



## **General Certificate of Education**

# **Sport and Physical Education** *5581*

**PED1**

## **Mark Scheme**

*2007 examination – June series*

Mark schemes are prepared by the Principal Examiner and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation meeting attended by all examiners and is the scheme which was used by them in this examination. The standardisation meeting ensures that the mark scheme covers the candidates' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for the standardisation meeting each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed at the meeting and legislated for. If, after this meeting, examiners encounter unusual answers which have not been discussed at the meeting they are required to refer these to the Principal Examiner.

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Set and published by the Assessment and Qualifications Alliance.

# Sport & Physical Education

## Unit 1

### General Instructions

In the mark scheme ; separates single marks  
 / indicates alternatives  
 CAO correct answer only  
 Equiv. Means allow any equivalent answers.

1. (a) 1. Skill – learned;  
 2. Ability – inherited/innate/traits a person possesses/enduring characteristic.  
 3. Pre-determined results with maximum certainty/intention/goal directed;  
 4. Minimisation/efficiency/aesthetic/accurate/smooth/fluent/controlled/ economical/effortless/consistency/equiv. **4 marks**
- (b) (i) 1. 800m, 1,500m, 3,000m, 4x100m relay, 4x200m relay, 4x400m relay  
 2. Environment may change/influence/affected (pace/tactics/ decisions made) **2 marks**  
*(do not credit weather)*
- (ii) 1. 100m/ 400m/800m/ 1500m/ 3000m/5000m/ 10,000m/marathon 100m hurdles/400m hurdles;  
 2. Repeated actions/no distinct beginning and end. **2 marks**
- (iii) 1. 100m, high jump, long jump, triple jump, shot putt, javelin, 100m hurdles/hammer/discus;  
 2. Consists of/able to be broken down/practised into (discrete) packages. **2 marks**  
*(only credit example point if it is from a named recognised athletic event for i,ii,iii)*
- (c) 1. Amount of work/effort done;  
 2. Per unit of time;  
 3. Combination of strength/force and speed/force quickly/strength x speed. **2 marks**
- (d) 1. (a) Runner- 30 m sprint test/magaria test-running up steps;  
 (b) Thrower- medicine ball throw;  
 (c) Jumper- standing long jump/vertical jump/sargent;
2. (a) Athlete sprints/runs as fast as possible from a stationary start;  
 (b) From a standing throw record the greatest distance;  
 (c) Record distance from standing. **(Max 2 if wrong event selected)**

3. Compare results to norms/tables/charts/averages/other performers/ previous performance. 3 marks  
*(only credit first test named)*
1. Speed, (local) muscular endurance, flexibility, dynamic balance, strength, cardiovascular respiratory endurance (stamina), agility;  
*(1 mark for two correct)* *(sub max 2 marks)*
  2. Speed of movement for all events/out of the blocks;
  3. (Local) muscular endurance-hurdling technique;
  4. Cardiovascular respiratory balance/stamina - need for events 800m+;
  5. Flexibility - high jump flosbury flop technique/hurdling/throws;
  6. Dynamic balance- shot putters and hammer throwers;
  7. Strength – discus/hammer/pole vault/shot putt/long jump/javelin/ triple jump;
  8. Agility – high jump. 3 marks
2. (a) 1. (Agonist) - hamstrings;  
 2. (Action) - Flexion/extension to flexion;  
 3. (Type of contraction) - Concentric/isotonic. 3 marks
- (b) 1. Tidal volume;  
 2. Inspiratory reserve (volume);  
 3. Expiratory reserve (volume).  
*(do not credit initials and accept first three answers only)*  
3 marks
- (c) 1. Small/slight increases in lung volumes/capacities;  
 2. Slight increase in vital capacity;  
 3. Increased percentage of alveoli used *(do not credit increased number)*;  
 4. Increase in the efficiency of respiratory muscles;  
 5. Improve transport of the respiratory gases/more CO<sub>2</sub> to lungs and more O<sub>2</sub> taken away from the lungs;  
 6. Increase in number of red blood cells/more blood/haemoglobin concentration;  
 7. Increase in blood plasma volume;  
 8. More efficient gaseous exchange at alveoli and tissues/greater O<sub>2</sub> exchange;  
 9. Increase in capillary density;  
 10. Improved uptake of oxygen by the muscles;  
 11. Increased a-VO<sub>2</sub> diff.;  
 12. Increased VO<sub>2</sub> max. 3 marks
- (d) *Sub max 1 mark*  
 1. The will/want/willingness to succeed/desire to learn/achieve success/drive;
- Sub max 4 marks*
2. Intrinsic/ internal - within the performer;
  3. Internal satisfaction/ feel good factor/self fulfilment/self worth;
  4. Extrinsic/external- outside the performer/ from a coach;
  5. Tangible- prize/trophy;
  6. Intangible- praise. 5 marks

