



# General Certificate of Education

## *Sport & Physical Education*

### *(PED1)*

# Mark Scheme

## *2006 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.

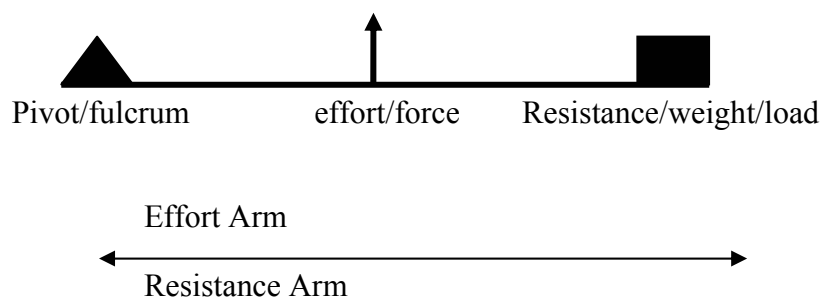
It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of candidates' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

## 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. Extension/Hyper-extension  
2. Gluteus Maximus/ Hamstring/ gluteals  
(Do not credit gluts) 2 marks



- (b) (i) 1. Third class/order;  
2. Correct order of components/effort in the middle;  
3. Effort arm drawn in correct place;  
4. Resistance arm drawn in correct place. 4 marks

(ii) **Advantages (sub max 2 marks)**

1. Wide range of movements possible;
2. The length of the resistance arm is long / force arm is short;
3. Speed of movement rather than force (also applies to first class lever);
4. Small movement of effort/force = large movement of lever;
5. (2<sup>nd</sup> class only) magnify the effect of the effort force.

**Disadvantages (sub max 2 marks)**

6. Effort / force arm is short / resistance arm is long;
7. Unable to move / lift much great resistance;
8. More effort / force required is greater than resistance / load / weight;
9. Known as mechanical disadvantage

*Must link advantage / disadvantages in order to credit. (Do not credit points 2 & 6 together, only credit if they qualify) (if wrong lever in part b(i) can access 3 and 5, 9 but no others).*

*3 marks*

- (c) 1. Ability – something the person possesses / genetic / inherited  
2. Skill is learnt

*2 marks*

- (d) 1. Consistency/repeatable success/ very few mistakes / maximum certainty;  
 2. Efficiency / minimisation of time / quick  
 3. Co-ordination / controlled  
 4. Fluency / flowing / smooth  
 5. Adaptable  
 6. Minimal outlay of energy / effortless  
 7. Aesthetically pleasing  
 8. Goal orientated behaviour / predetermined  
 9. Precise / Accurate / Correct 3 marks
- (e) 1. Closed – performed in a stable environment / pre-planned pattern of movements / habitual / on a long jump pit  
 2. Self-paced-performer decides when to start / and or jump  
 3. Discrete – well defined beginning and end / serial series of discrete tasks / actions  
 4. Gross – involves large muscle groups 4 marks
2. (a) (i) 1. Can focus on particular aspects / perfect / master certain sub routines  
 2. Reduces demand on learner learning complex skill / easier to learn / avoid overload of information  
 3. Allows confidence / understanding to grow quickly  
 4. Increases motivation  
 5. Can reduce the effects of physical fatigue / doesn't require good fitness 3 marks
- (ii) 1. Difficult to appreciate end product / don't get to see the whole skill  
 2. Loss of continuity / feel of flow  
 3. Highly organised skills / fast ballistic skills difficult to break down  
 4. Transfer from part to whole may be ineffective / hard to link to whole movement  
 5. Loss of kinaesthetic sense / lack of feel for whole movement  
 6. Can be time consuming / tedious / not progressing  
 7. Can increase the effects of physical fatigue
- (Do not credit points 5 in (a)(i) & 7(a)(ii) and 4 (a)(i) and 6 in (a)(ii). 3 marks*
- (iii) 1. Age of learner  
 2. Motivation / behaviour / attention of the learner  
 3. Fitness of the learner / physical demand of activity  
 4. Complexity of skill / type of activity  
 5. Level of experience / stage of learning / ability  
 6. Time constraints 3 marks
- (b) (i) **Arteries**  
 1. (Thick) Elastic walls / small lumen;  
 2. Smooth muscle  
 3. Carrying blood away from the heart / to the tissue / muscle site  
 4. Cushion and smooth out / pulsate flow of blood from the heart / withstand pumping action from heart 3 marks

