

# **Physical Education**

Advanced Subsidiary GCE **G453**

Principles and concepts across different areas of Physical Education

## **Mark Scheme for June 2010**

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Question	Expected Answer	Mark																																																
<b>Section A – Historical Studies (Option A1)</b>		<b>[4]</b>																																																
1	<p>(a) Describe three features of the 1950s programme of Physical Education for state schools (<i>Moving and Growing and Planning the Programme</i>). Outline one difference between the 1950s programme and the programme for PE in state secondary schools today.</p> <p style="text-align: center;"><b>4 marks for 4 of: sub max 3 for features - mark first three answers only</b></p> <p style="text-align: center;"><b>sub max 1 for difference – mark first difference only</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3">Features of 1950s: Sub Max three</th> </tr> </thead> <tbody> <tr> <td style="width: 5%;">1</td> <td style="width: 30%;">(enjoyment)</td> <td style="width: 65%;">enjoyment/having fun/participation/the experience</td> </tr> <tr> <td>2</td> <td>(education)</td> <td>education/learning skills/holistic development/development of whole child/more than physical benefits</td> </tr> <tr> <td>3</td> <td>(ed. gym)</td> <td>(educational) gymnastics/movement to music/swimming/games skills/dance</td> </tr> <tr> <td>4</td> <td>(decentralized)</td> <td>decentralised/individuals doing different things/not all doing same at same time/not centralised/more freedom</td> </tr> <tr> <td>5</td> <td>(problem solving)</td> <td>problem solving/thinking or cognitive/group work/partner work</td> </tr> <tr> <td>6</td> <td>(child-centred)</td> <td>child centred/activities for different age groups</td> </tr> <tr> <td>7</td> <td>(facility/apparatus)</td> <td>in gymnasia/purpose built facility or apparatus/apparatus similar to army assault course</td> </tr> <tr> <td>8</td> <td>(teachers)</td> <td>specialist (PE) teachers/interaction with teachers</td> </tr> <tr> <th colspan="3">Difference/s: sub max one – mark first answer only</th> </tr> <tr> <td>9</td> <td>(age group)</td> <td>M&amp;G for junior age</td> </tr> <tr> <td>10</td> <td>(NC)</td> <td>National curriculum/compulsory/ compulsory content/PESSYP/SSCOs/partnerships/ other initiatives/5 hour offer</td> </tr> <tr> <td>11</td> <td>(breadth)</td> <td>Broader today/examinations/theory</td> </tr> <tr> <td>12</td> <td>(specialists)</td> <td>(Today): more specialist PE teachers/teachers must be qualified/taught by graduate profession</td> </tr> <tr> <td>13</td> <td>(facilities)</td> <td>(Today): better facilities/sports halls/ use of community facilities/dual use</td> </tr> <tr> <td>14</td> <td>(pressure)</td> <td>(Today): under pressure/aligning pressure on time table with time requirements</td> </tr> </tbody> </table>	Features of 1950s: Sub Max three			1	(enjoyment)	enjoyment/having fun/participation/the experience	2	(education)	education/learning skills/holistic development/development of whole child/more than physical benefits	3	(ed. gym)	(educational) gymnastics/movement to music/swimming/games skills/dance	4	(decentralized)	decentralised/individuals doing different things/not all doing same at same time/not centralised/more freedom	5	(problem solving)	problem solving/thinking or cognitive/group work/partner work	6	(child-centred)	child centred/activities for different age groups	7	(facility/apparatus)	in gymnasia/purpose built facility or apparatus/apparatus similar to army assault course	8	(teachers)	specialist (PE) teachers/interaction with teachers	Difference/s: sub max one – mark first answer only			9	(age group)	M&G for junior age	10	(NC)	National curriculum/compulsory/ compulsory content/PESSYP/SSCOs/partnerships/ other initiatives/5 hour offer	11	(breadth)	Broader today/examinations/theory	12	(specialists)	(Today): more specialist PE teachers/teachers must be qualified/taught by graduate profession	13	(facilities)	(Today): better facilities/sports halls/ use of community facilities/dual use	14	(pressure)	(Today): under pressure/aligning pressure on time table with time requirements	
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(b)	<p>Popular recreations in pre-industrial Britain had certain characteristics. In what ways was Real Tennis different from most other popular recreations?            Account for limited participation in Real Tennis today.            * DO NOT ACCEPT LAWN TENNIS            5 marks for 5 of: sub max 4 for differences            sub max 2 for limited participation today</p>	[5]
1	(courtly)	Courtly/played by elite/upper class/gentry (BOD)/exclusive
2	(rules)	It had written/complex rules/it was structured/ <u>more</u> organised
3	(not violent)	It was not cruel or violent/it had etiquette/it was high culture/it was sophisticated/skilful/respectable/civilised
4	(regular)	It was played regularly/often
5	(facilities)	It had purpose built facilities/expensive court/not natural facility/it had specialist or expensive equipment
6	(not local)	Not local/upper class had transport or could travel to play
<b>Limited participation today:</b>		
7	(facilities)	Limited availability of (specialist) facilities/few courts or clubs
8	(expense)	Expensive
9	(skill)	Skilful game/difficult to play/complex rules/lack of coaches
10	(friends)	Don't know others who play/friends don't play/lack of role models or media coverage
11	(perception)	Perception that it is an exclusive game/for Royalty/do not choose to/feel 'not for them'
12	(initiatives)	Limited advertising or initiatives/unaware of opportunities
13	(lawn tennis)	Lawn tennis as alternative

Question	Expected Answer		Mark [6]
(c)	<b>Cricket in public schools had very high status in stage three. Explain how participation in cricket could develop values in public school boys at this time. Explain barriers to achieving these values in cricket in state schools today.</b>		
	<b>6 marks for 6 of:      sub max 5 for values                                  sub max 2 for barriers today                                  marks to be awarded in context of cricket                                  LIST OF VALUES = NO MARKS</b>		
	<b>Cricket could develop:</b>		
	1	(honesty/ integrity)      eg 'walking' when out or admitting catch not made/not cheating/sportsmanship or fair play/accepting umpire's decisions/respect of opposition/etiquette	
	2	(courage/self control)      Courage/physicality/manliness/coping with difficulty/not complaining/test of temperament/discipline/keeping cool under pressure	
	3	(teamwork)      co-operation/social cohesion	
	4	(leadership)      decision making (captaincy)/response to leadership/social control	
	5	(loyalty)      (Loyalty) to team or house or school	
	6	(endeavour)      determination/perseverance/commitment	
	7	(trust)      (Trust) in team mates/in captain's decisions/in selection	
	8	(skill)      Prowess/achievement/improvement/ eg in cricket	
	9	(health)      Health/healthy balanced lifestyles/well being	
	10	(organisation)      Management/arrange/business skills	
	<b>Barriers to developing these values today:</b>		
	11	(esteem/role models/ media)      Role models/media may not always show these values	
	12	(win ethic)      Increased emphasis on winning rather than taking part as key outcome/gamesmanship/sledging/taken more seriously	
	13	(opportunity)      Lack of opportunity such as limited funding / time (pressure on curriculum) / skill levels / seasonal	
	14	(provision)      Lack of provision such as limited/suitable equipment /facilities / suitably qualified coaches / transport	
	15	(organisation)      In most schools the organisation of games is done by PE /sport department limiting opportunities	

