

MARK SCHEME for the October/November 2015 series

9396 PHYSICAL EDUCATION

9396/12

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.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

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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 O₂ in lungs/low pO₂ or high pCO₂ 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/pO₂ high or pCO₂ 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]