OR

**Veins**

5. Thin walls / with large lumen (cross sectional area)
6. Contains (pocket) valves
7. Allow blood back to pool in them
8. Carries blood back to the heart / away from the tissue / muscle site

3 marks

OR

**Capillaries**

9. One cell thick / thin walls
10. Large surface area for the diffusion of gases
11. Pre capillary sphincters
12. Narrow diameter single blood cell / short diffusion pathway  
(Mark first blood vessel only)

3 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. Sympathetic nerve impulse to blood vessels
  5. Adrenaline / Noradrenaline is produced
  6. Pre-capillary sphincters at capillaries
  7. Vasoconstriction (in blood vessels)/ preventing blood flow to muscles / organs not required
  8. Vasodilatation (in blood vessels) / blood vessels open to allow increased blood flow to the muscle
- 3 marks
- (iii)
1. Less blood to kidneys and to liver at during exercise / more blood to skeletal muscles
  2. Active muscles require nutrients / oxygen / O<sub>2</sub>
  3. But food is taken in needs digestion
  4. Takes time
  5. Blood directed to stomach to aid digestion
  6. Which reduces the amount of blood flow to the active muscles
  7. Causes sickness / nauseous / hinders performance / poor performance

3 marks

- 3 (a) (i) 1. Cardiac output is the volume / amount of blood pumped from the heart in one minute;  
 2. Stroke volume is the volume of blood pumped by the left ventricle / heart / ejected per beat;  
 3. Cardiac Output (Q) = Stroke Volume (SV) x Heart Rate (HR) 3 marks
- (ii) 1. Cardiac hypertrophy / increase muscle mass  
 2. Increase in stroke volume (maximal resting or exercising) / equiv  
 3. Reduction in resting heart rate / bradycardia  
 4. Reduced heart rate allows longer diastolic phase  
 5. Increase in ejection fraction  
 6. Reduction in exercising heart rate / greater heart rate range  
 7. Increase in maximal Q / Cardiac output 3 marks
- (b) 1. This is called venous return.  
 2. Veins have one-way pocket valves  
 3. Muscle contractions (muscle pump) compress veins and push blood towards the heart;  
 4. Breathing movements / respiratory pump alters pressure in thorax / abdomen and assist flow back to the heart  
 5. Sympathetic nerves cause venous tone / veins contract to aid return of blood during exercise  
 6. Suction pump of the heart 3 marks
- (c) (i) 1. Initial conditions / environmental conditions / requirement of skills  
 2. Response specifications / movement parameters / response demands  
 3. Sensory consequences / kinaesthesia / knowledge of performance  
 4. Response outcomes / movement outcomes / knowledge of results  
 5. Recognition / recall schema 4 marks
- (ii) 1. Varied practice conditions / equiv  
 2. Plenty of information  
 3. Practice relevant to game / conditioned games  
 4. Frequent feedback (continuous and terminal)  
 5. Tasks should be challenging  
 6. Include transferable information from other sports  
 7. Slow motion practice / video analysis / visual aids / guidance  
 8. Ensure players are aware of transfer possibilities 5 marks

4 (a)

| Throwing phase | Type of Joint   | Joint Action                   | Main agonist                                  |
|----------------|-----------------|--------------------------------|---|
| Elbow          | Hinge           | Extension                      | Triceps (brachii)                             |
| Shoulder       | Ball and socket | Hyper / horizontal – extension | (Posterior)<br>Deltoids /<br>Latissimus dorsi |

6 marks

- (b)
1. Strength / Speed / Flexibility / Power
  2. (Strength) Maximum amount of force developed in a muscle or a group of muscles in one single maximal contraction
  3. (Speed) Maximum rate a person can move over a specific distance / ability to put body parts in motion quickly
  4. (Power) combination of strength x speed
  5. (Flexibility) a wide range of movement around the joint

*Only accept first two components*

*(2 correct components = 1 mark; Correct definition for each = 1 mark)*

3 marks

- (c)
1. Cognitive / associative / autonomous
  2. (Cognitive) – understanding what they need to do and attempts skill / lots of errors / think about what they are doing / equiv.
  3. (Associative) – how to refine movement so performed more consistent and effective / lots of practice stage / equiv.
  4. (Autonomous) – automatic / doing it without thinking / concentrate on other aspect of skills / high speed and efficiency / very few errors / equiv

