
PHYSICAL EDUCATION

9396/13

Paper 1

October/November 2019

MARK SCHEME

Maximum Mark: 90

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 2019 series for most Cambridge IGCSE™, Cambridge International A and AS Level components and some Cambridge O Level components.

This document consists of **9** printed pages.

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 descriptors 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.

Question	Answer	Marks
1(a)	4 marks for 4 any of: 1 the agonist contracts AND the antagonist relaxes; 2 plantar flexion AND dorsiflexion; 3 gastrocnemius / soleus AND tibialis anterior; 4 (plantarflexion) agonist / contraction of gastrocnemius / soleus OR (dorsi flexion) agonist / contraction of tibialis anterior; 5 (plantarflexion) antagonist / relaxation of tibialis anterior OR (dorsi flexion) antagonist / relaxation of gastrocnemius / soleus; 6 coordination of two muscle actions allows smooth movement at joint;	4
1(b)	5 marks for: 1 concentric; 2 abduction; 3 deltoid; 4 extension; 5 triceps brachii;	5
1(c)	6 marks for any 6 of: 1 nerve / electrical impulses / wave of depolarisation / action potential starts at sinoatrial / SA node; 2 impulse passes through atria to the atrioventricular / AV node / causes delay; 3 atrial systole / contraction; 4 blood forced out of both atria / flows into ventricles; 5 during ventricular diastole / relaxation; 6 impulse passes down bundle of His; 7 impulse spreads through ventricles via Purkinje / Purkyne fibres; 8 ventricular systole / contraction; 9 atrioventricular / AV valves close to prevent backflow; 10 blood forced out of both ventricles; 11 semilunar valves close to prevent backflow; <i>Explanations must be made in context.</i>	6
1(d)	4 marks for any 4 of: 1 oxygenated blood leaves the left ventricle; 2 via aorta; 3 supplies tissues / muscles / eq.; 4 deoxygenated blood returns to right atrium; 5 via (inferior / superior) vena cava;	4
1(e)	2 marks for: 1 (haemoglobin carries oxygen) in blood; 2 (myoglobin carries oxygen) to mitochondria / the muscles / eq.;	2

Question	Answer	Marks
1(f)	3 marks for any 3 of: 1 contraction of leg / arm / relevant skeletal muscle; 2 squeeze / compress / eq. veins between muscles (and bones); 3 blood forced towards heart; 4 action of valves preventing backflow of blood;	3
1(g)(i)	4 marks for any 4 of: 1 diaphragm contracts AND flattens / lowers; 2 external intercostals; 3 the ribs move upwards / outwards; 4 increased volume of thoracic / chest cavity / lungs; 5 pleural membrane (of lungs) attached to thoracic wall / eq.; 6 pressure within lungs drops / lower than in atmosphere; 7 air moves from high to low pressure;	4
1(g)(ii)	2 marks for any 2 of: 1 external intercostals / diaphragm contracts more forcefully; 2 use of pectoralis minor / scalenes / sternocleidomastoid; 3 (further) increasing the volume of thoracic / chest cavity / lungs; 4 greater pressure reduction in lungs / chest / thoracic cavity;	2

Question	Answer	Marks
2(a)	4 marks for: 1 (high organisation skill) complex number of linked phases / cannot be broken down and practised separately / lots of processing / decisions; 2 for example, golf drive; 3 (low organisation skill) easily broken down into parts / made up of discrete phases that can be practised separately; 4 for example, triple jump; <i>Accept alternative classifications if explained.</i>	4
2(b)	4 marks for any 4 of: 1 learning based on S/R bond relationship; 2 trial and error learning; 3 manipulating the environment to obtain desired response; 4 e.g. use of target areas / mechanical feeders / equipment; 5 shaping behaviour; 6 use of reinforcement to bring about desired response / satisfier / rewards / praise / self-satisfaction; 7 use of punishment to decrease probability of undesired response / annoyer;	4
2(c)	3 marks for any 3 of: 1 insight learning / discovery learning / Gestaltist theory; 2 performer experiences the whole movement / holistic / wholeness; 3 involves thinking about the solution to a problem / learner develops an understanding / requirements of skill / eureka moment; 4 awareness of link between sub-routines / recognise relationship between stimulus and response / learner draws together many variables; 5 modify / adjust actions based on previous experience / environment;	3
2(d)	3 marks for any 3 of: <i>Sub-max. of 2 without an example of sport-specific skill. No mark for the example.</i> 1 there is no feedback acted upon / no adjustments are made; 2 due to no time / quick / fast / reactive / ballistic movement; 3 performer relies on motor programmes to be run / autonomous; 4 memory trace starts movement; 5 a single decision is made; 6 outside of / no conscious control;	3
2(e)(i)	4 marks for any 4 of: 1 (knowledge of) initial / environmental conditions; 2 (knowledge of) response specifications; 3 sensory consequences; 4 movement / response outcomes; 5 recall AND recognition schema;	4

