

**CAMBRIDGE INTERNATIONAL EXAMINATIONS**

Cambridge International Advanced Subsidiary Level

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

### **9396 PHYSICAL EDUCATION**

**9396/12**

Paper 1, maximum raw mark 90

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1 (a) 4 marks for (first answer only):

- 1 (Horizontal) flexion/adduction;
  - 2 (Anterior) deltoid/pectoralis major;
  - 3 Flexion;
  - 4 Biceps brachii;
- [4]

(b) (i) 2 marks for:

- 1 Eccentric/isotonic;
  - 2 Muscle lengthens while contracting;
- [2]

(ii) 2 marks for:

- 1 Isometric;
  - 2 Contraction but no movement;
- [2]

(c) (i) 2 marks for:

- 1 Cardiac output – volume of blood leaving heart/ventricle per minute;
  - 2 Stroke volume – volume of blood leaving heart/ventricle per beat;
- [2]

(ii) 1 mark for:

Cardiac output = stroke volume x heart rate / Q = SV × HR;

[1]

(d) 6 marks for 6 of:

- 1 Diaphragm contracts/flattens;
  - 2 External intercostal muscles contract;
  - 3 Ribs/lungs pulled upwards and outwards;
  - 4 (Lungs attached) to pleural membranes;
  - 5 Volume/size of chest cavity/thorax/lungs increases;
  - 6 Reducing pressure (within lungs);
  - 7 Air actively sucked in/active process;
  - 8 During exercise other muscles – sternocleidomastoid/scalenes/internal intercostals/pectoralis minor (any named muscles) increase action;
- [6]

(e) 3 marks for 3 of:

- 1 Dissolved in the plasma;
  - 2 As hydrogen carbonate/bicarbonate ions;
  - 3 As carbonic acid;
  - 4 Some combined with haemoglobin/proteins;
  - 5 Carbaminohaemoglobin;
- [3]

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(f) 4 marks for 4 of (max 2 per location):

At lungs:

- 1 High partial pressure of O<sub>2</sub> in lungs/low pO<sub>2</sub> or high pCO<sub>2</sub> in blood;
- 2 Haemoglobin becomes saturated with oxygen;
- 3 Due to concentration/partial pressure gradient/high to low diffusion;

At muscles:

- 4 Low partial pressure of oxygen in muscles/pO<sub>2</sub> high or pCO<sub>2</sub> low in blood;
- 5 Oxygen dissociates from haemoglobin;
- 6 Released/diffuses to muscle/myoglobin; [4]

(g) (i) 1A – Arteries/aorta;  
2C – Capillaries; [2]

(ii) 4 marks for 4 of:

- 1 Velocity related to cross sectional area/diameter of blood vessels;
- 2 Smaller the area, faster the flow/larger the area, slower the flow;
- 3 Capillaries – largest total cross sectional area – slow blood flow;
- 4 Veins/venules – smaller cross sectional area – faster flow;
- 5 Assisted by venous return mechanisms;
- 6 Pressure relates to resistance to flow;
- 7 Friction between blood and walls of vessels;
- 8 Friction depends on smoothness of lining and diameter of vessel/viscosity of blood;
- 9 Localised arterial constriction; [4]

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2 (a) (i) 1 mark for:

Skill – learned and ability – inherited/innate/born with/traits/enduring; [1]

(ii) 3 marks for 3 of:

- 1 Learned;
- 2 Efficient/minimisation of time/energy/effortless;
- 3 Goal-directed/pre-determined result;
- 4 Follows technical model/accurate;
- 5 Fluent/smooth/error free/consistent;
- 6 Aesthetically pleasing; [3]

(b) 4 marks for 4 of:

(max 1 mark)

- 1 Insight learning – understanding the process to achieve the result;
- 2 Cognitive/Gestalt theory;

(max 3 marks)

- 3 Experiences/understands the ‘whole’ activity rather than skills in isolation/holistic;
- 4 Helps to identify role in the game;
- 5 Allows learners to develop their own strategies and/or routes of understanding/learn own corrections;
- 6 Better for the performer rather than being told what to do all the time;
- 7 Enhances motivation; [4]

(c) 4 marks for 4 of (max 3 marks with no example):

- 1 example – catching/golf swing (fast action without time to adjust skill);

(max 3 marks)

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

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(d) 4 marks for 4 of (max 3 marks with no example):

- 1 Intrinsic received from within/inside the performer via proprioceptors/kinaesthetic;
- 2 Extrinsic received from outside the performer/coach;
- 3 Terminal is received immediately after the performance;
- 4 Concurrent is received during the activity via proprioceptors for kinesthesia;
- 5 Positive is used to inform about something that was correct about a movement;
- 6 Negative is used to inform about something that was incorrect about a movement;
- 7 Knowledge of Performance is information that the performer receives about the quality of their technique;
- 8 Knowledge of Results is information about the outcome of the action; [4]

(e) (i) 5 marks for 5 of:

- 1 Information enters from STSS;
- 2 Only selectively attended items enter;
- 3 Limited capacity;
- 4 Retrieves information from LTM;
- 5 Memory trace/schema/motor programme;
- 6 If not practised/reinforced then lost
- 7 Limited duration/seconds;
- 8 Working memory/decision making;
- 9 Transfers to LTM;
- 10 Sends motor programme to effector mechanism; [5]

