UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIO

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2010 quest

for the guidance of teachers

0413 PHYSICAL EDUCATION

0413/13 Paper 13, 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 must be read in conjunction with the question papers and the report on the examination.

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Section A

1 Provides:
- Shape and support;
- Movement;
- Protection;
- Blood production;

2 Answers must relate to performance i.e. cope with stress will no relate to the effect on performance.
- Able to cope with the stress of losing and failure;
- Can control his/her emotions so they are not distracted from performing/better focus on the game;
- Feels positive about performing;
- Enjoys taking part regardless of the outcome;
- Confident when playing/relaxed; [1]

3 Candidates need to give at least one aspect of the definition to gain a mark.
The free time a person has when not working or sleeping. [1]

4 Answers should state: prop forward – given credit, whereas rugby should not be given credit. [1]

5 Protein; [1]

6
- Ease of access/increase in participation;
- Usually cheaper than commercial facilities;
- Usually recognises the needs of the local community;
- Increase the range of sports available; [1]

7 The examples of the skilled performer must relate to the activity, i.e. tennis.
- Accuracy – most serves are accurate;
- Anticipation – seems to be able to move across the court to return shots easily;
- Seems to select the most appropriate shot, knows when to play a backhand or forehand;
- Can adapt shots and still be effective, when he chases a ball out of court;
- The performer can perform a shot quickly – volley near to the net; [2]

8
- Warm up and cool down (if both are given award only 1 mark);
- Use correct equipment;
- Know the rules and regulations;
- Check surfaces/equipment and facilities are safe to use;
- Does not participate when already injured/ill/tired;
- Ensure coach/teacher is present;
- Being fit for the activity/play at an appropriate level; [2]

9 One mark given for the example – the reason must relate to produces many long/middle distance athletes.

- Reason – many athletes live at altitude which helps performa to compete;
  Reason – Kenya has produced a number of Olympic champi has become traditional for athletes to want to compete in this

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- Red cells – carry oxygen, the more red cells the more oxyg therefore, the performer can participate longer;
- White cells – defence against infection and disease;
- Platelets – help with blood clotting, in contact sports cuts are quite common so it prevents significant blood loss;
- Plasma – allows blood to flow, it carries adrenaline which is important for a performer. Carbon dioxide is also carried in plasma;
- Haemoglobin is part of the red blood cells and carries oxygen; [2]

11 (i)

- Pale grey clammy skin;
- Weak, rapid pulse;
- Feeling weak and dizzy/faint/blurred vision;
- Cramp and headaches;

(ii)

- Lie the casualty down in a cool, shady place;
- Raise legs;
- Give frequent sips of a weak solution of salt in water;
- Cool the body by spraying water or fanning;
- Call a doctor; [3]

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- Pride in representing their country- irrespective of any financial reward;
- The Olympic Games represents a unique experience/only happens every 4 years;
- To win a gold medal would raise the profile of the individual/chance to win a medal could be a once only opportunity;
- The history of the games encourages a player to be involved;
- Winning the Olympics in any sport is seen as the pinnacle of achievement/compete at the highest level;
- Enhance reputation/gain more opportunities to gain sponsorship/greater recognition; [3]

[Total: 20]

Section B

Factors Affecting Performance

B1 (a)
- Too much information can cause confusion/causes remember information;
- Break down complex skills into small parts and learn them back together;
- It becomes possible to focus on the most important aspe
- Easier to identify weaknesses;

(b) To gain a mark candidates should give an example of an activity and how results provide feedback.
Examples such as athletics – time/distance;
swimming – time;
gymnastics – judges scores; [1]

(c)
- Specificity – as the event would require endurance the exercises would target either the main muscle groups – legs or the need to improve endurance;
- Overload – make the body work harder it will then adapt to the increased demands (if the candidate gives an example from FIT they should be given credit – Frequency, intensity, time);
- Progression – the body must adapt gradually. It cannot do so overnight;

Candidates can gain marks for giving an example once they have named the principle. [2]
1 mark for the training principle and 1 mark for the application.