Question	Expected Answer	Mark
	<p>(d) <b>Evaluate critically the impact of socio-cultural factors that have influenced the growth and development of association football from 1850 to today.</b></p> <p><b>A2 level descriptors</b></p> <p><b>Level 4: a comprehensive answer (18 - 20 marks)</b></p> <ul style="list-style-type: none"> <li>• detailed knowledge &amp; excellent understanding;</li> <li>• detailed analysis and excellent critical evaluation;</li> <li>• well-argued, independent opinion and judgements which are well supported by relevant practical examples;</li> <li>• very accurate use of technical and specialist vocabulary;</li> <li>• high standard of written communication throughout.</li> </ul> <p><b>Discriminators from L3 are likely to include:</b></p> <ul style="list-style-type: none"> <li>• a logical and detailed discussion of relevant factors;</li> <li>• a very well structured and balanced answer;</li> <li>• an understanding that working conditions, urban expansion and improved transport were key factors;</li> <li>• an appreciation that improved transport was the most significant factor;</li> <li>• clear reference to and analysis of more recent contemporary developments.</li> </ul> <p><b>Level 3: a competent answer (13 – 17 marks)</b></p> <ul style="list-style-type: none"> <li>• good knowledge &amp; clear understanding;</li> <li>• good analysis and critical evaluation;</li> <li>• Independent opinions and judgements will be present but may not always be supported by relevant practical examples;</li> <li>• generally accurate use of technical and specialist vocabulary;</li> <li>• written communication is generally fluent with few errors.</li> </ul> <p><b>Discriminators from L2 are likely to include:</b></p> <ul style="list-style-type: none"> <li>• a logical discussion of relevant factors;</li> <li>• a well structured answer;</li> <li>• a good understanding of a broad range of impacting factors;</li> <li>• clear reference to the contemporary game.</li> </ul> <p><b>Level 2: a limited answer (8 – 12 marks)</b></p> <ul style="list-style-type: none"> <li>• limited knowledge &amp; understanding;</li> <li>• some evidence of analysis and critical evaluation;</li> <li>• opinion and judgement given but often unsupported by relevant practical examples;</li> <li>• technical and specialist vocabulary used with limited success;</li> <li>• written communication lacks fluency and contains errors.</li> </ul> <p><b>Discriminators from L1 are likely to include:</b></p> <ul style="list-style-type: none"> <li>• an understanding of factors other than transport improvements;</li> <li>• more reference to contemporary developments.</li> </ul> <p><b>Level 1: a basic answer (0 – 7 marks)</b></p> <ul style="list-style-type: none"> <li>• basic knowledge &amp; little understanding;</li> <li>• little relevant analysis or critical evaluation;</li> <li>• little or no attempt to give opinion or judgement;</li> <li>• little or no attempt to use technical and specialist vocabulary;</li> <li>• errors in written communication will be intrusive.</li> </ul>	

Question	Evaluate critically the impact of socio-cultural factors that have influenced the growth and development of association football from 1850 to today.		Mark
<b>Indicative Content:</b>			
<b>Growth and development: (with development points)</b>			
1	(numbers)	urbanisation/large number of people in one place <ul style="list-style-type: none"> <li>• captive audience</li> </ul>	
2	(provision for spectator)	provision for spectator <ul style="list-style-type: none"> <li>• specialist facilities</li> <li>• terraces</li> </ul>	
3	(time)	Fewer working hours <ul style="list-style-type: none"> <li>• more time/time to watch/play</li> <li>• Saturday half day/Wednesday half day</li> <li>• early closing movement</li> </ul>	
4	(affordable)	Affordable/higher wages/cheap to play <ul style="list-style-type: none"> <li>• can afford transport</li> <li>• entrance or gate money available</li> </ul>	
5	(fixtures)	fixtures <ul style="list-style-type: none"> <li>• leagues/cups</li> <li>• competitions set up</li> </ul>	
6	(transport)	improved transport <ul style="list-style-type: none"> <li>• able to get to (away) matches</li> <li>• (lead to) increased regularity</li> </ul>	
7	(professionalism)	opportunities for professionalism <ul style="list-style-type: none"> <li>• pro. football a good job</li> <li>• a chance to escape factory or urban deprivation</li> </ul>	
8	(broken time payments)	'broken time' payments <ul style="list-style-type: none"> <li>• working class unable to afford to miss work and were paid to play</li> </ul>	
9	(class)	became 'the people's game' or the working class game <ul style="list-style-type: none"> <li>• middle class influenced game</li> <li>• game became more respectable</li> <li>• Corinthian casuals</li> </ul>	
10	(business)	business opportunity <ul style="list-style-type: none"> <li>• running a club</li> </ul>	
11	(media/literacy/communication)	Improved literacy/communication <ul style="list-style-type: none"> <li>• increased media interest lead to publicity</li> <li>• lead to people reading about team/s or individuals</li> </ul>	
12	(rules/organisation)	game became standardised <ul style="list-style-type: none"> <li>• more controlled</li> <li>• less violent</li> <li>• ex-public schoolboys set up NGB/FA</li> </ul>	
13	(law and order)	increased law and order <ul style="list-style-type: none"> <li>• meant less gambling (on football)</li> <li>• game became socially acceptable</li> <li>• church acceptance</li> </ul>	
14	(public schools)	Public school impact/university melting pot <ul style="list-style-type: none"> <li>• ex university men back to schools as assistant master</li> <li>• spread to other countries</li> </ul>	

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15	(teams)	Expansion through factory or church teams <ul style="list-style-type: none"> <li>• or other example</li> </ul>	
16	(technology/facilities)	Purpose built or specialist facilities for performer <ul style="list-style-type: none"> <li>• parks</li> <li>• kit or equipment</li> </ul>	
<b>More recently:</b>			
17	(commercialism)	Increased commercialisation <ul style="list-style-type: none"> <li>• dev/eg</li> </ul>	
18	(media)	More media coverage/internet/influence <ul style="list-style-type: none"> <li>• dev / eg</li> </ul>	
19	(minority groups)	Women's game/disability/ethnicity <ul style="list-style-type: none"> <li>• dev / eg</li> </ul>	
20	(status)	Star status of top players/role models <ul style="list-style-type: none"> <li>• dev / eg</li> </ul>	
21	(salary)	Salary scales/professionalism <ul style="list-style-type: none"> <li>• dev / eg</li> </ul>	
22	(European players)	Bosman ruling/non-English players in Premier league <ul style="list-style-type: none"> <li>• dev / eg</li> </ul>	
23	(technology)	Equipment/kit/facilities/increase in technology <ul style="list-style-type: none"> <li>• dev / eg</li> </ul>	
24	(Transport development)	International travel available for all <ul style="list-style-type: none"> <li>• dev / eg</li> </ul>	
25	(Grass roots)	Grass roots scheme <ul style="list-style-type: none"> <li>• dev / eg</li> <li>• FA skill schools</li> <li>• Expansion of school sport</li> </ul>	
26	(Rules/organisation)	Increase in number of fixture/competition/rule change <ul style="list-style-type: none"> <li>• dev / eg</li> <li>• more officials</li> </ul>	

