answer may not always include the effect of the combination of forces • good analysis • free body diagrams are clear and used throughout the answer; at the lower end of this level the diagrams may be inaccurate • some sporting examples used • generally accurate use of technical language • a competently structured, balanced answer
Level 2 (8 - 12 marks) A limited answer: <ul style="list-style-type: none"> • limited knowledge and understanding • some evidence of analysis and critical evaluation • opinion and judgement given but often unsupported by relevant practical examples • technical and specialist vocabulary used with limited success • written communication lacks fluency and contains errors. 	Discriminators at Level 2 are likely to include: <ul style="list-style-type: none"> • limited knowledge of either balanced or unbalanced forces concepts applied to either horizontal or vertical directions but answers may not always include the correct forces • limited attempt at analysis • free body diagrams attempted but there are likely to be inaccuracies • free body diagrams attempted but are likely to be inaccurate • an attempt at a sporting example • limited success in respect of the use of correct technical language
Level 1 (0 - 7 marks) A basic answer: <ul style="list-style-type: none"> • basic knowledge and little understanding • little relevant analysis or critical evaluation • little or no attempt to give opinion or judgement • little or no attempt to use technical and specialist vocabulary • errors in written communication will be intrusive. 	At Level 1 candidates are likely to: <ul style="list-style-type: none"> • show basic knowledge and understanding of either balanced or unbalanced forces • describe rather than analyse • show little or no identification of vertical or horizontal forces • make an attempt at a free body diagram
[0 marks] No response or no response worthy of credit.	

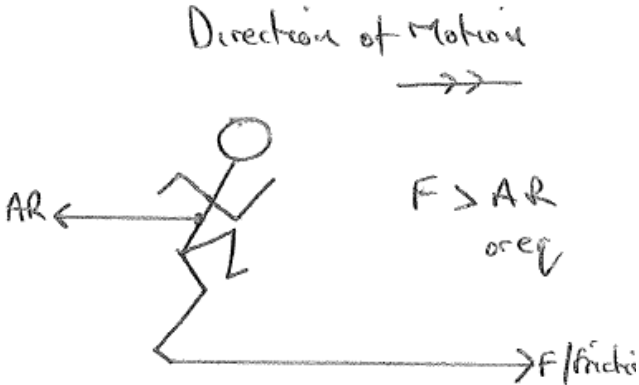
Question		Answer	Marks	Guidance								
	(d)*	<p>Indicative Content:</p> <p>Balanced forces:</p> <table><tr><td>1. (net force)</td><td>Net/resultant force is zero<ul style="list-style-type: none">forces cancel each other outequal in size but opposite in direction</td></tr><tr><td>2. (stationary)</td><td>Body will remain stationary Eg rugby scrum</td></tr><tr><td>3. (constant velocity)</td><td>Body will move with constant velocity/no acceleration Eg marathon runner</td></tr></table> <p>Vertical:</p> <table><tr><td>4. (RF = W)</td><td>Reaction force = weight<ul style="list-style-type: none">net vertical force = 0weight and reaction cancel each other out (a = 0)No acceleration in vertical direction Eg quadriceps stretch when standing up</td></tr></table>	1. (net force)	Net/resultant force is zero <ul style="list-style-type: none">forces cancel each other outequal in size but opposite in direction	2. (stationary)	Body will remain stationary Eg rugby scrum	3. (constant velocity)	Body will move with constant velocity/no acceleration Eg marathon runner	4. (RF = W)	Reaction force = weight <ul style="list-style-type: none">net vertical force = 0weight and reaction cancel each other out (a = 0)No acceleration in vertical direction Eg quadriceps stretch when standing up	20	
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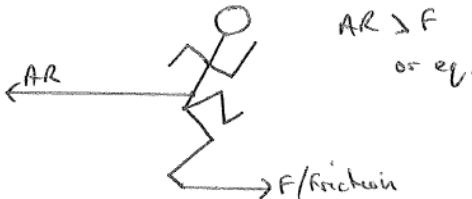
Question	Answer	Marks	Guidance
	<div data-bbox="365 244 770 802"> <p>5. (Free body diagram)</p> </div> <div data-bbox="770 244 1715 802"> <p>(Free body diagram)</p> <ul style="list-style-type: none"> Weight acting downwards from centre of mass Reaction force acting upwards from point of contact and equal in length to weight  </div>		
	<p>Horizontal:</p> <div data-bbox="365 871 770 1011"> <p>6. ($AR = F$)</p> </div> <div data-bbox="770 871 1715 1011"> <p>Air resistance = friction/forward force</p> <ul style="list-style-type: none"> net horizontal force = 0 AR and friction/force cancel out </div> <div data-bbox="365 1011 770 1118"> <p>7. ($a = 0$)</p> </div> <div data-bbox="770 1011 1715 1118"> <p>No acceleration in horizontal direction</p> <ul style="list-style-type: none"> Eg swimmer/runner moving with constant speed </div> <div data-bbox="365 1118 770 1283"> <p>8. (Free body diagram)</p> </div> <div data-bbox="770 1118 1715 1283"> <p>(Free body diagram)</p> <ul style="list-style-type: none"> Air resistance acting from CM opposite direction of motion friction/force acting from point of contact and equal in length to AR </div>		

