

**CAMBRIDGE INTERNATIONAL EXAMINATIONS**

Cambridge International Advanced Subsidiary Level

## **MARK SCHEME for the October/November 2015 series**

### **9396 PHYSICAL EDUCATION**

**9396/13**

Paper 1, maximum raw mark 90

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.

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1 (a) 6 marks for (first answer only):

Shoulder

1. (Horizontal) flexion / adduction;
2. (Anterior) deltoid / pectoralis major (NB NOT posterior deltoid);

Elbow

3. Flexion OR pronation;
4. Biceps brachii OR pronator teres;

Wrist

5. Flexion;
6. Wrist flexors;

[6]

(b) 6 marks for 6 of:

1. Rapid / speedy / fast / short time contraction;
2. High force production;
3. Low lactate / fatigue tolerance;
4. Larger / faster motor neurone;
5. High sarcoplasmic reticulum development;
6. More / thicker myosin;
7. High PC stores;
8. High glycogen stores (NOT glucose);
9. Low triglyceride stores;
10. Few mitochondria;
11. Low levels myoglobin;
12. High glycolytic / anaerobic / ATPase enzyme / capacity;
13. White / pink;

[6]

(c) 6 marks for 6 of:

Prior to exercise (max 1 mark)

1. Adrenaline released to increase HR;

During exercise (max 4 marks)

2. More CO<sub>2</sub> / drop in pH / increased acidity;
3. Detection by chemoreceptors;
4. Movement;
5. Detection by mechanoreceptors / proprioceptors;
6. Impulses to medulla / cardiac (control) centre (NOT CCC / brain);
7. Sympathetic / accelerator nerve impulses to SAN to increase HR;
8. (Nor) adrenaline;

After exercise (max 3 marks)

9. Blood pressure increases;
10. Detection by baroreceptors;
11. Stimulation of parasympathetic / vagus system;
12. Reduced sympathetic impulses;
13. Release of acetylcholine;

[6]

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(d) 4 marks for 4 of:

1. Increased cardiac output/heart rate/stroke volume (NOT abbreviations);
2. Stronger/more forceful contractions/increased ejection fraction;
3. Increased venous return;
4. Greater (diastolic) filling/preload;
5. Increased peripheral resistance; [4]

(e) (i) 1 mark for (first 3 answers only):

1. Tidal volume AND expiratory reserve volume AND inspiratory reserve volume; [1]

(ii) 3 marks for 3 of (mark effect if name is not quite correct):

1. Tidal volume increases;
2. Expiratory reserve volume decreases;
3. Inspiratory reserve volume decreases; [3]

(f) 4 marks for 4 of:

1. Low  $pO_2$ /less oxygen at altitude/eq;
2. Reduced diffusion gradient between alveoli/lungs and air;
3. Need to increase rate/depth of breathing/tidal volume to compensate;
4. Reduced diffusion gradient between alveoli and blood;
5. Not as much oxygen diffuses into blood;
6. Haemoglobin not as fully saturated/reduced partial pressure of oxygen in blood/slower dissociation;
7. Less oxygen delivered to muscles;
8. Reduced aerobic performance/ $VO_2$  max/quicker onset of anaerobic respiration; [4]

2 (a) 4 marks for 4 of (max 3 if no example):

1. Named motor ability/e.g. strength/speed/innate;
2. Needed as basis for skill/building block/e.g. need strength to learn handstand;
3. Becomes adapted/developed/e.g. kicking becomes passing in football;
4. Named fundamental motor skill/e.g. running/jumping/learned;
5. Needs practice/refinement;
6. Reinforcement/trial and error helps development;
7. Requires coaching/instruction/guidance/demonstrations; [4]

(b) 6 marks for 6 of:

1. (Attention) – demonstration can be seen (NOT pay attention);
2. (Attention) – how attractive/successful/powerful demonstration/role model/demonstrator/behaviour is/functional;
3. (Retention) – can the observer remember the skill in memory/involves cognitive skills/mental image (NOT retain);
4. (Retention) – demonstration is meaningful/relevant/realistic/succinct/accurate;
5. (Motor production) – performer has abilities/skills to complete the task;
6. (Motor production) – performer has opportunity to practice/complex skills show progression;
7. (Motivation) – model needs to be successful/status of model;
8. (Motivation) – reinforcement/praise/feedback/sense of pride/sense of satisfaction; [6]

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**(c) (i)** 4 marks for 4 of:

1. (Knowledge of) initial conditions;
2. (Knowledge of) response specifications;
3. Sensory consequences;
4. Movement outcomes; [4]

**(ii)** 4 marks for 4 of:

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/ensure players are aware of transfer possibilities;
7. Slow motion practice/video analysis/visual aids/guidance; [4]

**(d) (i)** 3 marks for:

1. Movement time – the time taken from the initiation/completion of the movement from start to finish to perform the response;
2. Response time – the total time to complete a response to a given stimulus/ reaction time + movement time;
3. Reaction time – the time taken to recognise and begin to react to the stimulus/time taken between the first presentation of the stimulus to the start of the movement/time taken to decide the shot; [3]

