

Cambridge International AS Level

SPORT & PHYSICAL EDUCATION**8386/13**

Paper 1 Theory

October/November 2025**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 October/November 2025 series for most Cambridge IGCSE, Cambridge International A and AS Level components, and some Cambridge O Level components.

This document consists of **14** 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.

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
	repetition in response

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Question	Answer					Marks
1(a)(i)	hip	1 ball and socket;	2 flexion;	3 iliopsoas;		6
	knee		4 extension;	5 rectus femoris;	6 biceps femoris;	
1(a)(ii)	5 marks for any 5 of: 1 knee joint is less stable than the hip joint OR hip is more stable than the knee; 2 both joints are synovial / freely movable OR hip is ball and socket AND knee is hinge; 3 hip joint has a larger range of movement OR knee has smaller range of movement; 4 both joints allow flexion AND extension; 5 only the hip joint allows additional movements AND e.g. adduction / abduction / horizontal flexion / horizontal extension; 6 hip is a tighter fit OR knee is a looser fit; 7 hip has more ligaments than the knee OR knee has fewer ligaments than the hip; 8 hip joint allows movements in 3 planes AND the knee joint allows movement in 1 plane ;					5
1(b)	Each classification must be justified using a specific example from triple jump for credit. 1 (serial) a number of (discrete) jumps linked together / in a sequence; 2 (gross) jumping / running / hopping involves large muscle groups of the legs; 3 (low organisation) can be (easily) broken down into separate subroutines AND , e.g. running / jumping OR run up / jumps can be practised in isolation; Accept other suitable justifications.					3
1(c)	Descriptions must be applied to a triple jump for credit. 1 (attention) performer must pay attention to / focus on a demonstration of a triple jump; 2 (retention) performer must retain / remember the triple jump (in their memory) OR be able to recall it OR performer creates a mental image of the triple jump; 3 (motor reproduction) performer must be (physically) able to reproduce / attempt the triple jump; 4 (motivation) performer needs to be motivated to attempt / practise the triple jump;					4

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Question	Answer	Marks
1(d)	2 marks for any 2 of: 1 to reduce body weight / mass; 2 to jump further / run up faster; 3 to increase power to weight ratio; 4 to improve range of movement / flexibility;	2

Question	Answer	Marks
2(a)	5 marks for any 5 of: 1 movement of carbon dioxide AND oxygen (across a membrane); 2 ... between a muscle / myoglobin AND the (blood) capillaries / haemoglobin; 3 partial pressure is the pressure a gas exerts in a mixture of gases; 4 gases diffuse from an area of high pressure to an area of low pressure; 5 down a diffusion gradient; 6 in blood / capillaries the partial pressure of oxygen is high OR in blood / capillaries the partial pressure of carbon dioxide is low; 7 in a muscle / myoglobin the partial pressure of oxygen is low OR in a muscle / myoglobin the partial pressure of carbon dioxide is high; 8 oxygen diffuses from blood / capillaries to a muscle / myoglobin OR carbon dioxide diffuses from a muscle / myoglobin to the blood / capillaries; 9 myoglobin has a greater affinity for oxygen than haemoglobin;	5
2(b)	2 marks for any 2 of: 1 pectoralis minor contracts to increase inspiration (during exercise); 2 pectoralis minor relaxes to allow expiration; 3 causes greater increase in volume of the thoracic cavity OR causes a greater decrease in pressure in the lungs; 4 moves the ribs up / out;	2

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Question	Answer	Marks
3(a)	4 marks for any 4 of: 1 line starts from origin; 2 line with positive gradient OR steep positive gradient; 3 ... followed by a more gradual increase / less steep positive gradient; 4 flat line / line with no gradient; 5 negative gradient to bottom of y-axis (showing sprinter has stopped); Credit curves or straight lines for changing speed aspects.	4
3(b)	1 movement of the sprinter in a straight line OR all body parts moving in the same direction; 2 caused by an external force applied through centre of mass;	2
3(c)	Answers must be applied to a sprinter in a 100-metre race. 1 (reaction time) the time between the bang of the starter's pistol AND the start of the movement to leave the blocks / begin running; 2 (response time) the time between the bang of the starter's pistol AND the end of the race; 3 (movement time) the time between the start of the movement to leave the blocks AND the end of the race; Accept alternative wording.	3
3(d)(i)	(sprinter) A;	1
3(d)(ii)	0.32 (seconds);	1
3(d)(iii)	3.07(%);	1