Question			Answer	Marks	Guidance				
			<div></div>						
			<p>Unbalanced forces:</p> <table><tr><td>9. (net force)</td><td>Net/resultant force does not equal zero<ul style="list-style-type: none">force acting in one direction on a body is greater in size than the force acting in the opposite direction</td></tr><tr><td>10. (acceleration)</td><td>Body will accelerate<ul style="list-style-type: none">in direction of net forceEg Rugby ball when being kicked</td></tr></table>	9. (net force)	Net/resultant force does not equal zero <ul style="list-style-type: none">force acting in one direction on a body is greater in size than the force acting in the opposite direction	10. (acceleration)	Body will accelerate <ul style="list-style-type: none">in direction of net forceEg Rugby ball when being kicked		
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			<p>Vertical:</p> <table><tr><td>11. (RF>W)</td><td>Reaction force > weight<ul style="list-style-type: none">net upwards forceupwards accelerationEg high jumper at take off</td></tr></table>	11. (RF>W)	Reaction force > weight <ul style="list-style-type: none">net upwards forceupwards accelerationEg high jumper at take off				
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Question	Answer	Marks	Guidance
	<div data-bbox="383 248 763 983"> <p>12. (free body diagram)</p> </div> <div data-bbox="763 248 1711 983"> <p>(Free body diagram)</p> <ul style="list-style-type: none"> • Weight acting downwards from CM • RF acting upwards from feet but longer than Weight  </div>		
	<div data-bbox="383 983 763 1161"> <p>13. (RF < W)</p> </div> <div data-bbox="763 983 1711 1161"> <p>Reaction force < weight</p> <ul style="list-style-type: none"> • net downwards force • downwards acceleration • Eg diver after leaving the board </div>		

Question	Answer	Marks	Guidance
	<div data-bbox="383 248 768 815"> <p>14. (Free body diagram)</p> </div> <div data-bbox="768 248 1711 815"> <p>(free body diagram)</p> <ul style="list-style-type: none"> • Weight acting downwards from CM • Reaction force acting upwards from feet smaller than Weight/No reaction force at all  </div>		
	<p>Horizontal:</p> <div data-bbox="383 887 768 1062"> <p>15. ($F > AR$)</p> </div> <div data-bbox="768 887 1711 1062"> <p>Friction/force > Air resistance/fluid friction</p> <ul style="list-style-type: none"> • net forwards force • forward acceleration • Eg sprint start. </div>		

Question	Answer	Marks	Guidance
	<div data-bbox="383 248 763 852"> <p>16. (Free body diagram)</p> </div> <div data-bbox="763 248 1711 852"> <p>(Free body diagram)</p> <ul style="list-style-type: none"> • Friction/force acting from feet parallel to surface • Air resistance acting from CM opposite direction of motion and smaller than friction  </div> <div data-bbox="383 852 763 1031"> <p>17. ($F < AR$)</p> </div> <div data-bbox="763 852 1711 1031"> <p>Friction/force < Air resistance/fluid friction</p> <ul style="list-style-type: none"> • net backwards force • deceleration/negative acceleration • Eg any braking/changing direction </div>		

Question	Answer	Marks	Guidance
	<div data-bbox="383 248 763 834"> <p>18. (Free body diagram)</p> </div> <div data-bbox="763 248 1711 834"> <p>(Free body diagram)</p> <ul style="list-style-type: none"> • Friction/force $<$ or in same direction as AR • AR acting from CM opposite direction of motion and larger than friction <div data-bbox="999 416 1469 823"> <p>Direction of Motion $\rightarrow\rightarrow$</p>  </div> </div>		

Section B Exercise and Sport Physiology (Option B3)

