

Cambridge International AS Level

SPORT & PHYSICAL EDUCATION**8386/11**

Paper 1 Theory

May/June 2026**MARK SCHEME**Maximum Mark: 70

Published

This mark scheme contains the instructions and marking guidance that our examiners used to mark candidate responses for this component.

Before they start marking, examiners complete a standardisation process. They review a range of candidate responses and discuss the mark scheme in detail to agree which answers can and cannot be accepted. Examiners award marks where it is clear that candidate responses have met the requirements of the mark scheme. These requirements may vary between different components or different versions of the same component, depending on the exact requirements of the question and the candidate responses seen during the standardisation process.

Sometimes, our mark schemes may allow marks to be awarded to responses which contain elements that are factually incorrect or for content not covered by the syllabus. We do this in response to the demands of a specific question to support candidates and make sure that our assessments are fair. However, these allowances should not be used as a guide for teaching and learning.

We cannot discuss the mark scheme with schools, and we recommend that schools read the mark scheme together with the assessment material and the Principal Examiner Report for Teachers.

This document consists of **15** printed pages.

General marking principles

All examiners must apply these marking principles when marking candidate responses.

1	Examiners must award marks for each response in line with: - the specific content defined in the mark scheme - the specific skills defined in the mark scheme or in the level descriptions - the standard of response required as exemplified by the standardisation scripts.
2	Examiners must award whole marks (not half marks, or other fractions).
3	Examiners must award marks positively . This means that: - marks are not deducted for errors or omissions - marks are awarded for correct/valid answers as defined in the mark scheme and also for other valid answers which go beyond the scope of the syllabus and mark scheme referring to your team leader as appropriate - the quality of spelling, punctuation and grammar are judged only when the mark scheme indicates that these features are specifically assessed in the question. However, the meaning of all responses must be unambiguous.
4	Examiners must consistently apply the requirements of the mark scheme and any rules for what to do when candidates have not followed instructions correctly.
5	Examiners must use the full range of marks defined in the mark scheme, unless limited by the quality of the candidate responses seen.
6	Examiners must award marks according to the mark scheme and must not award marks with grade thresholds or grade descriptions 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	<u>'List rule' guidance</u> For questions that require <i>n</i> responses (e.g. State two reasons ...): • The response should be read as continuous prose, even when numbered answer spaces are provided. • Any response marked <i>ignore</i> in the mark scheme should not count towards <i>n</i>. • Incorrect responses should not be awarded credit but will still count towards <i>n</i>. • 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 <i>n</i> 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.

Annotations guidance for centres

Examiners use a system of annotations as a shorthand for communicating their marking decisions to one another. Examiners are trained during the standardisation process on how and when to use annotations. The purpose of annotations is to inform the standardisation and monitoring processes and guide the supervising examiners when they are checking the work of examiners within their team. The meaning of annotations and how they are used is specific to each component and is understood by all examiners who mark the component.

We publish annotations in our mark schemes to help centres understand the annotations they may see on copies of scripts. Note that there may not be a direct correlation between the number of annotations on a script and the mark awarded. Similarly, the use of an annotation may not be an indication of the quality of the response.

The annotations listed below were available to examiners marking this component in this series.

Annotations

Annotation	Meaning
	correct point or mark awarded
	incorrect point or mark not awarded
	information missing or insufficient for credit
	contradiction in response, mark not awarded
	benefit of the doubt given
	error carried forward applied
	point has been noted, but no credit has been given or blank page seen
	response is too vague or there is insufficient detail in response
	linked consideration of points