Question	Expected Answer	Mark
<b>Section A – Comparative Studies (Option A2)</b>		<b>[5]</b>
<b>2</b>	<b>(a) In most countries, participation and performance in physical activity are affected by historical and geographical factors. Outline historical and geographical factors in the UK and in Australia that affect participation and performance in physical activity.</b>	
<b>5 marks for 5 of:</b>		
<b>Sub max 3 from UK:</b>		
<b>The UK – historical:</b>		
<b>Sub sub max 2</b>		
1	(taking part)	Taking part traditionally more important than winning/tradition of fair play or sportsmanship
2	(public schools)	Impact of 19 <sup>th</sup> century public schools/value of team games or teamwork
3	(amateurism)	Tradition of amateurism/professionalism as relatively new phenomenon in many sports
4	(class)	Class affects minority group participation/impact of hierarchical society
5	(inventions)	Many 'sports' started in Britain
<b>The UK – geographical:</b>		
<b>Sub sub max 2</b>		
6	(size)	Relatively small country/should be straightforward to standardise initiatives for provision and participation
7	(topography)	countryside influences opportunities
8	(climate)	(comparatively) unfavourable climate (for year round outdoor activity or leading to seasonal play)/need for good indoor provision
9	(dense pop)	(relatively) dense population/large towns and cities/need for appropriate provision for physical activity
10	(transport)	Good transport links should be favourable/increasing road congestion unfavourable
<b>Sub max 3 from Australia</b>		
<b>Australia – historical:</b>		
<b>Sub sub max 2</b>		
11	(colonial/motherland)	Colonial influence/British sports adopted
12	(rivalry)	Significance of defeating Britain in international sport/history of Ashes
13	(frontierism)	Frontierism/pioneering spirit/bush culture
<b>Australia – geographical:</b>		
<b>Sub sub max 2</b>		
14	(size)	Vast country (different time zones)/difficulty in standardising initiatives/state autonomy in terms of initiatives for provision and participation/
15	(topography)	Varied topography gives excellent opportunity for varied activities (sea to ski)
16	(climate)	Favourable climate
17	(sparse population)	Most areas unpopulated/sparsely populated/vast areas of inhospitable land/majority live in 6 (coastal) cities
18	(transport)	Good transport links (road, rail, air)

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2 (b)	<p>Compare the strategies to promote mass participation in Australia with those in the UK.</p> <p>5 marks for 5 of:</p>	[5]																																												
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2 (c)	<p><b>Describe Physical Education in American high schools. Compare Physical Education in the USA and in the UK.</b></p> <p><b>5 marks for 5 of:</b></p> <p><b>Sub max 2 for USA only:</b></p> <table border="1"> <thead> <tr> <th></th> <th></th> <th><b>PE in USA:</b></th> <th><b>Comparison with UK:</b></th> </tr> </thead> <tbody> <tr> <td>1</td> <td>(focus on...)</td> <td>direct skill learning/fitness/training</td> <td>...participation/skills/holistic development/educational emphasis</td> </tr> <tr> <td>2</td> <td>(assessment)</td> <td>(focus on) testing or measurement</td> <td>(less formal) teacher assessment</td> </tr> <tr> <td>3</td> <td>(exams)</td> <td>Limited/none at school level</td> <td>Widespread examinations in PE</td> </tr> <tr> <td>4</td> <td>(prof dev...)</td> <td>...provided by superintendent or state</td> <td>...provided via public or private routes</td> </tr> <tr> <td>5</td> <td>(good practice)</td> <td>Blue Ribband Schools/ Beacon Schools</td> <td>Specialist sports colleges/Beacon Schools/independent school that focus on sport</td> </tr> <tr> <td>6</td> <td>(admin)</td> <td>Decentralised admin</td> <td>Decentralised admin/becoming more centralised</td> </tr> <tr> <td>7</td> <td>(funding)</td> <td>State funded</td> <td>State funded/schools need or seek additional funding</td> </tr> <tr> <td>8</td> <td>(control)</td> <td>Controlled by school board</td> <td>Schools (increasingly) autonomous</td> </tr> <tr> <td>9</td> <td>(inspection)</td> <td>Inspected by superintendent (of school board)</td> <td>Inspection by Ofsted</td> </tr> <tr> <td>10</td> <td>(NC)</td> <td>No National curriculum/optional</td> <td>National curriculum</td> </tr> <tr> <td>11</td> <td>(status)</td> <td>PE lower status (than sport)</td> <td>PE higher status</td> </tr> </tbody> </table>			<b>PE in USA:</b>	<b>Comparison with UK:</b>	1	(focus on...)	direct skill learning/fitness/training	...participation/skills/holistic development/educational emphasis	2	(assessment)	(focus on) testing or measurement	(less formal) teacher assessment	3	(exams)	Limited/none at school level	Widespread examinations in PE	4	(prof dev...)	...provided by superintendent or state	...provided via public or private routes	5	(good practice)	Blue Ribband Schools/ Beacon Schools	Specialist sports colleges/Beacon Schools/independent school that focus on sport	6	(admin)	Decentralised admin	Decentralised admin/becoming more centralised	7	(funding)	State funded	State funded/schools need or seek additional funding	8	(control)	Controlled by school board	Schools (increasingly) autonomous	9	(inspection)	Inspected by superintendent (of school board)	Inspection by Ofsted	10	(NC)	No National curriculum/optional	National curriculum	11	(status)	PE lower status (than sport)	PE higher status	[5]
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2	<p>(d) Compare how schools and colleges prepare young people for participation in professional sport in the USA and the UK. Evaluate the effectiveness of each system.</p> <p><b>A2 level descriptors</b></p> <p><b>Level 4: a comprehensive answer (18 – 20 marks)</b></p> <ul style="list-style-type: none"> <li>• detailed knowledge &amp; excellent understanding;</li> <li>• detailed analysis and excellent critical evaluation;</li> <li>• well-argued, independent opinion and judgements which are well supported by relevant practical examples;</li> <li>• very accurate use of technical and specialist vocabulary;</li> <li>• high standard of written communication throughout.</li> </ul> <p><b>Discriminators from L3 are likely to include:</b></p> <ul style="list-style-type: none"> <li>• regular critical evaluation of the issue;</li> <li>• high quality independent opinion/judgement of value of the USA (or UK) system;</li> <li>• examples of individuals who have experienced the system or now either system has helped in practice (eg successful Olympians);</li> <li>• a more structured answer.</li> </ul> <p><b>Level 3: a competent answer (13 – 17 marks)</b></p> <ul style="list-style-type: none"> <li>• good knowledge &amp; clear understanding;</li> <li>• good analysis and critical evaluation;</li> <li>• Independent opinions and judgements will be present but may not always be supported by relevant practical examples;</li> <li>• generally accurate use of technical and specialist vocabulary;</li> <li>• written communication is generally fluent with few errors.</li> </ul> <p><b>Discriminators from L2 are likely to include:</b></p> <ul style="list-style-type: none"> <li>• some critical evaluation of the two systems;</li> <li>• attempt at value judgements</li> <li>• several direct comparisons of the systems.</li> </ul> <p><b>Level 2: a limited answer (8 – 12 marks)</b></p> <ul style="list-style-type: none"> <li>• limited knowledge &amp; understanding;</li> <li>• some evidence of analysis and critical evaluation;</li> <li>• opinion and judgement given but often unsupported by relevant practical examples;</li> <li>• technical and specialist vocabulary used with limited success;</li> <li>• written communication lacks fluency and contains errors.</li> </ul> <p><b>Discriminators from L1 are likely to include:</b></p> <ul style="list-style-type: none"> <li>• increased attempt at comparison between USA and UK;</li> <li>• some attempt at evaluation.</li> </ul> <p><b>Level 1: a basic answer (0 – 7 marks)</b></p> <ul style="list-style-type: none"> <li>• basic knowledge &amp; little understanding;</li> <li>• little relevant analysis or critical evaluation;</li> <li>• little or no attempt to give opinion or judgement;</li> <li>• little or no attempt to use technical and specialist vocabulary;</li> <li>• errors in written communication will be intrusive.</li> </ul>	

