

**CAMBRIDGE INTERNATIONAL EXAMINATIONS**

Cambridge International Advanced Subsidiary and Advanced Level

**MARK SCHEME for the May/June 2015 series**

**0413 PHYSICAL EDUCATION**

**0413/13**

Paper 1 (Paper 1), maximum raw mark 80

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

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Mark schemes will use these abbreviations:

<b>;</b>	separates marking points
<b>/</b>	alternatives
<b>()</b>	contents of brackets are not required but should be implied
<b>R</b>	reject
<b>A</b>	accept (for answers correctly cued by the question, or guidance for examiners)
<b>Ig</b>	ignore (for incorrect but irrelevant responses)
<b>AW</b>	alternative wording (where responses vary more than usual)
<b>AVP</b>	alternative valid point (where a greater than usual variety of responses is expected)
<b>ORA</b>	or reverse argument
<b><u>underline</u></b>	actual word underlined must be used by candidate (grammatical variants excepted)
<b>max</b>	indicates the maximum number of marks that can be given
<b>+</b>	statements on both sides of the + are needed for that mark

<b>Question</b>	<b>Expected answers</b>	<b>Additional guidance</b>	<b>Marks</b>
<b>1</b>	physical maturity / agility / strength / confidence ;  motivation / level of interest / commitment to train ;  access and quality of teaching or coaching ;  opportunities to train and play ;  access to facilities / being part of a club / school influences ;  prior learning of a similar skill / limited experience ;		[1]
<b>2</b>	reduces the chance of +  heart disease ;  diabetes ;  (bowel) cancer ;  poor digestive health / provides bulk to food ;  lowers cholesterol ;		[1]

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<b>3</b>	<p>membership fees ;</p> <p>payment for use of facilities / match fees ;</p> <p>grants ;</p> <p>sponsorship from local companies ;</p> <p>examples of fundraising activities, e.g. raffles, BBQs, etc. ;</p> <p>donations ;</p>		[1]
<b>4</b>	<p>ribs protect the heart and lungs ;</p> <p>cranium protects the brain ;</p> <p>pelvis protects the lower abdomen and reproductive organs ;</p> <p>spine protects spinal cord and heart and lungs ;</p>		[1]
<b>5</b>	<p>age ;</p> <p>interests / hobbies ;</p> <p>social circumstances / finances / family interests / peer pressure ;</p> <p>facilities available ;</p> <p>where people live / transport to facilities ;</p> <p>time available ;</p> <p>fashions / media coverage ;</p> <p>level of fitness / physique ;</p>		[1]
<b>6</b>	<p>reduces internal bleeding / slows bleeding ;</p> <p>reduces swelling ;</p> <p>provides support ;</p>		[1]

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Question	Expected answers	Additional guidance	Marks
7	<p>suitable activity ;</p> <p>benefit: provide fast muscle contractions ;</p> <p>provide powerful muscle contractions ;</p> <p>enables performer to move limbs quickly or powerfully / short bursts of energy / explosive power ;</p>	<p><b>A</b> any activity that requires short bursts of speed or power, e.g. sprinting, weight lifting, throwing the javelin or discus</p> <p>examples can be given credit, e.g. powerful start in a 100m race</p>	[max 2]
8	<p>unable to focus during the game ;</p> <p>finds it difficult to cope with losing ;</p> <p>finds it difficult to accept the decisions of the referee / unable to control emotions ;</p> <p>shows anger / aggression ;</p> <p>finds it difficult to accept praise when they play well ;</p> <p>lacks determination, positivity or motivation ;</p> <p>does not interact well with others in team ;</p> <p>lacks confidence when under pressure / shows anxiety / looks depressed / looks tired / looks nervous ;</p>		[max 2]

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Question	Expected answers	Additional guidance	Marks
9	<p>distract the performer ;</p> <p>creates high levels of anxiety which results in performance reduction / less confidence ;</p> <p>high levels of a performer's mental energy lost due to the need to avoid the distractions ;</p> <p>motivates a performer to play better or work harder ;</p> <p>gives a player confidence / undermines an opponent / encourages a performer to play better ;</p> <p>run a campaign that could prevent a player from playing / run campaigns for the selection of a player in national teams ;</p> <p>encourage spectators to react negatively towards a player – puts a player off playing / distracts a player ;</p> <p>pressurises a performer to take drugs to improve performances ;</p> <p>can be intimidating to play against a player who has such a high profile ;</p> <p>highlights weaknesses in a player's performance which can make it easier for an opponent ;</p>		[max 3]

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Question	Expected answers	Additional guidance	Marks
10	<p>teacher able to coach / teaches techniques correctly ;</p> <p>equipment is checked and in good condition ;</p> <p>landing areas stable and able to reduce impact of landing ;</p> <p>carrying and lifting technique taught to pupils ;</p> <p>gym planned to avoid movement across other activities, e.g. run up for a vault not obstructed ;</p> <p>students aware of how to support other students ;</p> <p>activities or height of equipment appropriate for the age of the class ;</p> <p>if the activity takes place outside, ensure area is clear and safe ;</p> <p>ensure class have appropriate clothing and footwear / are not wearing jewellery ;</p> <p>ensure all students are aware of rules ;</p> <p>all students should have the correct level of technique ;</p>	no mark for activity	[max 3]