Annotation	Meaning
	linked consideration of points
REP	repetition in response

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Question	Answer	Marks	Guidance
1(a)	Justifications must be specific to the skill of high jumping. Continuum mark required for justification mark to be credited. 1 (pacing) high jump is internally paced; 2 because performer decides when to start run up OR decides speed of approach / clearing the bar; OR 3 externally paced; 4 because there is a time limit to jump so the performer does not control the timing of when to jump; 5 (organisation) high jump is low organisation; 6 because high jump can be easily broken down into separate subroutines / these can be practised in isolation, e.g. run up / take-off / flight / landing; OR 7 high organisation; 8 because the subroutines of, e.g. (two of) run up / take-off / flight / landing are difficult to break down / practise in isolation; 9 (environmental influence) high jump is closed; 10 because the environment of the run up OR high jump bar and stand OR landing area does not change OR height of bar is set; Accept other appropriate classifications and justifications.	6	Self-paced / internal = BOD 1. They decide when to jump = BOD 2. Do not accept: open. Highly structured = TV. Not affected by external / environmental influences / the environment does not change = TV.
1(b)(i)	extension;	1	Allow flexion to extension.
1(b)(ii)	femur AND tibia;	1	Ignore: patella. Do not accept: ambiguous spellings.
1(b)(iii)	iliopsoas;	1	Accept: iliacus OR psoas (major). Hip flexors = TV.

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Question	Answer	Marks	Guidance
1(c)(i)	1 (first stage) cognitive; 2 (third stage) autonomous;	2	Automatic / autonomic = TV.
1(c)(ii)	5 marks for any 5 of: 1 extrinsic feedback is important because a performer at this stage relies on information from other sources on how skills have been performed; 2 intrinsic / kinaesthetic feedback is less important because although a performer at this stage receives it, they cannot make use of it; 3 positive feedback is important because it helps to encourage / motivate / increase confidence of a performer at this stage; 4 negative feedback is less important because it can be disheartening / demotivating at this stage; 5 terminal feedback is important because a performer needs to pay attention to the feedback being received at this stage; 6 concurrent feedback is less important because a performer struggles to take in information during skill performance at this stage; 7 knowledge of results is important because it helps motivate a performer at this stage; 8 knowledge of performance is less important because a performer at this stage struggles to understand what they are supposed to be doing; Accept appropriate evaluations of the importance of other types of feedback for performers at the cognitive stage of learning.	5	Punishment = TV. Accept: Immediate feedback is important because a performer at this stage can only remember what happened for a short time. Negative feedback is important because it points out mistakes so a performer at this stage knows what to do to improve. Delayed feedback is less important because a performer at this stage can only remember what happened for a short time. Simple / basic feedback is important because a performer at this stage can only take in a limited amount of information. Complex feedback must not be given because it will cause information overload for a performer at this stage.
1(d)(i)	observational (learning theory);	1	Observant learning = TV. Observation theory = BOD. Accept: Social learning (theory).

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Question	Answer	Marks	Guidance
1(d)(ii)	3 marks for any 3 of: 1 the learner must pay attention / focus; 2 learner must be able to retain information / visual image; 3 learner must be able to reproduce / attempt the skill; 4 learner needs to be motivated to attempt / practise the skill;	3	Performer learns by watching others / a demonstration = TV. Rewards as alternative to motivated = BOD 4. Accept: description of social learning theory if named in 1(d)(i): behaviour is learned by (observing and) copying the actions of others; behaviour is more likely to be repeated when it is reinforced; people are most likely to copy role models who have high status / peers / similar in age / similar in ability;

Question	Answer	Marks	Guidance
2(a)(i)	2 marks for any 2 of: 1 touch / feeling / tactile sense; 2 hearing / sound / auditory sense; 3 kinaesthesia / proprioception / body awareness; 4 balance / vestibular sense; Accept other relevant types.	2	Do not accept: vision / eyes / sight. Smell / olfaction / taste = BOD.
2(a)(ii)	3 marks for any 3 of: 1 detection of stimuli OR encoding of stimuli; 2 comparison to memory stores; 3 recognition of stimuli; 4 the DCR process; 5 selective attention; 6 interpretation of stimuli;	3	