Question	Compare how schools and colleges prepare young people for participation in professional sport in the USA and the UK. Evaluate the effectiveness of each system.			Mark
<p>1 tick for comparative;            1 tick for US DEV;            1 tick for UK DEV  <b>NO DEVELOPMENT CREDIT WITHOUT COMPARISON</b>            Max 4 for US only</p> <p><b>Indicative Content:</b></p>				
<p><b>How school or colleges help to prepare young people for participation in professional sport</b></p>				
		in USA:	in UK:	<b>[20]</b>
1	(excellence)	School/colleges (recognised as) centres of sport excellence <ul style="list-style-type: none"> <li>• dev / eg</li> </ul>	Not normally <ul style="list-style-type: none"> <li>• some examples eg Millfield, Loughborough, Bath,</li> <li>• UWIC Devolved national Institutes</li> <li>• eg EIS/apprenticeships or academies linked to top level clubs</li> </ul>	
2	(scholarship)	College scholarships for elite high school <ul style="list-style-type: none"> <li>• or overseas students/ binding contracts</li> <li>• more time to sport than study.</li> </ul>	Not on same scale <ul style="list-style-type: none"> <li>• some bursaries</li> <li>• (eg TASS)/lottery funding/World Class Programme</li> <li>• government or exchequer funding</li> </ul>	
3	(special admit)	Special admit programmes <ul style="list-style-type: none"> <li>• for those who are elite but academically under qualified</li> </ul>	Unis linked to Institutes <ul style="list-style-type: none"> <li>• (eg Bath) adding performer to appropriate courses or extend length of course</li> </ul>	
4	(coaching)	Specialist or high quality coaching <ul style="list-style-type: none"> <li>• dev / eg</li> </ul>	Less so at school/uni level <ul style="list-style-type: none"> <li>• Yes via institutes</li> <li>• dev / eg</li> </ul>	
5	(H & F)	Hire and fire <ul style="list-style-type: none"> <li>• (for athletic directors or coaches)</li> <li>• incentives to win</li> </ul>	Not so at school/uni level <ul style="list-style-type: none"> <li>• Yes at institute level</li> <li>• dev / eg</li> </ul>	
6	(reflection)	High School/College sport is a reflection of the professional game <ul style="list-style-type: none"> <li>• dev / eg</li> </ul>	Much less so at school/uni level <ul style="list-style-type: none"> <li>• dev / eg</li> </ul>	
7	(status)	Sport high status at	Variable (between schools or	

Question	Compare how schools and colleges prepare young people for participation in professional sport in the USA and the UK. Evaluate the effectiveness of each system.			Mark
		this level	unis)	
		<ul style="list-style-type: none"> <li>• dev / eg</li> </ul>	<ul style="list-style-type: none"> <li>• dev / eg</li> </ul>	
8	(Specialisation)	student/student athlete will specialise or focus on one sport <ul style="list-style-type: none"> <li>• dev / eg</li> </ul>	Increasingly <ul style="list-style-type: none"> <li>• so/most school or uni sport less elite more for participation or social</li> <li>• dev / eg</li> </ul>	
9	(business)	College sport is big business <ul style="list-style-type: none"> <li>• (like pro sport)/college generate own funding</li> </ul>	Less so <ul style="list-style-type: none"> <li>• school sport under pressure of limited funding in many schools</li> <li>• uni sport funded by students and grants</li> </ul>	
10	(facilities)	Excellent facilities/stadia/ <ul style="list-style-type: none"> <li>• equivalent to pro sport</li> <li>• dev / eg</li> </ul>	Less so – more variable <ul style="list-style-type: none"> <li>• Yes at institutes and nat centres</li> <li>• dev / eg</li> </ul>	
11	(equipment)	High quality or pro standard equipment <ul style="list-style-type: none"> <li>• dev / eg</li> </ul>	Less so – more variable <ul style="list-style-type: none"> <li>• Yes at institutes and nat centres</li> </ul>	
12	(competition)	Competition or matches replicate pro standards <ul style="list-style-type: none"> <li>• dev / eg</li> <li>• varsity only</li> </ul>	Not so <ul style="list-style-type: none"> <li>• (accept exceptions eg Harpbury)</li> <li>• dev / eg</li> <li>• multiple teams (eg 1<sup>st</sup>/2<sup>nd</sup> team)</li> </ul>	
13	(medicine)	Medical services <ul style="list-style-type: none"> <li>• physiotherapy /medicine/surgery etc available</li> </ul>	Less so – <ul style="list-style-type: none"> <li>• more variable or ad hoc</li> <li>• individual examples eg county netball or hockey squads with links to medics</li> <li>• Yes at institutes and national centres</li> </ul>	
14	(media)	Media coverage of College sport/high profile <ul style="list-style-type: none"> <li>• Media attraction</li> <li>• Large crowds</li> <li>• paying spectators</li> </ul>	Not so <ul style="list-style-type: none"> <li>• free to watch</li> <li>• small crowds (parents)</li> </ul>	
15	(Lombardianism)	(driven by) Lombardian or win ethic (all levels) <ul style="list-style-type: none"> <li>• radical ethic</li> <li>• dev / eg</li> </ul>	Equally so at elite Institute level/emphasis generally on participation. <ul style="list-style-type: none"> <li>• dev / eg</li> </ul>	

Question	Compare how schools and colleges prepare young people for participation in professional sport in the USA and the UK. Evaluate the effectiveness of each system.			Mark
16	(pro-draft)	Pro-draft <ul style="list-style-type: none"> <li>• outstanding college players signed to pro teams</li> <li>• dev / eg</li> </ul>	Not same in UK <ul style="list-style-type: none"> <li>• apprenticeships or academies linked to top level clubs (if mark not given in 1 above)</li> </ul>	

Question	Expected Answer	Mark	
<b>Section B – Sports Psychology (Option B1)</b>			
<b>3</b>	<p>The 'need to achieve' is often viewed as necessary for good sports performance both for individuals and for members of a team. Using practical examples describe the features of a need to achieve performer.</p> <p><b>4 marks 4 marks for: practical examples to be used throughout – sub max of 2 marks with no examples)</b></p>		
<b>(a)</b>	1	Innate personality characteristics/natural trait/enduring	<b>[4]</b>
	2	Approach behaviour/is motivated to succeed – hockey player keen to do well.	
	3	Seeks challenges/ excitement/ risks – young person wants to go rock climbing.	
	4	Likes competition/is competitive – netball player wants to win the tournament.	
	5	High levels of confidence/self efficacy/mastery orientation – swimmer wants to enter the competition.	
	6	Is persistent on task/doesn't give up (easily)/determined – tennis player fights against a losing position.	
	7	Takes responsibility for actions – footballer accepts penalty is his fault.	
	8	Likes feedback/likes evaluation/likes/seeks an audience – cricket player asks for feedback.	
	9	The more competitive/the more important the event the more the need to achieve is motivated. – a player in a cup final tries harder.	
	10	Not afraid of failure/see failure as route to success – footballer misses a penalty but learns from their mistake/attribution (if explained correctly)	