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11	<p>allows all athletes to compete fairly / not winning by cheating ;</p> <p>prevent competition from being devalued ;</p> <p>protects the health of the athlete ;</p> <p>protects vulnerable athletes from being exploited ;</p> <p>prevents unwanted role models influencing young athletes / other performers may follow their example ;</p> <p>protect the rights of athletes to compete fairly whilst drug free ;</p> <p>taking certain drugs is illegal ;</p>		[max 4]
			<b>[Total 20]</b>
<b>B1 (a)</b>	<p>height ;</p> <p>weight ;</p> <p>body composition / amount of fat or muscle ;</p>		[max 2]
<b>(b)</b>	<p>lack of focus or concentration / over excited / anxious ;</p> <p>inability to make good decisions ;</p> <p>decisions made too quickly ;</p> <p>the number of mistakes increases / reduction in performance ;</p> <p>after an initial burst of energy a lack of energy ;</p> <p>overaggressive responses verbally and physically / unable to control emotions / more likely to get injured ;</p>		[max 3]

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Question	Expected answers	Additional guidance	Marks
(c)	<p><i>increased tidal volume:</i> allows for more oxygen to reach the muscles, more carbon dioxide to be expelled ;</p> <p><i>lower resting heart rate:</i> greater efficiency in transporting oxygenated blood to the muscles / allows a greater increase in heart rate ;</p> <p><i>increased oxygen debt tolerance:</i> reduces the onset of lactic acid allowing an athlete to sustain intensive activities for longer ;</p>		[3]
(d)	<p>take part for fun and enjoyment ;</p> <p>failure is accepted easily / not driven by the prize ;</p> <p>does not need incentives to take part in sport / does not need anything else to play sport ;</p> <p>provides satisfaction / increases confidence ;</p> <p>can be part of a personal goal ;</p> <p>the sport continues if prizes, etc. stop ;</p> <p>usually longer lasting ;</p> <p>performer has greater control / does not require other people / important when training on their own ;</p> <p>extrinsic motivation can place additional pressure ;</p> <p>has a greater interest in that sport ;</p>		[max 3]



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Question	Expected answers	Additional guidance	Marks
(e)	<p>rotation ;</p> <p>suitable example ;</p> <p>movement in two planes (forwards and backwards) / allows flexion and extension ;</p> <p>suitable example ;</p>	<p>e.g. helps when heading a ball in football / helps keep balance, e.g. in gymnastics</p> <p>e.g. kicking a ball in football / bicep curl</p>	[4]
(f)	<p>involuntary / smooth ;</p> <p><i>benefit:</i> contraction of smooth muscle in arteries redistributes blood to leg muscles, etc. / AVP ;</p> <p>voluntary / skeletal / striped ;</p> <p><i>benefit:</i> developing strong muscles allows a performer to develop greater strength and more powerful movements / AVP ;</p>		[4]
(g) (i)	<p>health related fitness is general and applies to everyone at some level / fitness needed for everyday activities ;</p> <p>skill related fitness is specific to a particular sport / activity ;</p>		[2]

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Question	Expected answers	Additional guidance	Marks
(ii)	<p><i>health related:</i> cardio-vascular endurance ;</p> <p>body composition ;</p> <p>flexibility ;</p> <p>muscular endurance ;</p> <p>speed ;</p> <p>stamina ;</p> <p>strength ;</p> <p><i>skill related:</i> agility ;</p> <p>balance ;</p> <p>co-ordination ;</p> <p>speed of reaction, timing ;</p>	<p><i>example:</i> rugby <i>strength</i> – a player having the ability to push in the scrum <i>speed</i> – the ability to run past a defender <i>co-ordination</i> - being able to run and kick a ball from the hands <i>agility</i> – being able to side-step a defender</p>	[max 4]
			<b>[Total 25]</b>
<b>B2 (a)</b>	<p>physical benefits / able to cope with daily activities / less likely to be ill or injured / maintain good body weight / increase life expectancy ;</p> <p>mental benefits / cope with stress / control emotions / greater self-confidence / feel good about yourself ;</p> <p>social benefits / friends and support / have value within a community ;</p>		[max 2]

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Question	Expected answers	Additional guidance	Marks
(b)	carbohydrates + replace lost energy ; protein + repair muscle tissue ; water + ensure hydration / helps the body to cool down ; B vitamins + reduce tiredness and fatigue ;		[max 2]
(c)	hypothalamus responds to the internal changes in body temperature ; hairs on the body are raised to trap air / goose bumps appear on the skin ; body starts to shiver ; increase in respiration ; vasoconstriction takes blood away from the surface of the skin to maintain the core temperature ; stop sweating ;		[max 3]

