

## **MARK SCHEME for the October/November 2012 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.

Cambridge is publishing the mark schemes for the October/November 2012 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

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### Section A

- 1
  - Joins one bone to another
  - Supports the joints[1]
  
- 2
  - **Protein**; strength athletes need to build muscle, protein is the nutrient which does this most efficiently[1]
  
- 3
  - The rate at which a performer is able to perform a movement or cover a distance[1]
  
- 4
  - Swelling
  - Lack of movement
  - Inability to use wrist
  - Deformity
  - Possible bruising[1]
  
- 5
  - It helps the body lose heat
  - Keeps body temperature at a safe level[1]
  
- 6
  - To look good
  - To enhance your body shape
  - Improve physical fitness
  - Improve performance
  - Meet a physical challenge
  - Help maintain good health[2]
  
- 7
  - Bicep relaxes
  - Triceps contracts[2]
  
- 8
  - All body systems work well
  - Free from injury
  - Free from illness
  - Able to carry out everyday tasks with ease[2]
  
- 9
  - To relieve or mask a painful injury in order to continue performing
  - The athlete may compete but make the injury worse / addiction[2]
  
- 10
  - Players are not allowed to tackle an opponent from behind
  - Players may be cautioned or sent off for a breach of the rules
  - Players are not allowed to strike one another
  - Two footed tackles are not allowed[2]

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- 11 • Females generally have a higher proportion of body fat  
 • Fat acts as insulation and keeps body warm  
 • Extra weight is more difficult to carry, slows you down, restricts movement [2]  
 • Increased body fat places additional strain on the heart, joints and muscles

- 12 • Age; reduction in physical / skill related fitness as people get older  
 • Interests  
 • Social circumstances; child care / finance / family / friends / finance  
 • Facilities available; local accessible access to facilities needed  
 • Location; where people live may influence decision to take part in activity. Coastal / sailing.  
 High mountains / skiing [3]

**[Total: 20]**

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## Section B

### Factors affecting performance

- B1 (a)**
- The driving force that makes you do what you do
  - Desire / someone can give you the desire to do something
  - Wish to succeed
- Intrinsic / extrinsic motivation not given credit [2]
- (b) Red blood cells**
- Carry O<sub>2</sub>
  - Muscles need O<sub>2</sub> in order to provide energy for movements
- White blood cells**
- Fight infection
  - Enable performer to remain healthy, free from colds and able to continue to perform
- Platelets**
- Help blood clot
  - Increase recovery time [3]
- (c)**
- A balanced diet is needed in order to provide the essential nutrients
  - Be wary of their environment, free from pollution caused by various emissions
  - Ensure enough sleep and sufficient rest to allow the body to recover
  - Regular exercise, at least three times a week for at least 20 minutes recommendation
  - Good personal hygiene to help avoid infections, illness and diseases
  - Avoid harmful substances such as tobacco (smoking), alcohol and drugs
  - A positive mental attitude
  - Time for relaxation
  - Wearing the correct clothing to keep the body warm / cool during performing [3]
- (d)**
- Stimulate nerves
  - Stimulate the cardio and respiratory system which leads to an increase in heart rate
  - Can result in high blood pressure
  - Could lead to associated heart problems
  - Mask effects of injury causing possible longer term damage
  - Could lead to aggressive behaviour
  - Being banned from competition
  - Addiction
  - Liver / brain damage
  - Withdrawal effects / depression [5]

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(e) (i) Point A

- Arousal level is low, possibly due to boredom or tiredness.
- Not feeling psyched-up towards task or event.
- As a result performance is poor / below par.

Points B-C

- Between points B and C performance is at its potential best
- Known as “optimal” performance
- Zone of optimal arousal

Points C-D

- If arousal levels continue beyond point C performance will suffer
- Over arousal or being “psyched out” occurs
- Participants perform badly compared to other areas of the process

[3]

- (ii)
- Motivational / pep talk from coach
  - Appropriate warm up activities prior to event
  - Having a definite goal to reach and achieve
  - Inspiration from the crowd, bright lights, spectator noise, synchronised clapping prior to jumping event in athletics
  - Motivation as a result of hostile fans
  - The importance of the match / trophy / prize

[3]

- (f)
- Guidance / input given to us;  
**Visual**; demonstrations show us what we need to do  
**Verbal**; explanations must be brief and focus on the important points  
**Manual**; support will keep us safe and give confidence
  - Positive experiences gained
  - Feedback
  - Knowledge of results
  - Knowledge of performance
  - Type of practice used

**Whole practice**, such as catching. You practice the whole skill and then progress to practice within a game

**Part practice**. If it is a very complex skill such as tennis serve you could;

- watch a demonstration first
- break the parts down for example; the toss, the swing, contact, follow through
- put the parts together as a whole skill
- perform the skill in a game situation

**Variable practice**. When practicing an open skill for example dribbling in Hockey you should practice in different situations. This is important because movements in an open skill will vary because of the environment

**Fixed practice**. When practicing a closed skill, keep repeating in the same conditions to reflect the environment of competition

[6]

**[Total 25]**

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## Unit 2 Health, safety and training