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Question	Answer	Marks	Guidance
2(b)(i)	1 (negative transfer) (the learning of) one skill hinders the learning of another skill; 2 (example) the forehand used in tennis hinders the learning of the forehand in badminton; 3 (retroactive transfer) the learning of a new skill affects (the learning of) a previously learned skill; 4 (example) the learning of a badminton smash affects the previously learned tennis smash; Accept other appropriate examples of transfer using skills from badminton and tennis.	4	Learning a tennis skill has a <u>negative</u> effect on learning a badminton skill = TV. Do not allow examples showing any transfer between a tennis serve and a badminton serve. Allow transfer within each sport.
2(b)(ii)	3 marks for any 3 of: (a coach could ...) 1 ensure overlearning / grooving of the original / learned skill; 2 provide realistic practice OR provide practice that replicates game situations; 3 present similar skills / movement patterns to the original / learned skill; 4 avoid situations where the new skill requires reacting to an old stimulus; 5 make performer aware of transfer; 6 limit the time between the two skills; 7 present a similar stimulus to the original skill; 8 present a similar response to the original skill; 9 reinforce / reward evidence of positive transfer occurring;	3	Avoid negative transfer = TV. Repeat / practise the skill = TV.

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Question	Answer	Marks	Guidance
3	6 marks for any 6 of: 1 to improve physical health / physical fitness; 2 to improve mental health / improve self-esteem / confidence / reduce stress; 3 to improve social health / to be part of a group / with friends / learn life skills / learn values; 4 to become skilful / knowledgeable in the activity; 5 promoted by the media / fashionable / increased popularity of (some) women's sports / role models / campaigns / fundraising / charity events; 6 improved range of school physical education programmes; 7 intrinsic benefits OR enjoyment / satisfaction / personal challenge; 8 extrinsic benefits OR praise / prizes / fame / status; 9 increase in leisure time OR more free time; 10 changing attitudes to role of women in society OR sharing family responsibilities; 11 increase in provision of exercise activities OR equal opportunities OR positive discrimination OR women-only sessions; 12 increase in disposable income OR exercise can be cheap / free; 13 improvement in availability of childcare facilities / creches / nurseries; 14 to earn money OR opportunity to turn professional OR make sport a career; Accept other appropriate suggestions.	6	

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Question	Answer	Marks	Guidance									
4(a)	<table><tr><td>1</td><td colspan="2">(working) stroke volume = cardiac output ÷ heart rate OR 13.2 ÷ 120 OR 13 200 ÷ 120;</td></tr><tr><td>2</td><td>(answer) 0.11;</td><td>(answer) 110;</td></tr><tr><td>3</td><td>(units) litres;</td><td>(units) millilitres;</td></tr></table> Accept equivalent units with appropriate values. Answer mark required for unit mark to be credited.	1	(working) stroke volume = cardiac output ÷ heart rate OR 13.2 ÷ 120 OR 13 200 ÷ 120;		2	(answer) 0.11;	(answer) 110;	3	(units) litres;	(units) millilitres;	3	Accept: (units) = suitable unit notation, such as ml or L, if correct for value given.
1	(working) stroke volume = cardiac output ÷ heart rate OR 13.2 ÷ 120 OR 13 200 ÷ 120;											
2	(answer) 0.11;	(answer) 110;										
3	(units) litres;	(units) millilitres;										
4(b)	3 marks for any 3 of: 1 predetermined boundaries; 2 predetermined numbers; 3 predetermined time constraints; 4 predetermined equipment; 5 predetermined roles; 6 officials; 7 tactics / strategies; Accept other appropriate characteristics of sport.	3	Do not accept: highly structured, competitive or complex rules. Accept examples of each characteristic.									
4(c)	1 (friction) helps prevent the runner’s foot from slipping OR acts in the opposite direction to the direction that the foot is slipping OR helps performer change direction / change velocity / accelerate / slow down; 2 (gravitational force) pulls runner downwards OR acts downwards / towards the ground; 3 (reaction) pushes runner forwards / upwards OR acts forwards / upwards; Accept other suitable descriptions.	3	(friction) Stops runner falling = TV. Acts against runner = BOD. (gravitational force) Keeps runner on ground = TV. (reaction) Makes them move = TV.									