(ii) 4 marks for 4 of:

- 1 Rehearse/repeat/practice/overlearn;
- 2 Associate with familiar information/related to past experiences;
- 3 Make information meaningful;
- 4 Make experience enjoyable/vivid/interesting;
- 5 Make stimuli contrasting/recognisable;
- 6 'Chunking'/'chaining';
- 7 Imagery/mental rehearsal/visualisation; [4]

(f) 5 marks for 5 of:

- 1 Increases in motivation increase drive/arousal;
- 2 Increase in drive result in increases of probability of good performance;
- 3 Linear/straight line/proportional relationship/depicted on graph;
- 4 But, not realistic – cannot keep improving;
- 5 Increase in arousal = increase in likelihood of dominant response;
- 6 Dominant response is well learned/good in expert performer;
- 7 Leads to improved performance;
- 8 Dominant response not well learned in novice performer;
- 9 Novice has poor performance because of high arousal; [5]

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3 (a) 4 marks for 4 of (must have both sides of argument):

Play	Sport
1 A fluidity of organisation;	1 Highly organised / structured;
2 Changing numbers / size of pitch / roles / etc.;	2 Pre-determined playing area / numbers / roles of participants;
3 Self officiated;	3 Officiated;
4 For its own sake / fun / intrinsic motivation;	4 Competitive / concerned with winning / rewards / result / serious;
5 Simple / no rules;	5 Complex rules;
6. Rules are agreed among participants prior to participation / changeable;	6 Rules are predetermined / written;
7 Rules can be changed as play progresses / spontaneous;	7 Rules are accepted / adhered to / fixed for the duration of the activity;

[4]

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

Individual (max 3 marks):

- 1 Increased leisure time because – working hours reduced/more holidays;
- 2 Increased leisure time because – labour saving gadgets/technology;
- 3 Increased leisure time because – increase in life expectancy;
- 4 Increased leisure time because – early retirement/unemployment/job share/work from home/flexible work patterns;
- 5 Relief of stress from work;
- 6 Use of time for mental stimulation;
- 7 Develop health/fitness;
- 8 Use to meet other people/social benefits

Society (max 3 marks):

- 9 Society attitudes changed/rights to leisure;
  - 10 Increased status of leisure/seen as important not to waste leisure time;
  - 11 Source of employment/financial gains;
  - 12 Social control/occupy time;
  - 13 Active leisure – reduce strain on health service;
  - 14 Leisure reflects socio-economic status/high status of leisure options;
- [4]

**(c)** 6 marks for 6 of:

- 1 (Named/described) government initiatives;
  - 2 (Named/described) governing body/sport specific initiatives;
  - 3 Other (named) initiatives;
  - 4 Selection procedures;
  - 5 Specialist schools/colleges/universities;
  - 6 Specialist training venues/centres of excellence;
  - 7 Elite coaching structure;
  - 8 Role of world class/development programmes/scholarships;
  - 9 Role of schools/clubs/regional governing bodies;
  - 10 Support structures/sports science/medical/dietary/equiv;
  - 11 How funded (need to state how – not just money);
- [6]

**(d)** 6 marks for 6 of:

- 1 Equal opportunity legislation;
  - 2 Break myths and stereotypes/change attitudes to women's sport;
  - 3 Increase opportunities/clubs/suitable facilities/times for women/women only;
  - 4 Increased media coverage/role models;
  - 5 Increase funding/sponsorship from organisations'/governing bodies to develop women's sports;
  - 6 Cultural promotion/less restrictions;
  - 7 Increased prize money in events;
  - 8 Encourage more women coaches/administrators/officials;
  - 9 School programmes need to create suitable image/experience for girls;
  - 10 Use of women's sport/clothing as fashionable;
- [6]

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

- 1 Ticket sales/income from spectating insufficient to cover costs of providing event;
- 2 Expensive to accommodate performers/officials;
- 3 High cost of security;
- 4 Provide high quality facilities/spectator access/regenerate facilities;
- 5 Promotion of the event;
- 6 Excess funds used to reinvest and develop sport further/develop grass roots;
- 7 Prize money/attract top performers;

[4]

(ii) 6 marks for 6 of (max of 3 per section):

(Positives)

- 1 Increased access to watch sport/live coverage;
- 2 Higher standards of performance;
- 3 High quality stadiums;
- 4 Enhanced viewing experience/interactive technology;
- 5 Greater awareness/knowledge of the sport/creates role models;
- 6 Rules changed to become more exciting spectacle;
- 7 Influenced elimination of negative aspects of sport e.g. hooliganism/responsible reporting;

(Negatives)

- 8 Increased cost/ticket prices/pay-to-view/satellite TV;
- 9 Merchandise expensive/replica kit frequently changed;
- 10 Events moved and scheduled depending on prime time/highest viewing figures;
- 11 Event interrupted to accommodate adverts/commercial breaks;
- 12 Traditional nature of the game may have to alter/rule changes/time-outs/clothing;
- 13 Irresponsible reporting can lead to spectator violence/deviant behaviour;

[6]