- B2 (a)**
- Psychological preparation, helps players prepare mentally for the competition
  - Physically preparing the body for exercise
  - Raises body temperature
  - Reduces risk of injury
  - Makes joints more mobile
- [2]
- (b)**
- Promote the value of regular exercise for health and fitness
  - Teach the principles involved in training for different sports both in theory and practice
  - The importance of safety and safe practice in sport
  - How to avoid and treat sporting injury
  - Recognise the need for a healthy lifestyle
  - Recognise the need for a balanced diet
  - Recognise the need to take regular exercise
  - Recognise the need to avoid drugs and pollutants
- [2]
- (c)**
- Graze / abrasions; small grazes which should be cleaned with water and covered to prevent infection
  - Bruises; occur when tissue is squashed between the bone and an object or person. This causes internal bleeding and blood leaks below the surface of the skin seen as a purple / blue colour. Swelling and pain are also signs and symptoms. Bruises should be treated with an ice pack
  - Blisters; caused by friction which produces a layer of fluid under the skin. Cover with a plaster, do not burst blisters
  - Sprains caused by twisting/over stretching ligaments at a joint. Rest the joint, apply ice to reduce swelling, compression to reduce blood flow to the injured area, elevate the joint
  - Strain injury to a muscle or tendon. Treatment the same as sprain
  - Cuts; stop the bleeding and letting the blood clot as quickly as possible. Use a clean pad to apply pressure until bleeding stops. Raise the injured part of the body to help slow bleeding down. Deep cuts may need medical attention or stitching
- [3]
- (d)**
- Assess the situation
  - Health and fitness; are you ready for competition
  - Techniques and skills; do you have the ability to compete at that level
  - Training; has sufficient training taken place to cope with the demands of the activity
  - Warm up; performed correctly
  - Clothing, equipment and footwear
  - Jewellery; removed before taking part
  - Rules; knowledge and understanding
  - Etiquette; expected codes of behaviour
  - Respect; for opponents / environment
- [3]

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- (e) • Involves deliberately varying the speed and intensity at which you perform  
• Can involve a variety of activities, running, cycling, skiing  
• Can include variations of terrain, slopes, sand dunes etc  
• To improve aerobic and anaerobic fitness  
• Assists games players who need a combination of aerobic and anaerobic fitness  
• Enjoyable form of training as it allows you to train at your own capability  
• Reduces tedium in training [4]

- (f) • Protein intake for muscle build and repair  
• Days leading to event; carbohydrate loading several days and at least the night before  
• Prior to activity; eat a light digestible meal for example chicken, soup or porridge.  
• Do not intake too much fluid.  
• No fizzy / carbonated drinks as gasses will bloat  
• During activity; maintain fluid levels to replace water lost through sweat and to replenish energy.  
• High energy / power drinks containing simple sugars and glucose will replenish energy levels.  
• High energy foods such as bananas are high in simple and complex carbohydrate  
• Excessive eating prior to the event may lead to increased stores of fat  
• Daily energy food intake needs to be balanced with athletes' needs [6]

**[Total: 20]**

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### Unit 3: Reasons and opportunities for participation in physical activity

- B3 (a)**
- Helps to prevent illness
  - Helps to relieve stress
  - Positive feeling of looking and feeling good
  - Provide social benefits
- [1]
- (b)** Urban, for example, swimming Pool
- Regular public transport to and from venue
  - Parking less of an issue away from city centre
- Suburban, for example, equestrian centre
- Wide open spaces for activity to take place
  - A more natural environment for horses
  - Easily accessible for people within the city or surrounding areas
- Credit should not be given just for examples of facilities unless the reasons for their location is given.
- [2]
- (c)**
- Scholarships; athletes are funded to train at certain institutions with top coaches and facilities with their course fees, accommodation and subsistence all paid for
  - Trust funds; indirect payments through appearance and prize money. Money from the fund can be used to cover training and living expenses
- [2]
- (d)**
- Live sports events
  - Highlighted events shown afterwards
  - Documentaries
  - Quiz programmes often with “star” celebrities
  - Sports reports on News bulletins
  - Information services Teletext / Ceefax
  - Pay to view
  - School education programmes
  - Dedicated channels (MUTV)
- [3]
- (e)**
- Provision of facilities; areas for members to train and play
  - Organise fixtures and competition; within the club and against others
  - Promote sport; encourage participation and encourage people to join the club
  - Encourage junior members; by having younger players involved with coaching and competition will ensure long term future of the club
  - Community involvement; as supporters, spectators and helpers. Usually this means helping with little responsibilities, for example washing kit, match fees etc. which all contribute to the success of the club
- [3]



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- (f)
- Raise the profile of disabled people in sport / increase media coverage
  - Ensure plans for sport include disabled people
  - To provide sporting opportunities for disabled people
  - Improved access for disabled people
  - Encourage disabled to participate in international sport
  - To ensure the best use of resources
  - Increased finance / sponsorship / government funding
  - Ensure the sporting needs of disabled people are met
  - Promote greater social acceptability of people with disability

[4]

**[Total: 15]**