

CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

MARK SCHEME for the October/November 2014 series**0413 PHYSICAL EDUCATION****0413/12**

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.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge will not enter into discussions about these mark schemes.

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Section A

- 1 • to protect teeth / gums / mouth from opponent's stick or hockey ball ; [1]
- 2 • promotes the sport / increase interest / increase awareness ;
• more people can see the sport played ;
• creates sports stars which can have a positive effect on youngsters / create greater levels of participation ;
• can attract sponsorship, improving facilities / attract financial interest ; [1]
- 3 • a tendon (or sinew) is a tough band of fibrous connective tissue that usually connects muscle to bone and is capable of withstanding tension ;
• tendons and muscles work together to produce movement ; [1]
- 4 • in order to overpower an opponent in contact sports such as rugby, or strength to push in a scrum ;
• to succeed at weightlifting events ;
• to produce more power in a shot, for example tennis serve or shot in football ; [1]
- 5 • co-ordinates meetings and other participant contributions at meetings / represent the club at meetings ; [1]
- 6 **cause:**
• as a result of falling / sliding on a rough surface / impact with a sharp object ;
• impact with opponent / equipment ;
- treatment:**
• wound to be cleaned and dressed ;
• more serious cuts need to stem blood flow / apply pressure to reduce blood flow ;
• more serious cuts need to be stitched ;
• more serious cuts need medical assistance ; [2]
- 7 • to win a race ;
• speed on a run up in long jump / high jump ;
• to beat an opponent in a chase situation / to beat an opponent when speed of movement is required ;
• to reach a base (rounders / softball / cricket) ;
• to move quickly to return an object (shuttlecock / tennis ball) ;
• to move quickly to catch an object (rugby ball / cricket ball) ; [2]

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- 8
- strength varies between age groups (peaks in 20s and 30s) which may influence activity undertaken / physical changes occur as people get older / speed and reaction time get slower with age ;
 - older people may choose more sedentary activities ;
 - older people become less flexible / prone to injury / disease which may influence type of activity undertaken ;
 - younger people are naturally more flexible so activities such as gymnastics / diving / trampoline are appealing ;
 - speed and reaction time get slower with age so older people may choose more sedentary activities ;
 - age restriction in some sports ;
 - time available for leisure will change / work time will reduce time available ;
 - interests change as people get older ;
- [2]
- 9
- tend to be more generally active, the higher the activity level, the higher the energy input needed ;
 - energy / calorie intake needed to promote growth ;
 - young people more likely to take part in sporting activity ;
 - older people less active so need less energy to maintain body weight ;
 - younger people have a faster metabolic rate ;
- [2]
- 10
- stretching exercises specific to the activity ;
 - light aerobic activity to raise heart rate / short anaerobic activities raise heart rate ;
 - light aerobic activity to increase body temperature ;
 - skills practice to ensure muscles essential to the activity are used ;
- [2]
- 11
- responses MUST indicate that the feedback comes from within the performer and not be a general description of feedback
 - personal knowledge of performance, knowing what action / performance “felt” like so adjustments can be made if necessary ;
 - knowing result of performance / action to determine any adjustment to future actions ;
 - can be an intrinsically motivating factor ;
- [2]
- 12
- addictive ;
 - reduces lung capacity / shortage of breath / poor gas exchange reduces oxygen available to the performer ;
 - reduces stamina ;
 - increased risk of heart disease ;
 - increased risk of lung cancer ;
- [3]

[Total: 20]

Section B
Unit 1 Factors affecting performance

- (a) • the skeleton provides a rigid frame for the body ;
 • the shape of the body is due to the skeleton ;
 • keep us upright ;
 • good posture and position improves performance and avoids medical problems ;
 • the skeleton supports soft tissues and muscle ;
 • the skeleton provides support, without which we would collapse ; [2]

- (b) • references to use of delicate movements ;
 • flick of wrist when spin bowling in cricket ; [2]

- (c) **factor:**
 • motivation ;
 • anxiety ;
 • arousal ;
 • conditions ;
 • facilities ;
 • environment ;
 • teaching / coaching / practice ;
 • body type ; [2]

- (d) • decrease heart rate ;
 • risk of irregular heartbeat / heart disease ;
 • tiredness ;
 • feeling cold and dizzy ;
 • lowering blood pressure ;
 • stomach / intestinal problems ;
 • breathing problems ; [3]

(e)

body type			
	endomorph	mesomorph	ectomorph
description	fat body wide hips additional weight	muscular broad shoulders narrow hips	thin body narrow features slim hips
advantage	activities where low COG/COM are an advantage, sumo wrestling	activities where strength and power are needed	tall / light / good endurance suited for high jump, long distance running

[4]

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- (f)
- heart rate increases ;
 - blood is pumped quicker ;
 - increase in oxygen in the blood ;
 - increase in oxygen taken to the muscles ;
 - increase in the removal of carbon dioxide ;
 - increase in blood pressure ;
 - stroke volume increases ;
 - cardiac output increases ;
 - blood is pumped quicker ;
 - body temperature increases / blood temperature increases ;
 - blood vessels dilate to reduce blood pressure ;
 - vasodilation occurs to reduce temperature ;
 - blood is diverted to working muscles from areas such as the stomach ;
- [6]

- (g)
- **type:** intrinsic motivation ;
 - **description:** comes from within yourself ;
 - **example:** beating previous PBs / scores at golf / achieving a goal / personal will to win / drive to succeed / determination to improve standards ;

