

Cambridge International AS Level

SPORT & PHYSICAL EDUCATION**8386/11**

Paper 1 Theory

May/June 2024**MARK SCHEME**Maximum Mark: 70

Published

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.

Cambridge International will not enter into discussions about these mark schemes.

Cambridge International is publishing the mark schemes for the May/June 2024 series for most Cambridge IGCSE, Cambridge International A and AS Level and Cambridge Pre-U components, and some Cambridge O Level components.

This document consists of **12** printed pages.

PUBLISHED**Generic Marking Principles**

These general marking principles must be applied by all examiners when marking candidate answers. They should be applied alongside the specific content of the mark scheme or generic level descriptions for a question. Each question paper and mark scheme will also comply with these marking principles.

GENERIC MARKING PRINCIPLE 1:

Marks must be awarded in line with:

- the specific content of the mark scheme or the generic level descriptors for the question
- the specific skills defined in the mark scheme or in the generic level descriptors for the question
- the standard of response required by a candidate as exemplified by the standardisation scripts.

GENERIC MARKING PRINCIPLE 2:

Marks awarded are always **whole marks** (not half marks, or other fractions).

GENERIC MARKING PRINCIPLE 3:

Marks must be awarded **positively**:

- marks are awarded for correct/valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate
- marks are awarded when candidates clearly demonstrate what they know and can do
- marks are not deducted for errors
- marks are not deducted for omissions
- answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.

GENERIC MARKING PRINCIPLE 4:

Rules must be applied consistently, e.g. in situations where candidates have not followed instructions or in the application of generic level descriptors.

GENERIC MARKING PRINCIPLE 5:

Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen).

GENERIC MARKING PRINCIPLE 6:

Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

Science-Specific Marking Principles

1 Examiners should consider the context and scientific use of any keywords when awarding marks. Although keywords may be present, marks should not be awarded if the keywords are used incorrectly.

2 The examiner should not choose between contradictory statements given in the same question part, and credit should not be awarded for any correct statement that is contradicted within the same question part. Wrong science that is irrelevant to the question should be ignored.

3 Although spellings do not have to be correct, spellings of syllabus terms must allow for clear and unambiguous separation from other syllabus terms with which they may be confused (e.g. ethane / ethene, glucagon / glycogen, refraction / reflection).

4 The error carried forward (ecf) principle should be applied, where appropriate. If an incorrect answer is subsequently used in a scientifically correct way, the candidate should be awarded these subsequent marking points. Further guidance will be included in the mark scheme where necessary and any exceptions to this general principle will be noted.

5 'List rule' guidance

For questions that require ***n*** responses (e.g. State **two** reasons ...):

- The response should be read as continuous prose, even when numbered answer spaces are provided.
- Any response marked *ignore* in the mark scheme should not count towards ***n***.
- Incorrect responses should not be awarded credit but will still count towards ***n***.
- Read the entire response to check for any responses that contradict those that would otherwise be credited. Credit should **not** be awarded for any responses that are contradicted within the rest of the response. Where two responses contradict one another, this should be treated as a single incorrect response.
- Non-contradictory responses after the first ***n*** responses may be ignored even if they include incorrect science.

6 Calculation specific guidance

Correct answers to calculations should be given full credit even if there is no working or incorrect working, **unless** the question states 'show your working'.

For questions in which the number of significant figures required is not stated, credit should be awarded for correct answers when rounded by the examiner to the number of significant figures given in the mark scheme. This may not apply to measured values.

For answers given in standard form (e.g. $a \times 10^n$) in which the convention of restricting the value of the coefficient (a) to a value between 1 and 10 is not followed, credit may still be awarded if the answer can be converted to the answer given in the mark scheme.

Unless a separate mark is given for a unit, a missing or incorrect unit will normally mean that the final calculation mark is not awarded. Exceptions to this general principle will be noted in the mark scheme.

7 Guidance for chemical equations

Multiples / fractions of coefficients used in chemical equations are acceptable unless stated otherwise in the mark scheme.

State symbols given in an equation should be ignored unless asked for in the question or stated otherwise in the mark scheme.

