

**MARK SCHEME for the May/June 2010 question paper
for the guidance of teachers**

0413 PHYSICAL EDUCATION

0413/13

Paper 13, maximum raw mark 80

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Section A

- 1 Provides:
- Shape and support;
 - Movement;
 - Protection;
 - Blood production;
- [1]
- 2 Answers must relate to performance i.e. cope with stress will not be given credit as it does not 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]

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- 9 One mark given for the example – the reason must relate to the example given. Kenya produces many long/middle distance athletes.
- Reason – many athletes live at altitude which helps performance when returning to sea level to compete;
 - Reason – Kenya has produced a number of Olympic champions since 1960 and as a result it has become traditional for athletes to want to compete in this type of event; [2]
- 10
- Red cells – carry oxygen, the more red cells the more oxygen can be delivered to muscles, 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]
- 12
- 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]

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- (g) (i) • Agility – the ability to change direction quickly which would be of use in gymnastics routines;
- Balance – being able to hold a position without wobbling on the bars;
 - Co ordination – being able to link two or more movements;
 - Explosive strength – strength and speed is needed when vaulting;
 - Timing – being able to adjust and land a somersault;
- [4]

Candidates can use any example from gymnastics to illustrate the component.

- (ii) • Agility – Illinois Agility Test (give credit if the candidate draws a diagram to illustrate 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.

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

[Total: 25]

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)**

| <u>Nutrient</u> | <u>Benefit</u> |
|-----------------|--------------------------------|
| 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]

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- (d) (i) • An activity that is largely endurance – answers that include team games should be given credit;
- Long distance running – marathon;
 - Long distance swimming (just swimming no credit);
 - Triathlon;
- [1]

- (ii) • The heart grows larger/more efficient/contracts stronger;
- The walls of the heart grow a little thicker/more muscular chambers;
 - Volume of blood held in the heart increases;
 - The body makes more blood cells which increases the number of red blood cells;
 - 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]

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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 transport;
 - There may be difficulty linking up with elite training groups;
 - Depending on the sport, centres of excellence may be based in urban areas; [1]
- (b)**
- Able to develop skills further/to a higher standard/play in school/area/district/national teams;
 - 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]

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- (ii) • physical disability (wheel chair) use of ramps and wide doorways, changing rooms – bigger cubicles, etc.;
- Additional disabilities such as sight/hearing loss – Braille, sound loops, etc.;
- Mums with young children, mum and children sessions, crèche facilities;
- Religious/cultural minority groups – relaxation of rules to allow women to wear loose fitting clothing, women only sessions/introduction of activities that are specific to a particular group;
- People with learning difficulties – a high level of adult support, adaptation to rules so access is improved;
- The elderly – offering less physically demanding activities, offering a range of low 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]