Question	Answer	Marks		
4	<table><tr><td>1 negative (transfer);</td></tr><tr><td>2 retroactive (transfer);</td></tr></table>	1 negative (transfer);	2 retroactive (transfer);	2
1 negative (transfer);				
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Question	Answer	Marks
5(a)	2 marks for any 2 of: 1 at the top of the performance pyramid OR has reached excellence; 2 are professionals OR are paid to play football; 3 few performers reach this level;	2
5(b)	3 marks for any 3 of: 1 medicine; 2 biomechanics; 3 rehabilitation; 4 nutrition; 5 psychology; Accept other suitable types of science support.	3

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Question	Answer	Marks
5(c)	6 marks for 6 of: 1 cardiac control centre receives information from receptors; (sub-max. 2 marks for points 2 to 5) 2 chemoreceptors detect changes in acidity / carbon dioxide / lactic acid; 3 mechanoreceptors / proprioceptors detect changes in movement; 4 baroreceptors detect changes in blood pressure; 5 thermoreceptors detect changes in temperature; 6 action of the sympathetic nervous system; 7 ... via the accelerator / cardiac nerve; 8 ... release of noradrenaline; 9 ... increases stimulation of the sinoatrial node / increases heart rate; 10 action of the parasympathetic nervous system 11 ... via the vagus nerve; 12 ... release of acetylcholine; 13 ... decreases stimulation of the sinoatrial node / decreases heart rate; Points must be made in the correct context for credit.	6
5(d)	5 marks for any 5 of: 1 the display / environment AND e.g. position of passer; 2 sensory information AND e.g. see the ball; 3 using sense organs AND e.g. using the eyes; 4 perception / selective attention AND e.g. recognising that a ball is coming towards you; 5 decision making AND e.g. selecting how to receive the ball; 6 the effector mechanism AND e.g. impulses are sent to the relevant muscles of the body / leg; 7 the response AND e.g. is the ball is received / controlled; 8 feedback is received AND e.g. the outcome of the control / touch; OR feedback is used AND e.g. to support future responses to receiving a pass; Explanations must use the example of receiving a pass in association football.	5

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Question	Answer	Marks
5(e)	3 marks for any 3 of: 1 betting; 2 match fixing; 3 insider information; 4 tanking (deliberately losing a match); Accept other suitable forms of competition manipulation that may occur in association football.	3

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Question	Answer	Marks																								
6(a)	6 marks for 6 of: (similarities sub-max. 4 marks) sport and physical education both... 1 provide the values of fair play / sportsmanship; 2 develop health / fitness / well-being; 3 develop enjoyment through participation; 4 involve skill development / understanding strategies / creativity; 5 develop social skills / teamwork / work with others / cooperation; 6 create a competitive environment / learn to win and lose; 7 give confidence / success; (differences sub-max. 4 marks) <table border="1"> <thead> <tr> <th></th><th>sport</th><th>physical education</th></tr> </thead> <tbody> <tr> <td>8</td><td>always competitive</td><td>not all elements are competitive;</td></tr> <tr> <td>9</td><td>done after school / at a club / extracurricular</td><td>done in school / in lessons;</td></tr> <tr> <td>10</td><td>voluntary / for selected performers</td><td>compulsory / for everyone;</td></tr> <tr> <td>11</td><td>coach-led</td><td>teacher-led;</td></tr> <tr> <td>12</td><td>generally more extrinsic rewards</td><td>fewer extrinsic rewards;</td></tr> <tr> <td>13</td><td>serious / commitment</td><td>non-serious;</td></tr> <tr> <td>14</td><td>may not involve learning / morals / ethics / fair play</td><td>involves learning / morals / ethics / fair play;</td></tr> </tbody> </table> Accept other suitable similarities and differences.		sport	physical education	8	always competitive	not all elements are competitive;	9	done after school / at a club / extracurricular	done in school / in lessons;	10	voluntary / for selected performers	compulsory / for everyone;	11	coach-led	teacher-led;	12	generally more extrinsic rewards	fewer extrinsic rewards;	13	serious / commitment	non-serious;	14	may not involve learning / morals / ethics / fair play	involves learning / morals / ethics / fair play;	6
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Question	Answer	Marks
6(b)	4 marks for any 4 of: 1 growth in media interest; 2 growth in public interest OR increase in participation; 3 growth in spectatorism; 4 advertising; 5 sponsorship; 6 professionalism / professional approach to sport; Accept other factors that lead to the commercialisation of sport.	4