CAMBRIDGE
International Education

Cambridge IGCSE™

PHYSICAL EDUCATION **0413/11**

Paper 1 Theory **October/November 2024**

MARK SCHEME

Maximum Mark: 100

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 2024 series for most Cambridge IGCSE, Cambridge International A and AS Level components, and some Cambridge O Level components.

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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.

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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.

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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 mark for stage of learning and 1 mark for each description of characteristic (max. 3 marks.). stage of learning: cognitive; inconsistent performance / technique / large number of errors / mistakes; consciously thinking about what they are doing; needs to have skills broken down into sub-routines; beginner / trying to understand the demands of the skill; trial and error; lacks fluency / coordination; movements are slow; needs a lot of guidance / help from a coach; learning new skills; Accept other relevant characteristics.	**4**
1(b)	1 mark for each type of guidance (max. 3 marks). 1 mark for each relevant description of an example (max. 3 marks), for example: visual; coach may demonstrate the back crawl (to enable the skill to be seen) / coach may display posters of elite swimmers performing a diving start / coach may show a video of the breaststroke / coach may use flags above a lane to help the performer know when to turn; verbal; coach may give instructions to the swimmer about how to perform a turn / coach may remind the swimmer of the pace to swim at beforehand / a coach may use questioning to assess the level of understanding of breathing technique / a coach may provide accurate descriptions of front crawl; manual; a coach may adjust the physical position of a swimmer, e.g. move the swimmer's arms in breaststroke / a coach may help a swimmer to develop a feeling of their position in the water, e.g. by supporting the swimmer's hips; mechanical; a coach may use a float to help isolate breaststroke kicking technique; Accept other examples of each type of guidance.	**6**

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<table>
<tr><th>Question</th><th>Answer</th><th>Marks</th></tr>
<tr><td>2(a)(i)</td><td>1 mark for each name.

A: aorta;
B: vena cava;</td><td>2</td></tr>
<tr><td>2(a)(ii)</td><td>1 mark for each difference.

<table>
<tr><td>type of blood vessel A</td><td></td><td>type of blood vessel B</td></tr>
<tr><td>thick / muscular walls</td><td>AND</td><td>thin / less muscular walls;</td></tr>
<tr><td>narrow lumen</td><td>AND</td><td>wide lumen;</td></tr>
<tr><td>no valves present</td><td>AND</td><td>contains valves;</td></tr>
<tr><td>carries oxygenated blood</td><td>AND</td><td>carries deoxygenated blood;</td></tr>
<tr><td>takes blood away from the heart</td><td>AND</td><td>brings blood back to the heart;</td></tr>
<tr><td>carries blood at high pressure</td><td>AND</td><td>carries blood at a lower pressure;</td></tr>
</table>

Accept other relevant differences.</td><td>3</td></tr>
<tr><td>2(b)</td><td>1 mark for each part.

X: right atrium;
Y: right ventricle;</td><td>2</td></tr>
<tr><td>2(c)</td><td>1 mark for the structure and 1 mark for function.

(structure): valve;

(function): prevent the backflow of blood OR keeps blood flowing in correct direction;</td><td>2</td></tr>
</table>

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Question	Answer	Marks
2(d)	1 mark each for: heart size increases / thicker walls / (cardiac) hypertrophy; heart becomes stronger / beats more powerfully / stronger contractions; resting pulse rate decreases / resting heart rate decreases / bradycardia; stroke volume increases / able to pump more blood per contraction; cardiac output can increase / able to pump more blood every minute; less chance of (coronary) heart disease; heart returns to resting rate more quickly / recovers after exercise more quickly; Accept other relevant long-term effects on the heart.	**2**

Question	Answer	Marks
3	1 mark for each force identified. muscular force / force applied at release; air resistance; gravity; Accept other appropriate forces.	**3**