- (e) 1. Make it fun/enjoyable;  
2. Variation in training/ more interesting-fartlek/ hills;  
3. Allow success;  
4. Alter environment to favour runners/ handicap races;  
5. Use role models;  
6. Positive feedback;  
7. Set goals/targets/ against the clock or distance covered in a set time period/competition;  
8. Use reinforcement/ praise/ verbal encouragement/rewards/prizes;  
9. Emphasise personal improvement/ progress charts/video analysis of performance;  
10. Attribute success internally/'feel good factor'. 4 marks

3. (a) (i) 1. More blood to surface capillaries/skin/to the heart;  
2. To remove heat gained during exercise/decrease core/body temperature;  
3. By radiation/sweating/evaporation;  
4. Increased heart rate/cardiac output/stroke volume;  
5. Heart needs extra oxygen/nutrients. 4 marks

- (ii) 1. Increased metabolic activity/increased carbon dioxide/increased lactic acid/drop in pH;  
2. Detected by chemoreceptors;  
3. Message to medulla/vasomotor control centre;  
4. This is achieved by the autonomic/sympathetic system to blood vessels;  
5. Adrenaline/noradrenaline produced;  
6. Pre-capillary sphincters/arterioles control blood flow into capillaries;  
7. Vasoconstriction-restricting blood flow;  
8. Vasodilation/vessels widening. 3 marks

- (iii) 1. Venous return mechanism;  
2. Veins have one way valves/to prevent backflow;  
3. Muscle contractions compress veins and push blood towards heart;  
4. Breathing movements alter pressure in thorax assist flow back to heart;  
5. Sympathetic nerves cause venous tone/ veins contract to aid return of blood during exercise;  
6. Suction pump of heart. 3 marks  
*Do not credit gravity*

- (b) (i) Sub max 3 marks

1. Movements are pre-planned/well learnt /autonomous/automatic/ movement stored in LTM;  
2. Once initiated no modification/no changes/no adjustments;  
3. No feedback during the execution of task;  
4. Ballistic/very quick/limited time;  
5. Use knowledge of results for subsequent changes;

*Sub max 1 mark*

6. Catching/throwing/kicking a ball. 4 marks

- (ii)
1. There is feedback;
  2. Kinaesthetic awareness/intrinsic feedback;
  3. Errors are detected and adjustments are made;
  4. Memory trace stored in long term memory;
  5. Memory trace initiates movement;
  6. This is compared to the perceptual trace(what is happening now);
  7. If two traces match performer carries on;
  8. If not the performer will have to make adjustments to the performance;
  9. Error adjustment until perfection is achieved. 4 marks

4. (a)
1. Task-analysis (allow examples);
  2. Demands placed on performer;
  3. Classification/complexity/organisation/nature/type of skill;
  4. Danger (activity)/safety requirements;
  5. Distribution of practice;
  6. Learner-individual/group characteristics (with examples);
  7. Student's age;
  8. Student's level of skill/ability/fitness/knowledge/attitude/ experience/ behaviour/motivation;
  9. Situation - environmental factors (with examples);
  10. Staffing/size of group;
  11. Facilities/equipment/time/space;
  12. Dangerous (environment).  
(*Danger to be credited only once unless qualified*) 4 marks
- (b)
1. Command style-teacher makes all the decisions/no input from group/authoritarian approach. *Sub max 1 mark*