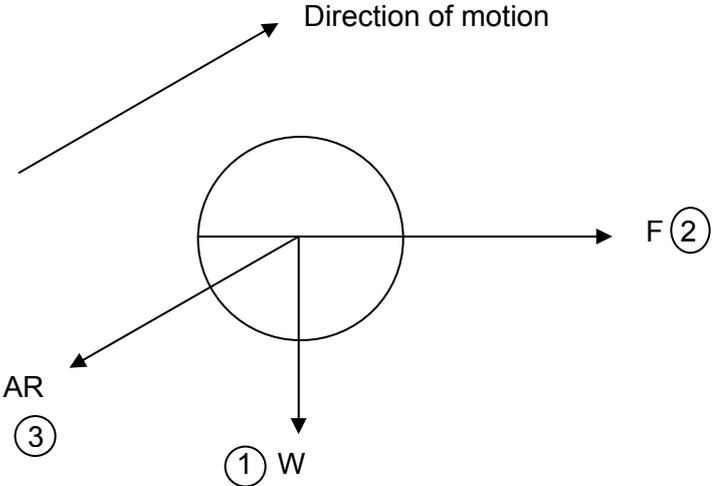
Question	Expected Answer	Mark
(b)	<p><b>Explain the effects of having low self-efficacy on sustaining a balanced, healthy lifestyle. Describe two strategies to raise self-efficacy to enable a young person to adopt a balanced, healthy lifestyle.</b></p> <p><b>5 marks for: (effects) sub max 3 marks</b></p>	<b>[5]</b>
1	(Low confidence) leads to learned helplessness/giving up on participation.	
2	Does not value a healthy lifestyle/associates with personal failure/low self esteem/negative self-image	
3	Can lead to dysfunctional behaviour/lifestyle/drug taking/smoking excessive drinking/fast food diet/obesity/being unhealthy	
4	Leads to affiliation with other non-participants/falling in with the 'wrong crowd'/seeks counter culture.	
5	Can influence other people towards non-participation.	
<b>(strategies) sub max 2 marks (accept practical equivalents). MARK FIRST TWO ONLY</b>		
6	Encourage attribution of any previous failure or learned helplessness to controllable/internal factors/unstable factors/lack of effort/inappropriate goals	
7	Give encouragement/praise/reward/positive reinforcement lifestyle shows aspects of healthy living/verbal persuasion	
8	Educate/inspire/show what physical activity can do to enhance well-being and health.	
9	Show consequences of poor lifestyle.	
10	Encourage joining a club/taking up a new activity that may interest them/make them aware of the varied activities out there.	
11	Give them anxiety management strategies/emotional control/control arousal	
12	Give early success to raise confidence/encourage small achievable goals at first/highlight previous success	
13	See others achieve/vicarious experiences	

Question	Expected Answer	Mark
(c)	<p><b>Figure 1 shows Chelladurai's multi-dimensional model of leadership. Using the model in figure 1 explain how effective leadership can encourage participation.</b></p> <p><b>6 marks</b> <b>6 marks for:</b></p>	<b>[6]</b>
1	<p>(Situational characteristics) Effective leadership will take into account the situation. Or the environmental circumstances may dictate a certain strategy of leadership to encourage participation. Or eg dangerous environment so autocratic style needed.</p>	
2	<p>(Leader characteristics) Effective leadership is related to the personality of the leader Or the personality/experience/ability of the leader will influence whether a person participates or not.</p>	
3	<p>(Member characteristics) Effective leadership is related to the nature/type /motivation of group members. Or they may be friendly and therefore encouraging.</p>	
4	<p>(Required behaviour) the style of leadership that is suitable/appropriate will either motivate or demotivation to participate.</p>	
5	<p>(Actual behaviour) the leader's behaviour can have a direct impact on participation</p>	
6	<p>(Preferred behaviour) what is wanted from group members Or if you lead the way/style that the group members want you to then you may motivate / win hearts and minds and increase participation.</p>	
7	<p>Consequences are good/more participation/more satisfaction/enjoyment if the needs of the group match the leader's behaviour</p>	
8	<p>Consequences are good/more participation/more satisfaction/enjoyment if the situational demands are met by the leader's behaviour.</p>	
9	<p>Leaders should be flexible/can change/can adapt to differing styles (to accommodate the differing needs to improve participation and enjoyment.)</p>	
10	<p>You are more likely to participate if you are satisfied/pleased/see the value with the leader/see leader as a role model</p>	

Question	Expected Answer	Mark
(d)	<p><b>Describe theories related to personality and how they affect sports performance. Evaluate critically personality profiling in sport.</b></p> <p><b>A2 level descriptors</b></p> <p><b>Level 4: a comprehensive answer (18 – 20 marks)</b></p> <ul style="list-style-type: none"> <li>• detailed knowledge &amp; excellent understanding;</li> <li>• detailed analysis/critical evaluation and excellent critical evaluation;</li> <li>• well-argued, independent opinion and judgements which are well supported by relevant practical examples;</li> <li>• very accurate use of technical and specialist vocabulary;</li> <li>• high standard of written communication throughout.</li> </ul> <p><b>Discriminators from L3 are likely to include:</b></p> <ul style="list-style-type: none"> <li>• all three theories well represented;</li> <li>• consistent links to performance;</li> <li>• good detail in critical analysis;</li> <li>• at the top end of this level relevant positive and negative points made in the critical analysis.</li> </ul> <p><b>Level 3: a competent answer (13 – 17 marks)</b></p> <ul style="list-style-type: none"> <li>• good knowledge &amp; clear understanding;</li> <li>• good analysis and critical evaluation;</li> <li>• Independent opinions and judgements will be present but may not always be supported by relevant practical examples;</li> <li>• generally accurate use of technical and specialist vocabulary;</li> <li>• written communication is generally fluent with few errors.</li> </ul> <p><b>Discriminators from L2 are likely to include:</b></p> <ul style="list-style-type: none"> <li>• all three theories represented but lack detail at times;</li> <li>• links to performance;</li> <li>• some detail in critical analysis but mostly if not all negative points made.</li> </ul> <p><b>Level 2: a limited answer (8 – 12 marks)</b></p> <ul style="list-style-type: none"> <li>• limited knowledge &amp; understanding;</li> <li>• some evidence of analysis and critical evaluation;</li> <li>• opinion and judgement given but often unsupported by relevant practical examples;</li> <li>• technical and specialist vocabulary used with limited success;</li> <li>• written communication lacks fluency and contains errors.</li> </ul> <p><b>Discriminators from L1 are likely to include:</b></p> <ul style="list-style-type: none"> <li>• two theories represented but lack detail at times or all three with very little detail;</li> <li>• very few links to performance;</li> <li>• little detail in critical analysis and all negative points made.</li> </ul> <p><b>Level 1: a basic answer (0 – 7marks)</b></p> <ul style="list-style-type: none"> <li>• basic knowledge &amp; little understanding;</li> <li>• little relevant analysis or critical evaluation;</li> <li>• little or no attempt to give opinion or judgement;</li> <li>• little or no attempt to use technical and specialist vocabulary;</li> <li>• errors in written communication will be intrusive.</li> </ul>	[20]

Question	Describe theories related to personality and how they affect sports performance. Evaluate critically personality profiling in sport.	Mark
<p><b>Indicative content:</b></p> <p><b>(Theories)</b></p> <p>1 <b>(trait)</b> Trait perspectives</p> <ul style="list-style-type: none"> <li>• natural/innate behaviours</li> <li>• Type A/Type B</li> <li>• Eysenck/Cattell described</li> </ul> <p>2 This involves characteristics that are stable and enduring/behaviour is generalised</p> <ul style="list-style-type: none"> <li>• Examples of these eg always aggressive</li> <li>• In sport you will display similar behaviours to other situations.</li> </ul> <p>3 Sports performance may be affected positively or negatively by your innate personality characteristic</p> <ul style="list-style-type: none"> <li>• Examples eg extroversion may help with team sports</li> </ul> <p>4 <b>(Social Learning)</b> Social learning theory (Bandura)</p> <ul style="list-style-type: none"> <li>• We observe and copy behaviour.</li> <li>• Copy significant others/role models.</li> <li>• In sport this may be the copying the most successful/high profile/reinforcement</li> </ul> <p>5 Sports performance may be affected by other people</p> <ul style="list-style-type: none"> <li>• Especially if significant</li> <li>• can be positive if others show functional behaviour</li> <li>• can be negative if they show dysfunctional behaviour.</li> </ul> <p>6 <b>(Interactionist)</b> – Interactionist theory (Hollander)</p> <ul style="list-style-type: none"> <li>• characteristics determined by interaction between traits and situation</li> <li>• or/and interaction with the environment.</li> </ul> <p>7 Behaviour changes depending on the demands of the situation/environment.</p> <ul style="list-style-type: none"> <li>• These demands may be perceptions rather than real</li> </ul> <p>8 In sport you may be competitive because the situation demands that you are.</p> <ul style="list-style-type: none"> <li>• Examples eg in a netball match you show competitiveness because the aim is to win.</li> <li>• Sports performance may be affected positively or negatively depending how the performer perceives the requirements of the situation.</li> </ul> <p>9 <b>Other theories of personality used</b> eg Freud</p> <ul style="list-style-type: none"> <li>• Practical examples</li> </ul> <p><b>(Critical evaluation of profiling)</b> <b>(negative)</b></p> <p>10 Profiling results too vague/unreliable</p> <ul style="list-style-type: none"> <li>• do not link cause and effect.</li> </ul> <p>11 Results cannot be generalised (to the behaviours of others)/you act differently in different situations</p> <ul style="list-style-type: none"> <li>• lacks external validity</li> <li>• sample not representative.</li> </ul>		