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Question	Answer		Marks
1(a)	1 flexion;	2 anterior deltoid;	4
	3 flexion;	4 wrist flexors;	
1(b)	3 marks for any 3 of: 1 planned / progressive learning; 2 part of the school curriculum; 3 delivered to all pupils ; 4 involves learning to move; 5 becoming more physically competent; 6 broad range of activities; 7 teacher-led; Accept other suitable descriptions.		3

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Question	Answer	Marks
1(c)	5 marks for any 5 of: (evaluative points may include) (beneficial because:) 1 increase in wages / (prize) money / extrinsic rewards / sponsorship / professional contracts; 2 (extra money / income) used to provide, e.g. better facilities / equipment / coaches / training support / research / talent-identification programme; 3 performers become famous / role models; 4 increased participation (in the sport); 5 more primary / secondary spectators; 6 increased media interest OR available to stream / watch on TV; 7 performers able to train full-time; 8 use of technology at events to enhance viewing experience / inform spectators / aid officials; 9 increased number of events / competitions; (not beneficial because:) 10 (potential) increase in deviance / cheating / doping / violent play; 11 greater pressure on performers to win; 12 the sport loses control of their events / competitions; 13 loss of traditional values / characteristics of sport; 14 corporate hospitality takes priority OR reduces fans access to watch live sport OR fewer primary spectators; 15 increased cost of TV subscriptions OR fans are unable to afford match tickets; 16 over-reliance on money (from non-spectator / commercial sources); 17 pressure on performers to become professional; Accept other relevant evaluations.	5
1(d)(i)	1 (working) $Q = HR \times SV$ OR 70×80; 2 (answer) 5600 millilitres per minute OR 5.6 litres per minute; Accept equivalent units with appropriate values.	2

Question	Answer	Marks
1(d)(ii)	4 marks for any 4 of: (vascular shunt mechanism) is controlled by the vasomotor control centre / autonomic nervous system; - via sympathetic nerve impulses OR by the sympathetic nervous system; (increased blood flow) - increased blood flow to working muscles; (caused by) vasodilation of arterioles OR widening of arterioles; (caused by) relaxation of smooth muscle (in arterioles); (caused by) opening / relaxation of precapillary sphincters; (decreased blood flow) - reduced blood flow to non-essential organs / gut / kidneys / inactive muscles; (caused by) vasoconstriction of arterioles OR narrowing of arterioles; (caused by) contraction of smooth muscle (in arterioles); (caused by) closing / contraction of precapillary sphincters;	4

Question	Answer	Marks
2(a)(i)	(A) motor reproduction; (B) motivation;	2
2(a)(ii)	4 marks for any 4 of: - make demonstration accurate / correct; - repeat the demonstration; - make demonstration easy to remember / concise; - make demonstration meaningful / fun / interesting / memorable / unique; - use role model to demonstrate skill; - use verbal guidance OR focus the student on specific cues; - improve the student's selective attention OR increase the intensity of the stimulus; - teach the student mental rehearsal / imagery / visualisation; - use of motivation; - use positive transfer of learning OR link the skill to past experiences;	4

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Question	Answer	Marks
2(b)(i)	4 marks for 4 of: (must address air resistance and gravity for full marks) 1 air resistance is the dominant force OR gravity has less influence than air resistance; (air resistance) 2 air resistance acts in the opposite direction to the movement (of the shuttlecock); 3 air resistance acts on horizontal AND vertical components (of flight); 4 air resistance decreases the velocity of the shuttlecock; 5 air resistance is dominant force because of high velocity; 6 air resistance is dominant force because of low mass / weight / large frontal / cross-sectional area; OR air resistance is dominant force because of large frontal / cross-sectional area compared to mass / weight; OR air resistance is dominant force because of roughness of surface / feathers; (gravity) 7 gravity acts downwards OR gravity only affects vertical component (of flight); 8 during the upward phase of flight gravity causes acceleration in the opposite direction of the vertical movement of shuttlecock; 9 during the downward phase of flight / after the highest point / gravity causes acceleration of shuttlecock in the same direction as the vertical movement of the shuttlecock;	4
2(b)(ii)	1 (working) acceleration = $(10 \text{ minus } 70) \div 0.5$ OR $-60 \div 0.5$; 2 (answer) minus 120; 3 (units) metres per second per second;	3

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Question	Answer	Marks
2(c)	6 marks for any 6 of: 1 equipment / racket AND e.g. giving more force to shots / larger sweet spot; 2 equipment / racket BUT e.g. takes getting used to; 3 clothing AND e.g. better regulation of temperature / breathable fabric / increased range of movement; 4 clothing BUT e.g. expensive; 5 footwear AND e.g. better grip / more stability / reduced risk of ankle / knee injuries; 6 footwear BUT e.g. heavy / may cause blisters; 7 surfaces AND e.g. for better grip / sprung floor; 8 surfaces BUT e.g. not multi-use / more chance of injury; 9 facilities AND e.g. higher ceiling / temperature regulation / better lighting; 10 facilities BUT e.g. scarcity / accessibility; 11 cameras / video replay / slow-motion / high-speed camera AND for more accurate analysis of technique / performance; 12 cameras BUT need for experience / expertise to use / expensive / time away from training / requires permission; 13 (computer) software AND e.g. for biomechanical analysis / motion tracking of players / error corrections; 14 (computer) software BUT e.g. expensive / access to personal information / security / data-protection problems / needs updating regularly; Accept other relevant evaluative points.	6