Question		Answer	Marks	Guidance
5	(a)	4 marks for 4 of:	4	
		1. Glucose/Carbohydrate (Fuel) / glycogen		
		2. Broken down into/Converted into Pyruvic Acid		
		3. By the enzyme Phosphofructokinase (PFK)		
		4. In the absence of oxygen/anaerobically		
		5. Re synthesises 2 ATP's		
		6. Glycogen can be converted into glucose		
		7. Via the enzyme Glycogen Phosphorylase (GPP)		
		8. Pyruvic acid converted to lactic acid via lactate dehydrogenase		
	(b)	Calculation (sub max 2):	5	Sub max 2 for calculation Sub max 3 for effects
		1. $\frac{80}{4}$		
		2. 20 (kg/m ² /BMI)		
		Effects (sub max 3):		
		3. Increased risk of injury		
		4. More load bearing on joints joint pain		
		5. Decreased (joint) flexibility/mobility		
		6. Likely to tire/suffer fatigue more quickly		
		7. Long term stress on the cardio vascular/respiratory system may make exercise dangerous / may be better doing low-impact activities		
		8. Ought to seek medical advice before embarking upon any exercise regime		
		9. May not wish to get involved in exercise because of the potential for ridicule / lack of confidence		

Question		Answer	Marks	Guidance
(c)		Physiological factors (sub max 2):	6	Sub max 2 for physiological factors Sub max 4 for plyometrics training
		1. Muscle size/cross sectional area (of the muscle)		
		2. Muscle fibre type or % of fast/slow twitch fibres (in the muscle)		
		3. Amount of strength training undertaken resulting in hypertrophy of muscle (slightly different from pt 1)		
		4. Physical inactivity (due to injury) resulting in reversibility/atrophy of muscle		
		5. Amount of testosterone in the body		
		6. Joint angle – weakest point in a range of movement is relative to the angle of the joint		
		7. Muscle shape Eg multipennate		
		Plyometrics training (sub max 4):		
		8. Doesn't require complicated equipment / bounding / depth jumping		
		9. Recruiting more motor units/muscle fibres (to increase force of contraction) / converting eccentric work to concentric work		
		10. Important to consider the principles of moderation/overload/warm up/cool down		
		11. Most plyometric exercises are associated with the lower leg/but the principle can be applied to all skeletal muscle		
		12. More beneficial for athletes who perform explosive movements		
		13. There's a decreased risk of injury during competition if undergone plyometrics training		
14. Good pre strength training is required before undertake plyometrics/not appropriate for sedentary individual or novice as can carry an increased risk of injury				

(d)*	
Levels Descriptors	Levels Discriminators
Level 4 (18 – 20 marks) A comprehensive answer: <ul style="list-style-type: none"> • detailed knowledge & excellent understanding • detailed analysis and excellent critical evaluation • well-argued, independent opinion and judgements which are well supported by relevant practical examples • very accurate use of technical and specialist vocabulary • high standard of written communication throughout. 	Discriminators at Level 4 <u>are likely</u> to include: <ul style="list-style-type: none"> • detailed knowledge and excellent understanding of a wide range of ergogenic aids • comprehensive coverage of possible benefits to the athlete, demonstrating thorough understanding of the physiological effects upon the body • comprehensive coverage of harmful side effects • excellent understanding of legal status. • detailed analysis and excellent critical evaluation of a wide range of ergogenic aids
Level 3 (13 - 17 marks) A competent answer: <ul style="list-style-type: none"> • good knowledge and clear understanding • good analysis and critical evaluation • independent opinions and judgements will be present but may not always be supported by relevant practical examples • generally accurate use of technical and specialist vocabulary • written communication is generally fluent with few errors. 	Discriminators at Level 3 <u>are likely</u> to include: <ul style="list-style-type: none"> • good knowledge and clear understanding of a range of ergogenic aids • good coverage of possible benefits to the athlete, demonstrating good understanding of the physiological effects upon the body • good coverage of harmful side effects • good understanding of legal status. • good analysis and critical evaluation of a range of ergogenic aids
Level 2 (8 - 12 marks) A limited answer: <ul style="list-style-type: none"> • limited knowledge and understanding • some evidence of analysis and critical evaluation • opinion and judgement given but often unsupported by relevant practical examples • technical and specialist vocabulary used with limited success • written communication lacks fluency and contains errors. 	Discriminators at Level 2 <u>are likely</u> to include: <ul style="list-style-type: none"> • limited knowledge and understanding of a limited range of ergogenic aids • limited understanding of both positive and negative effects on the body • limited understanding of the legality issues. • some evidence of analysis and critical evaluation at the top end of this level although description is likely to be widespread
Level 1 (0 - 7 marks) A basic answer: <ul style="list-style-type: none"> • basic knowledge and little understanding • little relevant analysis or critical evaluation • little or no attempt to give opinion or judgement • little or no attempt to use technical and specialist vocabulary • errors in written communication will be intrusive. 	At Level 1 candidates <u>are likely</u> to: <ul style="list-style-type: none"> • show basic knowledge of ergogenic aids • show little or no knowledge of effects on body • have no reference to legality issues • describe rather than analyse/evaluate
[0 marks] No response or no response worthy of credit.	

