

**CAMBRIDGE INTERNATIONAL EXAMINATIONS**

Cambridge International General Certificate of Secondary Education

**MARK SCHEME for the October/November 2014 series**

**0413 PHYSICAL EDUCATION**

**0413/11**

Paper 1, maximum raw mark 80

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

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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]**

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**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)

<b>body type</b>			
	<b>endomorph</b>	<b>mesomorph</b>	<b>ectomorph</b>
<b>description</b>	fat body wide hips additional weight	muscular broad shoulders narrow hips	thin body narrow features slim hips
<b>advantage</b>	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 O<sub>2</sub> ;  
 • if you exercise in short bursts the heart cannot supply muscles with O<sub>2</sub> 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 ;  
 • O<sub>2</sub> is needed to get rid of lactic acid ;  
 • the O<sub>2</sub> 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]**