Question	Answer	Marks
3(a)(i)	1 (enduring) means long-lasting / persistent; 2 (underpinning) means forms the basis of skills / building blocks of skill;	2
3(a)(ii)	1 (closed) when serving the environment is stable / predictable OR the dimensions of the court / net height are standard; 2 (internally paced) performer decides when to serve OR the server controls the speed of the serve; 3 (high organisation) a tennis serve is difficult to break down into subroutines; 4 (discrete) the serve has a clear beginning and end;	4
3(b)	3 marks for any 3 of: 1 competitive; 2 highly structured; 3 predetermined boundaries; 4 predetermined numbers; 5 predetermined time constraints; 6 predetermined equipment; 7 predetermined roles; 8 officials; 9 has tactics / strategies; Accept other appropriate characteristics of sport.	3
3(c)	1 (intrinsic motivation) drive that comes from within a performer OR drive from an internal source; 2 (extrinsic motivation) drive that comes from outside a performer OR drive from an external source; 3 (tangible rewards) things that can be touched / seen / picked up; 4 (intangible rewards) things that are impossible to touch / give an exact value to;	4

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Question	Answer	Marks
3(d)	5 marks for any 5 of: 1 increase fitness OR improve any named fitness component, e.g. strength, endurance, speed, power; 2 reduce weight or body fat; 3 speed up recovery after training / injury; 4 increase intensity of training; 5 reduce the effects of fatigue; 6 increase concentration; 7 participate despite injury OR mask pain; 8 hide the presence of other drugs; 9 belief that others are using prohibited PEDs; Accept other appropriate suggestions.	5

Question	Answer	Marks
4(a)(i)	1.9 million;	1
4(a)(ii)	4 marks for any 4 of: 1 improve physical fitness / physical health; 2 improve mental health / improve self-esteem / confidence / reduce stress; 3 improve social health / socialising OR learn life skills / values / leadership / teamwork / sportsmanship; 4 become skilful / knowledgeable in the activity; 5 intrinsic benefits OR e.g. enjoyment / satisfaction / personal challenge; 6 extrinsic benefits OR e.g. praise / prizes / fame / status; 7 earn money; 8 positive use of leisure time / spare time; Accept other appropriate suggestions.	4

Question	Answer	Marks																					
4(b)	6 marks for any 6 of: increased rate of breathing; increased depth of breathing OR increased tidal volume OR more air / oxygen enters lungs; external intercostals contract more forcefully; - lifts rib cage further upwards / outwards; - diaphragm contracts / flattens / lowers more forcefully; greater increase in volume of thoracic cavity / chest cavity / lungs; further reduction in (air) pressure within the lungs; - pressure lower in lungs than in the atmosphere; - additional inspiratory muscles used; contraction of pectoralis minor / scalenes / sternocleidomastoids;	6																					
4(c)	4 marks for any 4 of: <table border="1"> <thead> <tr> <th></th><th>performers in the cognitive stage</th><th>performers in the autonomous stage</th></tr> </thead> <tbody> <tr> <td>1</td><td>tend to make best use of extrinsic feedback</td><td>use mainly intrinsic / kinaesthetic feedback;</td></tr> <tr> <td>2</td><td>receive intrinsic feedback but cannot interpret it</td><td>can interpret intrinsic / kinaesthetic feedback;</td></tr> <tr> <td>3</td><td>tend to make best use of knowledge of results</td><td>tend to use knowledge of performance;</td></tr> <tr> <td>4</td><td>tend to make best use of positive feedback</td><td>can use negative feedback;</td></tr> <tr> <td>5</td><td>tend to make best use of terminal feedback</td><td>can use concurrent feedback;</td></tr> <tr> <td>6</td><td>receive concurrent feedback but cannot interpret it</td><td>can interpret concurrent feedback;</td></tr> </tbody> </table>		performers in the cognitive stage	performers in the autonomous stage	1	tend to make best use of extrinsic feedback	use mainly intrinsic / kinaesthetic feedback;	2	receive intrinsic feedback but cannot interpret it	can interpret intrinsic / kinaesthetic feedback;	3	tend to make best use of knowledge of results	tend to use knowledge of performance;	4	tend to make best use of positive feedback	can use negative feedback;	5	tend to make best use of terminal feedback	can use concurrent feedback;	6	receive concurrent feedback but cannot interpret it	can interpret concurrent feedback;	4
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