Question		Answer	Marks	Guidance																									
	(d)*	<p>Indicative Content:</p> <ol style="list-style-type: none"> Increased use of ergogenic aids with improvements in technology <ul style="list-style-type: none"> but have also been around a long time (Eg Greeks and their hallucinogens) World Anti Doping Agency (WADA)/national & international governing bodies of sport have lists of banned/illegal ergogenic aids and codes of practice <ul style="list-style-type: none"> varies from one country to another regulations have to be rewritten as technology becomes more refined New “masking” drugs hide the use of banned substances <ul style="list-style-type: none"> diuretics a common mask – helping to flush steroids for example out of the body via the urine illegal if detected <table border="1"> <thead> <tr> <th></th><th>Ergogenic aid</th><th>Possible benefit/advantage to performer</th><th>Possible harmful side effects</th><th>Legal status</th></tr> </thead> <tbody> <tr> <td colspan="5">Dietary Manipulation</td></tr> <tr> <td>4.</td><td>Carb loading</td><td> <ul style="list-style-type: none"> Increase body glycogen stores/helps delay fatigue </td><td> <ul style="list-style-type: none"> May cause gastro problems </td><td> <ul style="list-style-type: none"> Legal </td></tr> <tr> <td>5.</td><td>Pre/Competition day meal</td><td> <ul style="list-style-type: none"> Carb rich meal 2-4 hrs before event can help top up glycogen stores </td><td> <ul style="list-style-type: none"> May cause rebound hypoglycaemia if eaten too close to an events (chocolate 5mins before wont cause this) </td><td> <ul style="list-style-type: none"> Legal </td></tr> <tr> <td>6.</td><td>Food/fluid intake during event (hypotonic & hypertonic drinks)</td><td> <ul style="list-style-type: none"> Replenishes glycogen stores/reduces risk of dehydration /prevents increase in body temperature (and possibility of heat exhaustion) /delays fatigue </td><td> <ul style="list-style-type: none"> Bloated stomach Dilute sodium levels in blood leading to fatigue </td><td> <ul style="list-style-type: none"> Legal </td></tr> </tbody> </table>		Ergogenic aid	Possible benefit/advantage to performer	Possible harmful side effects	Legal status	Dietary Manipulation					4.	Carb loading	<ul style="list-style-type: none"> Increase body glycogen stores/helps delay fatigue 	<ul style="list-style-type: none"> May cause gastro problems 	<ul style="list-style-type: none"> Legal 	5.	Pre/Competition day meal	<ul style="list-style-type: none"> Carb rich meal 2-4 hrs before event can help top up glycogen stores 	<ul style="list-style-type: none"> May cause rebound hypoglycaemia if eaten too close to an events (chocolate 5mins before wont cause this) 	<ul style="list-style-type: none"> Legal 	6.	Food/fluid intake during event (hypotonic & hypertonic drinks)	<ul style="list-style-type: none"> Replenishes glycogen stores/reduces risk of dehydration /prevents increase in body temperature (and possibility of heat exhaustion) /delays fatigue 	<ul style="list-style-type: none"> Bloated stomach Dilute sodium levels in blood leading to fatigue 	<ul style="list-style-type: none"> Legal 	20	
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Question			Answer					Marks	Guidance
			7.	Post competition meal/fluid intake (hypertonic drinks)	<ul style="list-style-type: none"> First 2 hours body most receptive to carb reloading 	<ul style="list-style-type: none"> Possible conversion of carbs to fats 			
			8.	Creatine supplements	<ul style="list-style-type: none"> Increase PC levels in body/improves efficiency of ATP/PC energy system 	<ul style="list-style-type: none"> Relatively new ergo aid and long term effects yet to be seen 	<ul style="list-style-type: none"> Legal 		
			9.	Human growth Hormone (HGH) <ul style="list-style-type: none"> Can be synthetically increased or increased via diet, sleep & exercise – a healthy lifestyle 	<ul style="list-style-type: none"> Stimulates bone, cartilage and muscle growth (therefore enhances healing process after injury)/ increases muscle mass and strength/ increases blood glucose levels/ increases lipases/decreases overall body fat 	<ul style="list-style-type: none"> Synthetic increase can cause joint pain/arthritis/ abnormal heart/liver growth/ muscle weakness/ increased blood fats/ glucose intolerance/ diabetes/ impotence/ hypertension 	<ul style="list-style-type: none"> Illegal/ Banned if synthetically increased 		
			10.	Gene doping	<ul style="list-style-type: none"> Could produce a genetically engineered super athlete / increased red blood cells / increased muscle mass 	<ul style="list-style-type: none"> Still very early days of research/ mainly used to treat people who have medical ailments not to enhance performance 	<ul style="list-style-type: none"> Illegal/ Banned if synthetically increased 		