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Question	Answer	Marks
4(a)	1 mark for each type of feedback (2 marks max.). 1 mark for each description of these (2 max. marks). extrinsic; (description of example) coach telling the performer about their technique of shooting / a coach using words of encouragement or praise for a good shot / interception / a coach shouting coaching points after the performer misses the basket due to poor technique; knowledge of performance; (description of example) coach telling a player about their strengths / weaknesses when shooting; knowledge of results; (description of example) coach telling performer number of successful passes / shots at the end of a set of attempts; Accept other relevant examples.	**4**
4(b)	1 mark for each explanation, for example: highlight strengths / weaknesses so help performers improve / adjust training; helps to correct errors so a performer will know how to improve; helps motivate a performer so will want to continue to improve / learn / work harder; stops a performer from practising incorrect techniques so helps avoid bad habits / avoids poor performance in game situation; prevents practising incorrect technique so less time is wasted; helps a performer to understand their own errors and mistakes so they start to develop intrinsic feedback; reduces use of poor technique so helps reduce the risk of injury; Accept other relevant explanations.	**2**
4(c)	2 marks for: age; gender; social / cultural influences; Accept other relevant factors.	**2**

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Question	Answer	Marks
4(d)	1 mark for each strategy. 2 marks max. for each area, for example: (promotion): more disabled role models; advertise facilities / disabled activities / clubs available; use of media to raise awareness; national / local campaigns to encourage disabled participation in sport; improve awareness of disability in schools through speakers / talks; posters etc. to provide better education on the benefits or opportunities of regular sports participation; (provision): provide more facilities; provide adapted / specialist equipment / use of technology; employ people to aid disabled performers; provide specialist coaches / coaches with knowledge or experience of working with disability groups; provide competitions for disability groups; provide more (local) clubs / mixed able bodied and disabled groups working together or adapted games / rules; provide more financial support; provide activities / sessions for disabled players only; provide more changing facilities suitable for disabled players; provide structured disabled sports pathways; (access): adapt facilities, e.g. ramps / sliding doors / wide doors / lifts / signs in braille / hearing loops etc.; arrange transport to and from venues; parking spaces provided close to venue / more parking spaces for disabled people; cheaper facilities for sport or reduced entry costs for disabled players; more facilities that cater for disability groups; *Accept other relevant strategies as appropriate to area.*	**6**

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Question	Answer	Marks
5(a)	1 mark for each identification. **A** to **B** at the performer's left knee: flexion; **A** to **B** at the performer's left shoulder: flexion; **B** to **C** at the performer's right elbow: extension; Accept other suitable types of movement.	**3**
5(b)	1 mark for each identification of stage (3 marks max.). 1 mark for each example (3 marks max.). (A) input; (example) seeing where the opponent is standing on court / feeling racket in hands; (B) decision-making; (example) making sense / analysing the information received in input and choose appropriate response, e.g. pace of serve / direction of serve / type of serve / type of ball toss; (C) feedback; (example) adjustment of technique if previous serves were faults, e.g. too wide / double fault **OR** continue to serve the same way if successful, e.g. won the point / ace served; Accept any other suitable examples.	**6**
5(c)(i)	1 mark each for: glucose + **oxygen;** → carbon dioxide + **water**;	**2**
5(c)(ii)	1 mark for: glucose → **lactic acid**;	**1**
5(d)	1 mark for each respiration type. (during a tennis serve) anaerobic; (when taking part in a long tennis rally) aerobic;	**2**

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<table>
<tr><th>Question</th><th>Answer</th><th>Marks</th></tr>
<tr><td>6(a)</td><td>1 mark for each named bone (3 marks max.) and 1 mark for each classification (3 marks max.):

<table>
<tr><td>bone</td><td>name</td><td>classification</td></tr>
<tr><td>A</td><td>cranium;</td><td>flat;</td></tr>
<tr><td>B</td><td>pelvis;</td><td>flat;</td></tr>
<tr><td>C</td><td>femur;</td><td>long;</td></tr>
</table></td><td>6</td></tr>
<tr><td>6(b)</td><td>1 mark each for:

provides shape / support;
muscle attachment for movement;
protection;
(red) blood (cell) production;</td><td>3</td></tr>
</table>

Question	Answer	Marks
7(a)	1 mark for each different suggestion. new or improved stadia / training facilities; home advantage; increase in national pride / feel good factor; increased employment; lasting legacy; improved infrastructure / better transport systems; increase in participation; redevelopment of areas; increased revenue / more money coming into the country; Accept other relevant advantages.	**3**