<b>Advantages</b> ( <i>Sub max 3 marks</i> )	<b>Disadvantages</b> ( <i>Sub max 3 marks</i> )
Effective way of teaching a new skill/ time aspect	Discourages thinking or questioning become clones of teachers/doesn't allow creativity/no cognitive thinking
Clear information on skills/tactics/skill is learnt correctly	Learners do not take responsibility for learning/rely on teacher
Establishes clear relationships/routines	Limited use with open skills/ appropriate e.g.s
Teacher/coach can monitor/maintain safety/good in dangerous activities	Difficult to supply individualized feedback/ no differentiation / lack of interaction/learn at different rates
Control behaviour/large groups	Difficult to solve their own problems when performing/lack of understanding
	Learners become bored/lose interest demotivated/not enjoyable

*5 marks*

- (c) (i) 1. Carbon dioxide-as bicarbonate/ hydrogen carbonate (ion);  
 2. Dissolved in plasma/combined with plasma proteins/carbonic acid;  
 3. As carbaminohaemoglobin/combines with haemoglobin. **2 marks**
- (ii) 1. Exercise produces an increase in blood temperature;  
 2. Increase in blood carbon dioxide concentration (pCO<sub>2</sub>);  
 3. Increase in blood acidity/increase in Hydrogen ions/drop in pH;  
 4. Bohr shift;  
 5. Resulting in less saturation of haemoglobin with oxygen;  
 6. An increase in oxygen release/ oxyhaemoglobin disassociation to the working muscles/ muscles receive more O<sub>2</sub>. **4 marks**
- (iii) 1. Detected by chemoreceptors;  
 2. Impulses to medulla/cardiac centre;  
 3. Sympathetic nerve to;  
 4. Sino atrial node;  
 5. Release of adrenaline/noradrenaline. **3 marks**

5. (a)

	Type of joint	Joint action	Main agonist
<b>Shoulder</b>	Ball & socket	Horizontal/flexion/adduction	Pectorals/deltoids
<b>Elbow</b>	Hinge	Flexion	Bicep

**6 marks**

- (b) 1. The ability of a muscle (a group of muscles) to sustain repeated contractions/work against resistance withstanding fatigue over an extended period of time;  
 2. Abdominal curl test/press ups/squat thrusts/ski sit/ pull ups/wall squat/dips;  
 3. Number of in a set time period/keeping to the bleep on the tape/maximal number. **3 marks**
- (c) 1. Motor programme pre-determined set of neural commands/nerve impulses that control the execution of each particular movement/set of instructions/ skill/plan of action stored in memory (long term);  
 2. Subroutines-sequences of movement which are performed automatically/ isolated aspects of a movement/practised in isolation/breaking down movements into different parts/part of a motor programme. **2 marks**  
*(Do not credit examples)*
- (d) List the **four** sources of information.
1. Knowledge of initial conditions/ environmental conditions
  2. Knowledge of response specifications/ response demands;
  3. Sensory consequences/kinethesis/ knowledge of performance/KP;
  4. Movement/response outcomes/knowledge of results/KR;
  5. Consists of recall and/or recognition schema. **4 marks**

- (e)
1. Practice to be varied;
  2. Should include plenty of information/overview;
  3. Should have feedback;
  4. Should be realistic to the activity/game/sports specific;
  5. Should include transferable elements;
  6. Becoming more challenging/more difficult.
  7. Slow motion practices/video analysis/visual aids/guidance
  8. Ensure players are aware of transfer possibilities.

*3 marks*



### Quality of Written Communication

The GCSE and GCE A/AS Code of Practice requires the assessment of candidates' Quality of written communication wherever they are required to write in continuous Prose. In this unit, this assessment will take place for the candidates' script as a whole by means of the following marking criteria.

The candidate expresses moderately complex ideas clearly and reasonably fluently, through well linked sentences and paragraphs. Arguments are generally relevant and well structured. There may be occasional errors of grammar, punctuation and spelling. *3 marks*

The candidate expresses straightforward ideas clearly, if not always fluently. Sentences and paragraphs may not always be well connected. Arguments may sometimes stray from the point or be weakly presented. There may be some errors of grammar, punctuation and spelling, but not such as to suggest a weakness in these areas. *2 – 1 marks*

Ideas are expressed poorly and sentences and paragraphs are not connected. There are errors of grammar, punctuation and spelling showing a weakness in these areas.

*0 marks*

**Total** *3 marks*