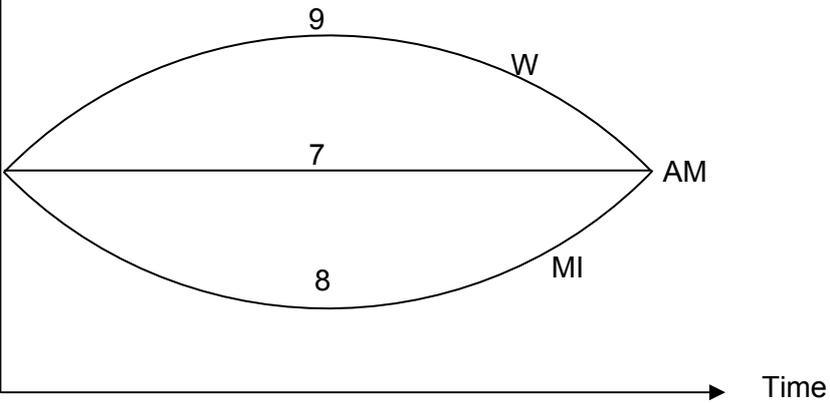
<p>12 Results lack ecological validity</p> <ul style="list-style-type: none"><li>• are not true to real life/do not relate to sports performance</li></ul> <p>13 Profiling too subjective</p> <ul style="list-style-type: none"><li>• results explained differently by different people</li><li>• unreliable interpretations/stereotyping</li></ul> <p>14 Links between personality and sports performance/sport choice/task persistence too tenuous</p> <ul style="list-style-type: none"><li>• sceptical approach</li></ul> <p>15 Too many demand characteristics/lying (on questionnaires)</p> <ul style="list-style-type: none"><li>• behaviour of performer may be altered due to profiling/being observed</li><li>• internally invalid.</li></ul> <p><b>(positive)</b></p> <p>16 There are some links between personality and performance</p> <ul style="list-style-type: none"><li>• credulous approach</li><li>• eg Profiles of mood states (POMS) show links between vigour/optimism and success in sport.</li></ul> <p>17 Knowing about a performer's personality will help to motivate them</p> <ul style="list-style-type: none"><li>• Practical examples</li></ul> <p>18 Knowing about a performer's personality will help to understand them/put them in right sport/position</p> <ul style="list-style-type: none"><li>• Practical examples</li></ul> <p>19 Knowing about a performer's personality will help to control their anxiety/arousal</p> <ul style="list-style-type: none"><li>• Practical examples</li></ul>	
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Question	Expected Answer	Mark
<b>Section B – Biomechanics (Option B2)</b>		
4	<p><b>Sketch a free body diagram showing all the forces acting on the hockey ball as it is being flicked. Using Newton's Laws of Motion, explain the effect of the resultant force acting on the hockey ball.</b></p> <p><b>6 marks for:</b></p>	<b>[6]</b>
(a)	<p>1 W/weight acting downwards from CM.                  2 F/force acting from back edge of ball.                  3 AR/air resistance acting in opposite direction to motion.</p> <div style="text-align: center;">  </div> <p><b>(Points must relate to correct law)</b></p> <p>4 Newton 1 - The ball remains stationary until it is flicked.                  5 Newton 2 - The ball will accelerate proportionately to the size of the force acting upon it/larger the force the faster/further it will go.                  6 Newton 2 - The ball will accelerate in the direction of the force.                  7 Newton 3 - The stick applies a force to the ball, therefore the ball applies an equal and opposite force to the stick.</p>	
(b)	<p><b>Describe the factors that affect the fluid friction acting against a swimmer during 100m backstroke.</b></p> <p><b>5 marks in total from: (accept opposites where appropriate)</b></p> <p>1 (Speed/velocity of swimmer) Faster the swimmer the greater the FF.                  2 (Shape of swimmer) Flatter body position/tear drop shape leads to less FF.                  3 (Shape of swimmer) Reduced frontal cross sectional area leads to less FF.                  4 (Shape of swimmer) Dolphin action leads to less FF.                  5 (Surface of swimmer) Smoother/shaving/special swimwear/hats leads to less FF.                  6 (Type of water) Less dense water leads to less FF.                  7 (Swimming underwater) Swimming underwater leads to less FF.</p>	<b>[5]</b>

Question	Expected Answer	Mark
(c)	<p data-bbox="236 259 1318 360"><b>Compare the shape of the flight path of a shot putt with that of a fast moving badminton shuttle. Explain the reasons for the differences in their respective flight paths.</b></p> <p data-bbox="236 394 363 427"><b>4 marks:</b></p> <ol data-bbox="209 427 1010 629" style="list-style-type: none"><li>1. Shot follows (nearly) parabolic/symmetrical flight path</li><li>2. because air resistance is negligible</li><li>3. because weight is the dominant force/shot has low speed.</li><li>4. Shuttlecock follows non parabolic/asymmetrical flight path</li><li>5. because air resistance is dominant force as</li><li>6. speed of shuttle is large/weight is negligible.</li></ol>	<b>[4]</b>

Question	Expected Answer	Mark
(d)	<p><b>What is meant by the terms Angular Velocity, Moment of Inertia and Angular Momentum and sketch a graph showing their relationship when a gymnast performs a somersault from take off to landing. Compare a gymnast's use of the Analogue of Newton's First Law of Motion to control the performance of the somersault with that of a skier performing a slalom turn.</b></p> <p><b>A2 level descriptors</b></p> <p><b>Level 4: a comprehensive answer (18 – 20 marks)</b></p> <ul style="list-style-type: none"> <li>• detailed knowledge &amp; excellent understanding;</li> <li>• detailed analysis/critical evaluation and excellent critical evaluation;</li> <li>• well-argued, independent opinion and judgements which are well supported by relevant practical examples;</li> <li>• very accurate use of technical and specialist vocabulary;</li> <li>• high standard of written communication throughout.</li> </ul> <p><b>Discriminators from L3 are likely to include:</b></p> <ul style="list-style-type: none"> <li>• good knowledge of the Analogue of Newton's First Law of Motion;</li> <li>• detailed understanding of the application of the Law on Conservation of Angular Momentum to the somersault and ski turn with similarities and differences. To achieve top of this range candidate will be expected to cover start, during and end of skill;</li> <li>• detailed understanding of angular velocity, moment of inertia and angular momentum and an accurate graph;</li> <li>• good use of technical language through out the answer.</li> </ul> <p><b>Level 3: a competent answer (13 – 17 marks)</b></p> <ul style="list-style-type: none"> <li>• good knowledge &amp; clear understanding;</li> <li>• good analysis and critical evaluation;</li> <li>• Independent opinions and judgements will be present but may not always be supported by relevant practical examples;</li> <li>• generally accurate use of technical and specialist vocabulary;</li> <li>• written communication is generally fluent with few errors.</li> </ul>	[20]
	<p><b>Discriminators from L2 are likely to include:</b></p> <ul style="list-style-type: none"> <li>• a reasonably good explanation of the Law of Conservation of Angular Momentum applied to the somersault or ski turn with some attempt at a comparison. To achieve top end of this level candidates should show similarities and differences;</li> <li>• There is evidence of understanding of angular velocity, moment of inertia and angular momentum. The graph shows some correct aspects;</li> <li>• Some use of correct technical language.</li> </ul> <p><b>Level 2: a limited answer (8 – 12 marks)</b></p> <ul style="list-style-type: none"> <li>• limited knowledge &amp; understanding;</li> <li>• some evidence of analysis and critical evaluation;</li> <li>• opinion and judgement given but often unsupported by relevant practical examples;</li> <li>• technical and specialist vocabulary used with limited success;</li> <li>• written communication lacks fluency and contains errors.</li> </ul>	