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<b>Question</b>	<b>Expected answers</b>	<b>Additional guidance</b>	<b>Marks</b>
<b>(d)</b>	<p>extra warm clothes in case temperature drops ;</p> <p>maintain body temperature / prevent hypothermia ;</p> <p>additional food and water ;</p> <p>avoid dehydration / have a source of energy ;</p> <p>first aid kit ;</p> <p>treat minor injuries ;</p> <p>bivvy bag ;</p> <p>provide shelter as the weather can change quickly on the mountain ;</p> <p>whistle / torch / mobile phone ;</p> <p>enable contact if an emergency were to happen ;</p>		[max 4]

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Question	Expected answers	Additional guidance	Marks
(e)	<p>specificity + coach must decide what they want to improve / choose the most suitable exercises / activities must be specific to the muscles used ;</p> <p>overload + coach must make the performer work harder / there must be an increase in the frequency of training / increase the time spent training ;</p> <p>progression + ensure that progression is made gradually to allow the body to adapt / build up exercises gradually to prevent training or stress -related injury by training too hard too soon ;</p> <p>reversibility + ensure that the performer does not stop as fitness will be lost / ensure the performer is motivated and wants to train / keep training interesting / use of targets to motivate the performer to make progress ;</p>		[4]
(f)	<p>adrenaline is released which increases the heart rate ;</p> <p>heart rate increases at the onset of exercise increasing the flow of blood to muscles ;</p> <p>stroke volume increases providing a greater volume of oxygenated blood to the muscles ;</p> <p>cardiac output increases increasing the volume of oxygenated blood being pumped from the left ventricle every minute ;</p> <p>blood pressure increases ;</p> <p>arteries and arterioles widen to allow the increase in blood flow ;</p> <p>blood shunted to the working muscles as they have a greater need ;</p> <p>blood vessels under the skin widen to allow the blood to cool ;</p>		[max 5]
			[Total 20]

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Question	Expected answers	Additional guidance	Marks
<b>B3 (a)</b>	<p>costs are usually kept low ;</p> <p>no joining or club fees have to be paid ;</p> <p>offer a range of sporting activities / not usually specific to one sport ;</p> <p>people can pay and play ;</p> <p>usually located in populated areas so access is easy ;</p> <p>reflect the local need ;</p>		[max 2]
<b>(b)</b>	<p>natural ability ;</p> <p>appropriate physique / build / body type / level of fitness ;</p> <p>access to top quality coaching</p> <p>access to high quality facilities and equipment ;</p> <p>financial support / sponsorship / scholarship / trust funds ;</p> <p>input from sports science / medical support ;</p> <p>opportunities to perform in top competition / train with other elite performers ;</p> <p>mentally strong / determined / positive approach / motivated / strong self-belief ;</p>		[max 3]

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Question	Expected answers	Additional guidance	Marks
(c)	<p>greater public awareness of disability sports ;</p> <p>increase in the amount of disability sports shown on television ;</p> <p>able body sports and disability sports taking place alongside each other ;</p> <p>disability sportspeople present sports on the media ;</p> <p>more media attention / role models ;</p> <p>improved access to facilities / legislation requires new facilities to provide good access to buildings in planning ;</p> <p>more sports adapted / sports introduced for performers with disabilities ;</p> <p>increase in the number of performers with disabilities at grass roots level due to campaigns ;</p> <p>disabled young people more likely to attend mainstream school PE or access PE lessons ;</p> <p>governing bodies developing disability coaching structures / more coaches available ;</p> <p>greater funding for disability sports / companies providing sponsorship ;</p> <p>government legislation to prevent discrimination ;</p>		[max 5]
(d)	<p><i>television:</i></p> <p>showing sport – live / replays / variety of sports channels / different camera angles / increase in the number of minority sports on the media;</p> <p>analysing performances ;</p> <p>use of slow motion replays to provide more detail ;</p>	no marks for naming media	[max 5]

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Question	Expected answers	Additional guidance	Marks
	<p>use of ex-professionals to give detailed commentary ;</p> <p>documentary programmes / quiz shows / chat shows ;</p> <p><i>newspaper:</i> detailed data on performance ;</p> <p>in-depth articles and interviews ;</p> <p>specialist sport sections ;</p> <p>supplements on specific events ;</p> <p>ex-players writing articles about the sport ;</p> <p><i>books:</i> biographies and autobiographies give a deeper understanding of how individuals have developed in their sport ;</p> <p>coaching manuals ;</p> <p>rule books produced by governing bodies ;</p> <p><i>video / DVD:</i> editing allows examples to be brought together to highlight points made ;</p> <p><i>radio:</i> skilled commentary that paints the picture of events ;</p> <p>greater detail in the commentary ;</p> <p>use of players / coaches to give expert commentary ;</p> <p>talk shows / issues beyond a game explored ;</p> <p>specific sports channels ;</p> <p><i>internet:</i> easy access to information ;</p> <p>live information, can get questions answered / interactive discussions ;</p>		



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<b>Question</b>	<b>Expected answers</b>	<b>Additional guidance</b>	<b>Marks</b>
	information can be gained from around the world ;  easy to research a new / different sport ;  up to date scores / results from around the world ;  video clips / tutorial videos ;		
			<b>[Total 15]</b>