(d)
- Fixed/immoveable/fiberous joints
  Example between the plates in the cranium;
- Slightly moveable/cartilaginous joint
  Example Between two vertebrae
  Ribs and sterum
  Pelvis; [2]

(e)
- Help the performer to remain calm/relaxed;
- Allows the level of arousal to be controlled;
- Allows the performer to mentally rehearse their performance/greater focus;
- Increases awareness;
- Allows the performer to go through a game plan/plan moves;
- Motivates by allowing the performer to imagine the outcome/gives confidence; [2]

(f)
- Lungs start to breathe faster/deeper;
- Oxygen is taken into the body quicker;
- Carbon dioxide is removed quicker/gas exchange is quicker;
- Increase in respiratory rate/tidal volume/minute volume;
- The intercostal muscles relax and contract quicker;
- The diaphragm contacts and relaxes to change the space in the chest area;
- The amount of oxygen taken to the muscles increases; [3]

(g) (i)
- Agility – the ability to change direction quickly w routines;
- Balance – being able to hold a position without wobb
- Co ordination – being able to link two or more move
- Explosive strength – strength and speed is needed
- Timing – being able to adjust and land a somersault;

Candidates can use any example from gymnastics to illu

(ii)
- Agility – Illonois Agility Test (give credit if the candid their answer);
- The performer must complete the course as quickly as possible;
- Cones are used to mark out a course;
- The performer must avoid the cones by weaving in and out of the cones;
- Time is taken over two attempts and the fastest recorded;

Balance – Stork Stand Test.
- Place hands on hips;
- Place the toes of one leg against the knee of the supporting leg;
- Time starts when the performer is steady and stops when they wobble;

Co ordination – Alternate hand wall test.
- Stand 2 metres from a wall;
- Throw a ball underarm;
- Catch with the other hand;
- Repeat for 30 seconds and record;

Explosive strength – standing broad jump.
- Take off and landing mats must be on the same level and firmly fixed on the floor;
- A calibrated mat should be used;
- Stand with both feet behind the start line;
- Jump as far as possible landing on both feet;
- Measure the distance; [3]

(h) (i)
- Voluntary muscles are in our control/works without thinking;
- Voluntary muscles allow movement/contract;
- Voluntary muscles are attached to bones;
- Contains muscle fibre; [2]

(ii)
- Candidates must name correctly the pair of muscle creating the movement – only correct naming should gain marks.

Candidates can gain a max of 3 marks if they fail to name an appropriate muscle pair.

- Muscles can only pull;
- Muscles are attached to the bone by tendons/points of origin and insertion;
- When one muscle contracts the other muscle relaxes;
- The muscle that contracts to produce movement is called the prime mover;
- The muscle tendon at the point of insertion is pulled towards the point of origin; [4]

If an explanation is given of muscle contraction/relaxes give 2 marks.

(iii)
- A muscle which contracts in order to assist the prime
- Helps the agonist to work smoothly;
- Stabilises the joint;

Health, Safety and Training

B2 (a)
- Soreness and joint pain/stress related injuries;
- Frequent colds/flu;
- Tired;
- Loss of appetite; [1]

(b) (i) Answers should be any occasion in a game that requires power.
Examples such as hurdling, vertical jumping in basketball, volleyball, jumping phase in long jump, triple jump, jumping to head a ball in football. [1]

(ii)
- Repeated jumping;
- Squat thrusts;
- Repeating standing long jump;
- Bounding;
- Repeating Jumping onto a box; [1]

(iii)
- Increases muscle tone;
- Improves muscle response time;
- Improves balance/posture;
- Improves flexibility/reduces the possibility of injury;
- Improves muscle performance;
- Improves co ordination; [1]

(c) (i)

Nutrient	**Benefit**
Protein	**Helps repair of cells**
Carbohydrates	• **Main source of energy**
• ***Fibre***	It clears out the gut

[2]

(ii) The answer should relate to the benefits that would result from a change in diet i.e. extra/additional carbohydrates would benefit endurance athletes by providing more energy.
High protein for muscle building useful in strength activities such as weight lifting, rugby, etc.