Question			Answer				Marks	Guidance		
			11	Blood doping	<ul style="list-style-type: none">Increases total volume of red blood cells/increases oxygen carrying capacity	Increased risk of blood clots/thickening of blood	<ul style="list-style-type: none">Illegal/ BannedAthletes have different natural levels so can be difficult to tellaltitude training isn't though			
			12	Recombinant Erythropoietin (Rh EPO)	Can artificially increase red blood cell production	Reduces natural production of EPO /Increased risk of blood clots/thickening of blood	<ul style="list-style-type: none">Illegal			
			Cooling aids/ice baths							
			13	Pre cooling (eg ice jacket)	<ul style="list-style-type: none">Reduces body core temperature/ particularly useful before prolonged exercise in high temperatures/ maintains intensity and speed of performance	<ul style="list-style-type: none">Can cause unwanted cardio vascular responses/ reduced heart rate/difficult to perceive own exertion levels at start of exercise in first 15 mins when ice removed	<ul style="list-style-type: none">Legal			
			14	Post cooling eg ice wraps/ice baths)	<ul style="list-style-type: none">Reduces swelling and blood leaking into the tissues/aid treatment of injuries/helps remove lactic acid/when out of ice capillaries flush tissues with fresh blood/	<ul style="list-style-type: none">Some find ice very painful/can cause angina pain if coronary arteries constricted/ may hide more serious injuries/	<ul style="list-style-type: none">Legal			

Question			Answer				Marks	Guidance
				reduce muscle damage/ decrease DOMS	increases blood pressure/ (older people) may suffer decreased efficiency of vasoconstriction/ice burns if held on skin too long			
		15	Resistance aids/pulleys/ parachutes	<ul style="list-style-type: none"> • Provide variety and fun/thought to be more useful than weight training in sitting or standing position / increase on overload while maintaining correct technique 	<ul style="list-style-type: none"> • Technique employed with device may be different from real technique 	<ul style="list-style-type: none"> • Legal 		
		16	Alcohol	<ul style="list-style-type: none"> • No real benefit/carb is small store of energy/can calm nerves/build confidence 	<ul style="list-style-type: none"> • Depressant in long term/can impede motor performance/slow reaction time 	<ul style="list-style-type: none"> • Legal/but can be illegal in some sports 		
		17	Caffeine	<ul style="list-style-type: none"> • Stimulates CNS/acts as a stimulant/ increases alertness/ decreases reaction time/increases breakdown of FFA's (saves important glycogen stores)/lowers perception of effort 	<ul style="list-style-type: none"> • Acts as a diuretic and can cause dehydration/ therefore causing heat regulation problems 	<ul style="list-style-type: none"> • Legal but there is a limit (of 7 - 8 strong cups of coffee) 		
		18	Anabolic steroids	<ul style="list-style-type: none"> • Promotes increase in muscle mass/aid muscle repair 	<ul style="list-style-type: none"> • Many caused by synthetically inducing these unnaturally high levels of 	<ul style="list-style-type: none"> • Illegal/banned 		

Question			Answer					Marks	Guidance
						testosterone			
		19	Analgesics/anti-inflammatory agents (cortisone, aspirin, ibuprofen)	<ul style="list-style-type: none"> Mask pain and allow them to continue training/performing 	<ul style="list-style-type: none"> Can cause further injuries 	<ul style="list-style-type: none"> Legal 			
		20	Soda loading	<ul style="list-style-type: none"> Neutralises blood acidity Quicker removal of lactic acid Greater strength / endurance 	<ul style="list-style-type: none"> Vomiting / diarrhoea 	<ul style="list-style-type: none"> Legal 			

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