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Question	Answer	Marks
7(b)	1 mark each for: increase pressure to win / succeed or additional workload / stress on team to do well; can be withdrawn / team left with no money to complete fixtures / over reliance on funding; lack of freedom / choice for the team, e.g. choice of team equipment / facilities / kit / sponsor may influence name / team colours / times of training etc.; expectation of attendance at sponsor events / sponsors too controlling so potentially reduced training; team could be linked with immoral / unethical / unhealthy / alcohol / fast food products etc.; only certain / high-profile teams receive best sponsorship **OR** minority / smaller teams left behind / get less sponsorship; team may become larger / more successful and current sponsor may not be able to provide sufficient funding; Accept other relevant disadvantages of sponsorship for a sports team.	**2**

Question	Answer	Marks
8(a)	1 mark for: Borg (scale);	**1**
8(b)	1 mark for each description. goes red; heat control / increased temperature; sweating; Accept other relevant short-term effects of exercise.	**2**

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Question	Answer	Marks
9(a)	1 mark for: weight (training);	**1**
9(b)	1 mark for: spotter / to spot;	**1**
9(c)	1 mark for each advantage (2 marks max.) and 1 mark for each disadvantage (2 marks max.), for example: (advantages) easy to overload / easy to show progression; able to target / focus on specific muscle groups; improve specific components of fitness, e.g. improve strength / muscular endurance / power; increases muscle size; reduces body fat; strengthens bone / reduces osteoporosis; (disadvantages) can be expensive due to cost of equipment; requires good technique / form to avoid injury; specialist equipment is needed; may be unable to work alone; Accept other relevant advantages and disadvantages.	**4**
9(d)	1 mark for identifying the agonist. 1 mark for identifying the antagonist. 2 marks max. for description. agonist is biceps; antagonist is triceps; (description): biceps **OR** agonist **AND** shorten / contract; triceps **OR** antagonist **AND** relaxes / lengthens;	**4**

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Question	Answer	Marks
10(a)	1 mark each for: winding; cuts; grazes; blisters; Accept other relevant minor injuries.	**3**
10(b)	1 mark for each example: post protectors; mats; ropes; harness; gumshield; helmet; face mask; pads; box; goggles; back protectors; life jacket; Accept other relevant examples.	**2**

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Question	Answer	Marks
10(c)	1 mark for each part of RICE and 1 mark for each different reason. R: rest; to avoid further damage or injury / not make the injury worse; I: ice; reduces pain / numbs the area / reduces swelling / reduces blood flow to injured area; C: compression; to reduce swelling / to reduce pain / slows blood flow to the injured area / immobilise area / give support; E: elevation to reduce swelling / reduce blood flow to injured area / reduces pain / blood flow must go against gravity;	**8**

Question	Answer	Marks
11	1 mark each for level: elite; foundation; performance;	**3**

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Question	Answer	Marks
12(a)	1 mark for each advantage (2 marks max.) and 1 mark for each disadvantage (2 marks max.). (advantages) encourages general interest or raises awareness / education; can highlight / introduce them to new sports / minority sports; inform or gives information, e.g. about how or where to participate / perform; may encourage or give confidence to take up sport; entertaining when listening to commentary of games or sporting topics; relatively inexpensive / no monthly subscriptions / maybe cheaper than other media sources; can listen to live events (even if cannot afford tickets / viewing subscription); produces role models / sport guests who may inspire participation; easier to setup than other types of media; able to listen to sport whilst performing other tasks; may allow interaction through phone-ins; (disadvantages) unable to show pictures / more difficult to visualise; fake news / incorrect information; may not have constant / clear / sufficient signal; may have number of advertisements / can be boring; can lead to sedentary lifestyles / couch-potato syndrome / hinder participation; coverage can be limiting / minority sports or disabled sports do not get same coverage / focus on more popular sports; hearing about injuries etc. may cause fear of activity / fear of injury; not suited for all sports / hard to describe some sports (quickly enough); Accept other relevant advantages / disadvantages.	**4**
12(b)	1 mark for: television; internet; social media; print;	**1**

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