Question	Expected Answer	Mark
	<p><b>Discriminators from L1 are likely to include:</b></p> <ul style="list-style-type: none"> <li>• an attempt to explain the Law of Conservation of Momentum using from technical language in either the somersault or ski turn;</li> <li>• basis understanding of angular velocity, moment of inertia and angular momentum and how rotation is generated;</li> <li>• there is an attempt to use correct technical language in places.</li> </ul> <p><b>Level 1: a basic answer (0 – 7 marks)</b></p> <ul style="list-style-type: none"> <li>• basic knowledge &amp; little understanding;</li> <li>• little relevant analysis or critical evaluation;</li> <li>• little or no attempt to give opinion or judgement;</li> <li>• little or no attempt to use technical and specialist vocabulary;</li> <li>• errors in written communication will be intrusive.</li> </ul>	
	<p><b>What is meant by the terms Angular Velocity, Moment of Inertia and Angular Momentum and sketch a graph showing their relationship when a gymnast performs a somersault from take off to landing. Compare a gymnast's use of the Analogue of Newton's First Law of Motion to control the performance of the somersault with that of a skier performing a slalom turn.</b></p> <p><b>Indicative content:</b></p> <p><b>(Angular velocity / <math>\omega</math>)</b></p> <ol style="list-style-type: none"> <li>1. Rate of spin/how fast an object is spinning/rotating/turning. <ul style="list-style-type: none"> <li>• Rate of change in angle / angular distance/displacement travelled per unit time / <math>\omega = \theta/t</math>.</li> <li>• Measured in <math>\text{radss}^{-1}</math> or rads/sec</li> </ul> </li> </ol> <p><b>(Moment of Inertia / I /MI)</b></p> <ol style="list-style-type: none"> <li>2. Resistance of an object to rotation/spin/turn. <ul style="list-style-type: none"> <li>• Rotational equivalent of mass/inertia</li> </ul> </li> <li>3. Depends on the distribution of mass / how far mass is from the axis of rotation. <ul style="list-style-type: none"> <li>• Further away mass is from axis of rotation the greater MI / or opposite.</li> <li>• <math>MI = \Sigma mr^2</math>.</li> <li>• Measured in <math>\text{kgm}^2</math>.</li> </ul> </li> <li>4. Greater MI the greater the force required to rotate / stop rotating</li> <li>5. Depends upon mass of object <ul style="list-style-type: none"> <li>• Greater mass equals greater MI.</li> </ul> </li> </ol> <p><b>(Angular Momentum / AM)</b></p> <ol style="list-style-type: none"> <li>6. Measure of angular motion of an object. <ul style="list-style-type: none"> <li>• <math>AM = MI \times AV</math> / <math>AM = I\omega</math>.</li> <li>• Measured in <math>\text{kgm}^2\text{radss}^{-1}</math>.</li> </ul> </li> </ol>	

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<p>7. Angular Momentum is flat line.                  8. MI is 'u' shaped.                  9. <math>\omega</math> is 'n' shaped.</p>	<p>10. (Analogue of Newton 1) An object will continue to rotate with constant angular momentum unless acted upon by an external torque/rotational/moment of force</p> <ul style="list-style-type: none"> <li>If angular momentum is constant then a decrease in Moment of Inertia leads to an increase in angular velocity/vice versa</li> </ul>																																																																
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<b>Section B – Exercise and Sport Physiology</b>		
(a)	<p><b>Define the term VO<sub>2</sub> max and identify three factors that affect a performer's VO<sub>2</sub> max</b>  <b>4 marks in total (AO1)</b></p> <p><b>submax 1 mark; (define VO2 max)</b>  1 is the <b>maximal</b> volume of <b>oxygen</b> that can be <b>utilised</b> in <b>one minute</b> (during maximal exercise) (measured in ml/kg/min)</p> <p><b>Submax 3 marks; (factors affecting VO2 max) Mark first 3 only</b></p> <ul style="list-style-type: none"> <li>2 respiratory factors</li> <li>3 cardiac factors</li> <li>4 vascular factors</li> <li>5 muscular factors/fibre types</li> <li>6 training/activity levels/altitude</li> <li>7 age</li> <li>8 gender</li> <li>9 hereditary/physiological make-up</li> </ul>	<b>[4]</b>
(b)	<p><b>Interval training is a popular method of training. Describe an interval training session designed to improve maximal strength. Explain the benefits that interval training has over other methods of training.</b>  <b>5 marks in total</b></p> <p><b>Submax 3 marks (interval training)</b></p> <ul style="list-style-type: none"> <li>1. (Type) Weight training.</li> <li>2. (Work period 1) 1 – 6 reps.</li> <li>3. (Work period 2) 3 – 5 sets.</li> <li>4. (Intensity) 1 – 6RM/70%+ RM</li> <li>5. (Work-relief ratio) 1 : 3 plus/2-5 minutes</li> </ul> <p><b>Submax 2 marks (benefits)</b></p> <ul style="list-style-type: none"> <li>6. be used to develop anaerobic <b>and/or</b> aerobic systems.</li> <li>7. adds variety to a training programme / flexible training method/prevent boredom</li> <li>8. allows quality / intensity of work to be maintained / more work completed.</li> <li>9. onset of fatigue is delayed / allows time for recovery / removal of lactic acid / restoration of PC stores.</li> <li>10. will allow quicker adaptations.</li> <li>11. allows games players to incorporate sport specific drills.</li> </ul>	<b>[5]</b>

Question	Expected Answer	Mark
(c)	<p><b>What is meant by the term obesity and to what extent does being obese impact on the health of an individual?</b>  <b>6 marks in total</b></p> <p><b><i>Sub max 2 marks (def obesity)</i></b></p> <p>1 a condition where there is excess body weight due to an abnormal accumulation of fat/eating more calories than are used over a period of time</p> <p>2 defined as a body mass index (BMI) of 30 or more</p> <p><b><i>Sub max 5 marks (how obesity affects health)</i></b></p> <p>3 excess weight makes it more difficult to exercise (as the body has to work harder to carry additional weight)</p> <p>4 contributes to CHD/heart attacks/problems/angina/stroke</p> <p>5 build up of low density lipoproteins (LDL)/cholesterol</p> <p>6 this can lead to development of fatty plaques in arteries / atherosclerosis/arteriosclorosis</p> <p>7 raises risk of cancer</p> <p>8 more likely to develop (type 2) diabetes / overweight people develop insulin resistance / high blood glucose</p> <p>9 develop fatty liver disease/fat accumulates round the liver leading to inflammation</p> <p>10 increases risk of hypertension/high blood pressure/arteries become partially blocked by fatty deposits/narrows lumen of artery/greater peripheral resistance</p> <p>11 develop deep vein thrombosis</p> <p>12 develop respiratory problems, breathlessness/sleep apnoea</p> <p>13 back pain/immobility/lordosis/posture</p> <p>14 joint degeneration/osteoarthritis</p> <p>15 some athletes are considered obese because of high BMI;</p> <p>16 leads to low self-esteem/psychological problems/bullying</p>	[6]