Maintaining a balanced diet can help a performer maintain body shape/stay within weight categories. [2]

(d) (i)
- An activity that is largely endurance – answers that be given credit;
- Long distance running – marathon;
- Long distance swimming (just swimming no credit);
- Triathlon;

(ii)
- The heart grows larger/more efficient/contracts stron
- The walls of the heart grow a little thicker/more musc
- Volume of blood held in the heart increases;
- The body makes more blood cells which increases t
- More oxygen can be carried to the working muscles/faster removal of lactic acid;
- Arteries grow larger and increase in elasticity;
- Blood pressure reduces;
- The resting heart rate falls;
- Recovery time after exercise reduces;
- Stroke volume increases; [4]

(e) (i)
- Increases strength/muscle mass;
- Increases strength endurance;
- Enables the body to adapt to stress/demands;
- Increase in speed;
- Increase in agility;
- Increase in flexibility;
- Increase in power;
- Increase in confidence/motivates; [3]

(ii) Advantages
- Can work on specific areas of muscle strength;
- Training can be made specific to a sport;
- Improves fitness;
- Easy to monitor progress;
- Easy to do regardless of weather/season;
- Easy to increase and increases can be small/individualised;
- Most sports can benefit from some aspect of weight training; [2]

Disadvantages
- Boring/de-motivating/intimidating;
- Easy to get injured/strain;
- Can cause too much muscular bulk and reduce speed/agility etc. which may be more important in a particular sport;
- Can be difficult to access/need to join a gym/need specialist equipment/expensive;
- Need good technique to prevent injury;
- Not enough cardio vascular work involved;
- Needs considerable training time to gain any improvement; [2]

[Total: 20]

Reasons and opportunities for participation in physical activity.

B3 (a)
- It may prove difficult to access specialist facilities;
- The performer may be dependent on others to provide tr
- There may be difficulty linking up with elite training group
- Depending on the sport, centres of excellence may be ba

(b)
- Able to develop skills further/to a higher standard/play in sc
- Able to compete in sports/more time to play sport;
- Opportunities to socialise/keep off the streets/provide constructive activities/fun;
- Provides opportunities for people to try sports that may not be part of the curriculum;
- Provides opportunities for adventurous outdoor activities such as camping, climbing etc. which would not be easily available;
- Provides opportunities for gaining qualifications that are not part of the curriculum i.e. coaching awards, D of E;
- Performers are encouraged regardless of ability;
- Activities are easily accessible/free of charge; [2]

(c)
- Edited highlights contain only exciting material;
- Showing edited highlights prevents boredom because the entire game might be too long for a young person to maintain interest;
- Edited highlights can prevent children seeing negative aspects of a sport;
- Use of a high profile presenter/former player to present the programme/create or use role models;
- Programme presented using contemporary music;
- The timing of events could mean younger children may be able to watch;
- The frequency of screening will affect levels of interest;
- Analysis of activities develops understanding of rules/skills; [2]

Positive and negative responses can be accepted but not reversal of the same point.

(d)
- Are there building restrictions?;
- Space available – car parking etc.;
- Accessibility i.e. public transport;
- Accessibility in terms of road network in the area;
- Location in relation to the population;
- The use of the natural environment;
- Cost – what can be included will depend on the budget available;
- Planning permission – if the site creates an increase in traffic, noise etc. the local residents may object to the building taking place; [3]

(e) (i)
- National campaigns targeting specific groups;
- Targeted financial support for groups; [1]

(ii)
- physical disability (wheel chair) use of ramps and wi – bigger cubicles, etc.;
- Additional disabilities such as sight/hearing loss – Br
- Mums with young children, mum and children sessio
- Religious/cultural minority groups – relaxation of rule fitting clothing, women only sessions/introduction of particular group;
- People with learning difficulties – a high level of adul access is improved;
- The elderly – offering less physically demanding a impact fitness activities, putting on sessions during the day;
- Schools – link with schools to use facilities during the day as part of the curriculum;
- Health related – people with specific health related difficulties such as heart problems, obesity etc.;
- Young people – providing extreme sports/adventurous activities;

One mark can be given for naming a group, the second mark can only be given if the reason is specific to the named group. The reason cannot be repeated for another group. [6]

[Total: 15]