 - **type:** extrinsic motivation ;
 - **description:** comes from external sources ;
 - **example:** coaches / families / crowd / cups / medals / money / fame ;
- [6]

[Total: 25]

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Section B
Unit 2 Health, safety and training

- (a) • a condition where the tendons at a joint become inflamed and sore ;
• caused by overuse, for example “tennis elbow” ;
• allow enough rest between exercise or performance sessions ; [2]
- (b) • feel good – as you take part in physical activity the body releases serotonin making the body feel happy ;
• stress relief – physical activity can help relieve stress and prevent stress related illnesses ;
• self-esteem – taking part in physical activity can improve your self-image, self-esteem and confidence and generally make you feel better about yourself / feeling positive ;
• competition / physical challenge – physical activity can challenge you to do the best you can, beat a previous score or performance ;
• enjoyment – activity may prove to be exciting or relaxing ; [2]
- (c) (i) • increase in body weight / obesity ;
• increase in body fat ; [1]
- (ii) • hydrates the body ;
• prevents dehydration ;
• replaces water lost through sweating ;
• cools the body / prevents the performer from overheating – heat stroke, etc. ;
• assists energy production / helps a performer to continue playing ;
• component of blood / assists in blood circulation ;
• helps remove waste products from the body ;
• essential for chemical reactions ; [2]
- (d) • anaerobic respiration occurs without O₂ ;
• if you exercise in short bursts the heart cannot supply muscles with O₂ at the rate they require ;
• glucose → energy + lactic acid ;
• glucose is used a short term energy source ;
• lactic acid produced in this process builds up ;
• lactic acid is a mild poison making muscles feel tired ;
• muscles are less efficient and eventually stop working ;
• O₂ is needed to get rid of lactic acid ;
• the O₂ needed is referred to as oxygen debt ;
• used for short periods of intense exercise (examples can be used to illustrate the point) ; [3]

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- (e) • suitable condition of mats and floors / floors not slippery, etc. ;
• equipment correct for the activity and in good condition ;
• presence of qualified staff / spotters as required / medical staff ;
• sufficient headroom / floor space / ensure enough space around equipment / spectators kept away from areas for performers / equipment not being used put away from performing areas;
• observe the no jewellery rule ;
• wearing correct clothing, hand guards, chalk ;
• use of assistance with equipment (setting up a trampoline) ;
• correct method of lifting / transporting equipment ;
• do not perform while injured ; [4]
- (f) (i) • easy to measure progress / easy to overload ;
• gives opportunity for recovery – important in the early stages of training ;
• requires little or no equipment / easy to do ;
• improves both aerobic and anaerobic fitness ;
• increases metabolic rate ;
• can decrease body fat percentage ;
• is suited to a variety of sports, team / running / swimming / not boring ; [4]
- (ii) • increase the duration of work ;
• increase intensity of work ;
• increase number of work periods ;
• reduce the number or time of rest or recovery periods ; [2]

[Total: 20]

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Section B

Unit 3 Reasons and opportunities for participation in physical activity

- (a)
- advertise the opportunities available ;
 - reduce costs / provide deals for specific groups ;
 - coaching courses – provided for children and beginners. More advanced level courses may be organised and provided for adult or club members / bring in high quality coaches ;
 - identify needs of specific groups, e.g. summer activities for children / disability groups / women only groups;
 - fitness training courses – activities such as circuit training can be provided for team players ;
 - taster courses – introduce activities which could be of interest to casual users ;
 - increase the variety of activities on offer ;
 - leagues – organise regular matches, provide organisation, referees, etc. ; [2]
- (b)
- if older people have not exercised for a period of time it is difficult to get their bodies working again / less fit / less flexible / less strength ;
 - older people may not have had the opportunity to learn and develop skills when they were young ;
 - older people are more prone to illness / take longer to recover ;
 - older people tend to take less risks ;
 - older people living on a pension may have a limited amount of money for spending on leisure;
 - finances may also limit transport, e.g. not able to afford running a car and older people may have difficulty in getting to leisure facilities ;
 - sport in the media is dominated by young people and professional teams ; [2]
- (c)
- international matches / cup finals / races, sponsors provide for organisation / administration expense of event covered / provides funding / equipment / facilities for the event ;
 - high profile sponsors may raise the profile of the event / encourage more participants / spectators ;
 - sport retains profits from sponsored event ;
 - sponsor provides prize money for event which raises funds in addition to admission fees paid to watch the event ;
 - some major events could not take place without sponsorship backing ;
 - local events also attract sponsorship benefiting performers and local sponsor ; [3]

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(d) video / film:

- recorded information (best action) ;
- educational (coaching) ;

books:

- stories behind events ;
- biographies for education / skills or instructional book ;

magazines:

- specialised or general, informative and educational ;

internet / social media:

- fast information access ;
- educational / informative / interactive discussions / chat rooms, etc. ;

radio:

- informative with results, reports, comments, etc. ;
- live commentary ;

newspapers:

- informative – results, reports, balanced view / opinion ;
- educational – tips to develop skills, fitness ;

phones:

- use apps to download information ;

[4]

- (e)**
- develop top class facilities ;
 - financial gain for the city / country as a whole ;
 - increased tourism ;
 - increase in employment ;
 - improved road and transport systems / infrastructure improves ;
 - home advantage for home nation / more medals / prestige ;
 - greater support for the home team ;
 - publicity for host city / country ;
 - legacy ;
 - develops a feel-good attitude throughout the country ;

[4]

[Total: 15]