Question	Expected Answer	Mark
(d)	<p><b>Examine the information in Fig 1.1 and explain the changes in the contribution of each of the energy systems for the three different events. Explain why the percentage contribution of each energy system would probably change for a recreational runner performing the same distances?</b></p> <p><b>20 marks in total</b></p> <p><b>Level 4: a comprehensive answer (18 – 20 marks)</b></p> <ul style="list-style-type: none"> <li>• detailed knowledge &amp; excellent understanding;</li> <li>• detailed analysis/critical evaluation and excellent critical evaluation;</li> <li>• well-argued, independent opinion and judgements which are well supported by relevant practical examples;</li> <li>• very accurate use of technical and specialist vocabulary;</li> <li>• high standard of written communication throughout.</li> </ul> <p><b>Discriminators from L3 are likely to include:</b></p> <ul style="list-style-type: none"> <li>• effective application of the concept of the energy continuum to different events with regard to individual differences</li> <li>• a sound knowledge of energy system thresholds in relation to duration and intensity</li> <li>• thorough knowledge of physiological adaptations and their impact on energy system use</li> <li>• thorough balanced discussion of all three energy systems.</li> </ul> <p><b>Level 3: a competent answer (13 – 17 marks)</b></p> <ul style="list-style-type: none"> <li>• good knowledge &amp; clear understanding;</li> <li>• good analysis and critical evaluation;</li> <li>• Independent opinions and judgements will be present but may not always be supported by relevant practical examples;</li> <li>• generally accurate use of technical and specialist vocabulary;</li> <li>• written communication is generally fluent with few errors.</li> </ul> <p><b>Discriminators from L2 are likely to include:</b></p> <ul style="list-style-type: none"> <li>• good application of the concept of the energy continuum to different events;</li> <li>• sound examination of the table and explanation of trends;</li> <li>• awareness of a range of adaptations and their impact on energy system use.</li> </ul> <p><b>Level 2: a limited answer (8 – 12 marks)</b></p> <ul style="list-style-type: none"> <li>• limited knowledge &amp; understanding;</li> <li>• some evidence of analysis and critical evaluation;</li> <li>• opinion and judgement given but often unsupported by relevant practical examples;</li> <li>• technical and specialist vocabulary used with limited success;</li> <li>• written communication lacks fluency and contains errors.</li> </ul> <p><b>Discriminators from L1 are likely to include:</b></p> <ul style="list-style-type: none"> <li>• an awareness of the concept of the energy continuum in relation to different events</li> <li>• a basic examination of the table and description trends</li> <li>• provide a limited number of adaptations and their impact on at least one energy system.</li> </ul>	[20]

Question	Expected Answer	Mark
	<p><b>Level 1: a basic answer (0 – 7 marks)</b></p> <ul style="list-style-type: none"> <li>• basic knowledge &amp; little understanding;</li> <li>• little relevant analysis or critical evaluation;</li> <li>• little or no attempt to give opinion or judgement;</li> <li>• little or no attempt to use technical and specialist vocabulary;</li> <li>• errors in written communication will be intrusive.</li> </ul>	
	<p><b>Examine the information in Fig 1.1 and explain the changes in the contribution of each of the energy systems for the three different events. Explain why the percentage contribution of each energy system would probably change for a recreational runner performing the same distances?</b></p> <p><b>Indicative content:</b></p> <p><b>Changes in energy systems</b></p> <ol style="list-style-type: none"> <li>1. Energy continuum. <ul style="list-style-type: none"> <li>• Contribution of each energy system depends on intensity and duration of exercise.</li> </ul> </li> <li>2. As distance/duration increases aerobic system contributes more. <ul style="list-style-type: none"> <li>• Because intensity decreases.</li> </ul> </li> <li>3. As distance/duration decreases anaerobic systems contribute more. <ul style="list-style-type: none"> <li>• Because intensity increases.</li> </ul> </li> <li>4. 100m relies heavily on PC/LA/anaerobic systems. <ul style="list-style-type: none"> <li>• Intensity is very high/energy required quickly</li> <li>• No oxygen is required.</li> <li>• Few reactions/takes place in sarcoplasm.</li> </ul> </li> <li>5. 800m relies less on anaerobic/PC/LA systems / more on aerobic system <ul style="list-style-type: none"> <li>• Ltd PC stores / PC threshold is up to 10 secs.</li> <li>• Over-reliance on LA would cause fatigue / intensity to be lowered.</li> <li>• LA system yield only 2ATP so inefficient.</li> </ul> </li> <li>6. 5000m relies mainly on aerobic system. <ul style="list-style-type: none"> <li>• More energy required over a prolonged period of time.</li> <li>• Aerobic breakdown of CHO / fats provide a lot more energy/34-36 ATP</li> <li>• Anaerobic systems only come into play at start/end of race.</li> </ul> </li> </ol> <p><b>Reasons for changes for recreational runner;</b></p> <ol style="list-style-type: none"> <li>7. Recreation runner not as fit. <ul style="list-style-type: none"> <li>• Not performed same amount of training.</li> <li>• Not experienced same physiological adaptations.</li> <li>• Will have lower VO<sub>2</sub>max / aerobic capacity / endurance.</li> </ul> </li> <li>8. Recreation runner cannot work at same intensity for as long/lower alactacid/PC threshold <ul style="list-style-type: none"> <li>• Smaller PC stores.</li> </ul> </li> <li>9. Recreation runner's OBLA / anaerobic threshold will occur at a lower intensity/ be lower/LA system used earlier <ul style="list-style-type: none"> <li>• Less oxygen supply to / uptake by muscles</li> <li>• Lower tolerance to LA accumulation.</li> <li>• Slower removal of LA.</li> </ul> </li> <li>10. Recreation runner will have less efficient muscular system/less efficient aerobic energy production <ul style="list-style-type: none"> <li>• Less myoglobin</li> <li>• Less mitochondria</li> <li>• Less aerobic enzymes</li> </ul> </li> </ol>	

Question	Expected Answer	Mark
11. Recreational runner will have less efficient cardiac system/smaller/weaker heart 12. Recreation runner will have smaller O <sub>2</sub> carrying capacity. 13. Recreation runner will have less efficient vascular system. 14. Recreation runner will have less efficient respiratory system / lungs/reduced gaseous exchange in lungs/external respiration 15. Recreation runner will have less muscular endurance. 16. Recreation runner will have less muscle mass.	<ul style="list-style-type: none"> <li>• Lower SV / CO<sub>max</sub>/Q<sub>max</sub></li> <li>• Higher HR<sub>rest</sub>.</li> <li>• Less RBC / Hb.</li> <li>• Smaller blood volume.</li> <li>• Weaker / less elastic arterial walls.</li> <li>• Less efficient vascular shunt mechanism.</li> <li>• Less efficient buffering system – decreased tolerance to LA</li> <li>• Less capillarisation – reduced gaseous exchange at muscles/internal respiration</li> <li>• Smaller lung volumes.</li> <li>• Weaker respiratory muscles.</li> <li>• Lower density of capillaries at alveoli.</li> <li>• Lower glycogen stores.</li> <li>• Lower triglyceride stores.</li> <li>• Weaker force of contraction.</li> <li>• Slower running speed.</li> </ul>	

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