**(ii)** 4 marks for 4 of:

1. Mental rehearsal;
2. Improve selective attention/watching the action/early cue identification;
3. (More) practice reacting to specific stimuli/grooving the response/strengthen the S–R bond;
4. Improve physical fitness;
5. Anticipation of stimulus/early identification cues/concentrate on preliminary movements before the actual movement itself;
6. Increase arousal/motivation;
7. Decrease reaction/movement time; [4]

**(e) (i)** 2 marks for:

1. Associative – performed consistently and effectively/same errors repeated/lots of practice to improve/equiv;
2. Autonomous – doing it without thinking/concentrate on strategic of skills/very few errors/equiv; [2]

(ii) 3 marks for 3 of:

1. (Encourage) performer to focus on kinesthesia / KP / error detection;
2. Stress management / mental practice / psychological aspects;
3. Coach may be more motivational / pep talks / verbal persuasion / encouragement;
4. Set more challenging targets / distances;
5. Frequent / specific / realistic practice;
6. Feedback is critical / technical / concurrent / negative / reinforcement;
7. Video analysis / visual guidance;
8. Improve / maintain fitness;
9. Coach to concentrate on style and form / break skill down / whole part whole; [3]

3 (a) (i) 4 marks for 4 of:

Outdoor Education

1. Outdoor and adventurous activities / outdoor pursuits in an educational setting with school / college;
2. E.g. school ski trip (education) / canoeing in school pool / school rock climbing club;

Outdoor Recreation

3. Outdoor activity in person's free time / holidays / with friends / choice;
4. E.g. mountain biking in free time / canoeing at weekend / sailing during holidays; [4]

(ii) 6 marks for 6 of:

Educational	Recreational
<ol style="list-style-type: none"> <li>1. Appreciation / understanding of natural environment / issues;</li> <li>2. Know personal limits / appreciate risk;</li> <li>3. Trust in others / communication / awareness of others / teamwork;</li> <li>4. Self-reliance / decision making / leadership / problem solving;</li> <li>5. Courage / bravery / overcome fear;</li> <li>6. Cross curricular opportunities / field trips / geography, biology etc;</li> <li>7. Acquire new (named) skill / survival / map reading / bushcraft / safety (need to qualify to credit);</li> </ol>	<ol style="list-style-type: none"> <li>8. Opportunities for 'active leisure' / free time;</li> <li>9. Choice;</li> <li>10. Escape from stress / relax / mental health;</li> <li>11. Health &amp; fitness – physical;</li> <li>12. Intrinsic motivation / fun</li> <li>13. Sense of achievement / fulfilment / confidence / self-esteem;</li> <li>14. Social / friendship;</li> </ol>

[6]

(b) (i) 4 marks for 4 of:

1. Health / fitness / physical / mental / cost to health service;
2. Improve community relationships / community pride;
3. Social control / lowering crime rates;
4. Employment possibilities;
5. Learn skills / social / practical;
6. Better / more effective citizens formed;
7. More will make elite level / talent identification / more success on world stage;
8. Economic benefits explained; [4]

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(ii) 4 marks for (from a single country):

1. Named initiative described – e.g. 'Step into Sport' (UK) aims to encourage more young people to take up non-participating role in sport;
2. Second named initiative described – e.g. 'Active communities' (New Zealand) aims at reducing barriers to participation at a local level;
3. Third named initiative described – e.g. 'Sport for Socialisation' (Zimbabwe) aims to raise funds to encourage disabled participation;
4. Fourth named initiative described – e.g. 'Young New Zealanders' is an initiative to generate additional funding to schools and clubs to encourage increased participation for under 18s;

[4]

(c) 6 marks for 6 of:

1. Importance of occasion / match / need to win / Lombardian ethic / pressure;
2. Media hype / local derby / religion / culture;
3. Incitement by crowds / opposition / retaliation / gamesmanship / bad sportsmanship;
4. Referee's decisions;
5. Over-arousal of players / drugs;
6. Frustration / losing / unable to play well;
7. Type of activity – physical contact makes violence more prevalent;
8. Use of weapons / cues – (ice) hockey sticks;
9. Dehumanisation of players – helmets;

[6]

(d) 6 marks for 6 of (accept implied positives and negatives):

General points

1. TV has made sport a major international business;
2. Sport is for worldwide consumption / global coverage;

Positives (max 3 marks)

3. More money for better players / standards;
4. More viewing spectators / increased exposure;
5. Encourages participation;
6. Less reliance of gate receipts;
7. Educated spectators / role models;
8. Change in formats / longer seasons / more competitions;
9. Improved female / disabled / minority sports;
10. Use of technology to assist decision-making;

Negatives (max 3 marks)

11. Commercial / business / sponsors interests more important than sport;
12. TV runs sport / decides who / what / when / accept examples;
13. Reduction in participation / armchair spectators;
14. Most money goes to few sports / media sports;
15. Over-reliance on TV rights / money;
16. Sports / formats changed to suit TV / loss of tradition / accept examples;
17. Players required to play longer seasons / when injured / shorter career;
18. Sensationalised negative aspects of events / media hype;

[6]