3 marks

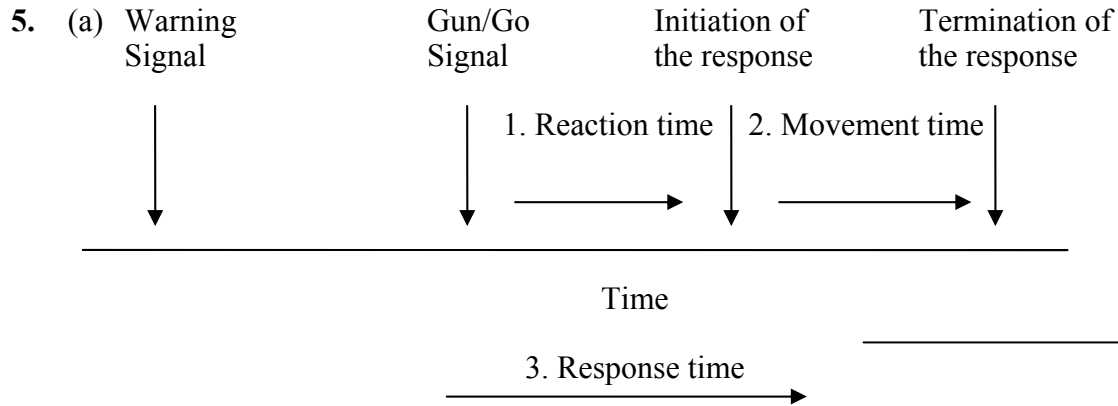
- (d) (i)
1. Ensure safety
  2. Foam javelins / tennis balls / over arm action
  3. Enthusiastic / initial success guaranteed
  4. Focus on key points / concentrate on key points / Part learning
  5. Instructions clear / simple and concise / KISS
  6. Demonstrations by fellow pupils / coach / visual aids
  7. Instructions / verbal guidance
  8. Manual guidance
  9. Practice – trial and error
  10. Create mental image / picture
  11. Goals / rewards / praise / positive reinforcement
  12. Feedback / simple / KR / Terminal / Positive

3 marks

- (ii)
1. Coach gets performer to focus on kinaesthesia / KP
  2. Coach encourages performer self evaluates performance / error detection
  3. Coach may focus on stress management / mental practice / psychological aspects
  4. Coach may be more motivational / pep talks / verbal persuasion
  5. Coach to concentrate on style and form
  6. Set more challenging targets / distances
  7. Frequent practice
  8. Feedback is critical / technical / concurrent / negative
  9. Video analysis

10. Improve and maintain fitness

3 marks



(Do not credit vertical lines)

3 marks

- (b) (i)
1. Predictability of stimulus
  2. By picking up cues or signals / selective attention / e.g's
  3. Experience / previous practice
  4. Simple reaction time / no choice
  5. Age of the performer
  6. Gender of the performer
  7. Intensity of stimulus
  8. Level of arousal / anxiety / stress / fatigue
  9. Presence of a warning signal

3 marks

- (ii)
1. Concentration / pay attention / selective attention
  2. Practice reacting to gun / Grooving the response
  3. Improve physical fitness
  4. Be at optimum arousal level
  5. Anticipation of the gun

3 marks

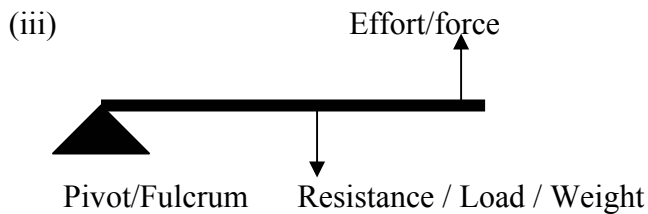
- (c) (i)

|                            | <b>Drive Phase</b>  | <b>Recovery Phase</b> |
|----------------------------|---------------------|-----------------------|
| <b>Type of contraction</b> | Concentric/Isotonic |                       |
| <b>Joint action</b>        | Plantar flexion     | Dorsi flexion         |
| <b>Main agonist</b>        | Gastrocnemius       |                       |

4 marks

- (ii)
1. Sagittal / medium plane
  2. Transverse / horizontal axis

2 marks



1. Second class / order
2. Correct labels
3. Correct order (load / resistance in the middle)

*(Do not credit initials, if wrong lever drawn can only be assessed)*

*3 marks*

### **Quality of Written Communication**

The GCSE and GCE A/AS Code of Practice require 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*