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Question	Answer	Marks	Guidance
4(d)	5 marks for any 5 of: 1 tidal volume increases; 2 minute ventilation increases; 3 inspiratory reserve volume decreases; 4 expiratory reserve volume decreases; 5 residual volume is unchanged; 6 vital capacity is unchanged; 7 total lung volume is unchanged;	5	Increased depth of breathing = BOD 1.
4(e)	5 marks for 5 of: (sub-max. 4 marks for structure alone) structure: 1 (relatively) small muscle fibre diameter; 2 few fibres per (motor) neurone; 3 small (motor) neurone size; 4 high levels / large amounts of myoglobin; 5 high numbers / density of mitochondria; 6 high capillary density / many capillaries; 7 low levels of phosphocreatine / PC stores; 8 low levels of glycogen; 9 high levels of fat stores / triglycerides stores; 10 high levels of oxidative enzymes; 11 low levels of glycolytic enzymes; Accept other appropriate descriptions of structures. function: 12 slow speed of contraction; 13 high resistance to fatigue; 14 produces low strength / less force / less powerful contractions; 15 high aerobic capacity OR low anaerobic / glycolytic capacity;	5	Do not accept: effects on the runner, e.g. the runner will be able to run for longer. Small size alone = TV. Smaller cross-sectional area = 1. Slow to fatigue / high endurance = BOD 13.

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Question	Answer	Marks	Guidance
5(a)(i)	1 (working) velocity $\times$ time OR 12×20 OR indication of use of area under relevant line / identification of relevant rectangle; 2 (answer) 240;	2	
5(a)(ii)	1 (working) acceleration = [final velocity – initial velocity] $\div$ time taken OR change in velocity $\div$ time OR $[12 - 0] \div 10$; 2 (answer) acceleration = 1.2; 3 (units) = metres per second per second OR metres per second squared;	3	$12 \div 10 = \text{BOD } 1.$ Accept: (units) = $\text{m} / \text{s} / \text{s}$ OR ms^{-2} OR m / s^2 . Do not accept: (units) = ms^2 .
5(b)	4 marks for any 4 of: 1 reduced stimulation of chemoreceptors / mechanoreceptors OR changes to stimulation of baroreceptors; 2 cardiac control centre receives information from receptors OR cardiac control centre sends impulses to the sinoatrial node; 3 (parasympathetic nervous system) causes heart rate to decrease ; 4 ... via vagus nerve; 5 ... release of acetylcholine (to the sinoatrial node); 6 (parasympathetic nervous system) allows heart rate to increase ; 7 ... via reduced stimulation of the vagus nerve; 8 ... reduced release of acetylcholine (to the sinoatrial node);	4	

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Question	Answer	Marks	Guidance
5(c)	4 marks for any 4 of: 1 players / officials / support staff are not allowed to bet on their own sport; 2 use of strict punishments / bans / fines; 3 use of positive role models OR name and shame offenders; 4 ensure rules / regulations are clear for all involved in sport; 5 promote awareness of the dangers of being associated with people who may try to encourage competition manipulation; 6 educate all those involved in sport of the negative consequences OR educate people about the positive values of sport; 7 encourage reporting of any such approaches / whistle-blowing; 8 monitor competitions closely for any unusual results; 9 encourage gambling sites to report any suspicious activity OR use technology to track irregular betting; 10 adopt / apply the Olympic Movement Code on the Prevention of the Manipulation of Competitions; 11 liaison between sport governing bodies / law enforcement agencies / Interpol OR Integrity Betting Intelligence System (IBIS); Accept other appropriate strategies.	4	