Question	Answer	Marks
2(e)(ii)	4 marks for any 4 of: 1 learn basic skills before learning complex skills; 2 varied practice conditions / eq.; 3 provide plenty of information; 4 practice relevant to game / conditioned games; 5 (frequent) feedback; 6 tasks should be challenging; 7 include transferable information from other sports / ensure performers are aware of transfer possibilities; 8 slow-motion practice / video analysis / visual aids / guidance;	4
2(f)	4 marks for 4 of: (sub-max. 3 marks for perception) 1 (perception) interprets / judges information; 2 (perception) involves DCR process / detection of stimuli; 3 comparison to memory; 4 recognition of stimuli; 5 selective attention / filtering information occurs; 6 (effector mechanism) selects motor programme; 7 (effector mechanism) organises response / relays decisions to muscular system;	4
2(g)	4 marks for any 4 of: 1 increases in motivation / drive / arousal result in increases of probability of good performance / performance = habit · drive; 2 linear / straight line / proportional relationship / drawn as diagram; 3 but, not realistic – cannot keep improving; 4 increase in arousal = increase in likelihood of dominant response; 5 if dominant response is well-learned / expert performer leads to improved performance (because of high arousal); 6 if dominant response not well-learned / novice performer leads to poor performance (because of high arousal);	4

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3(a)(i)	4 marks for any 4 of: 1 choose whether to take part or not / voluntary; 2 fun / enjoyment; 3 social / with friends; 4 takes part in leisure time; 5 standard of skills is not important / no training needed / non-serious outcome / low physical demand; 6 non-competitive / no winners / no losers; 7 few officials / few rules; 8 limited structure / limited organisation; 9 for fitness / health; 10 flexible time involvement / variety of opportunities;	4																
3(a)(ii)	4 marks for any 4 of: <table border="1" data-bbox="308 781 1326 1440" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;"></th> <th style="width: 50%;"></th> </tr> <tr> <th style="text-align: center;">physical education</th> <th style="text-align: center;">physical recreation</th> </tr> </thead> <tbody> <tr> <td>1 compulsory / moral obligation</td> <td>voluntary / choice / no moral obligation;</td> </tr> <tr> <td>2 school time / lessons</td> <td>activity done in leisure time / relaxed / casual;</td> </tr> <tr> <td>3 formal teaching and learning environment / assessment / serious</td> <td>informal / for fun / enjoyment;</td> </tr> <tr> <td>4 teacher / in authority</td> <td>self-regulated / individual controls activity / safety;</td> </tr> <tr> <td>5 highly structured / pre-planned times / sessions / activities / rules</td> <td>limited organisational structure / limited rules;</td> </tr> <tr> <td>6 foundation level on the performance pyramid</td> <td>participation level on the performance pyramid;</td> </tr> </tbody> </table> <p><i>Allow other correct differences.</i></p>			physical education	physical recreation	1 compulsory / moral obligation	voluntary / choice / no moral obligation;	2 school time / lessons	activity done in leisure time / relaxed / casual;	3 formal teaching and learning environment / assessment / serious	informal / for fun / enjoyment;	4 teacher / in authority	self-regulated / individual controls activity / safety;	5 highly structured / pre-planned times / sessions / activities / rules	limited organisational structure / limited rules;	6 foundation level on the performance pyramid	participation level on the performance pyramid;	4
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3(a)(iii)	4 marks for 4 of: <i>If no example max. 1 mark per area.</i> (sub-max. 2 marks for subjective danger) 1 danger which the performer thinks / perceives is going to happen; 2 e.g. fearing falling over / worried about rope breaking; 3 depends on level of experience / ability; (sub-max. 2 marks for objective danger) 4 danger from natural environment / elements over which performer has little / no control / actual / real risk; 5 e.g. avalanche / weather; 6 the more skilled you are, the more likely you are to encounter objective danger, e.g. wilderness areas;	4																

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3(b)	<p>4 marks for any 4 of:</p> <table border="1" data-bbox="304 315 1329 1827"> <thead> <tr> <th data-bbox="304 315 684 378">factor</th> <th data-bbox="684 315 1329 378">explanation, for example:</th> </tr> </thead> <tbody> <tr> <td data-bbox="304 378 684 477">1 (family / peers / friends)</td> <td data-bbox="684 378 1329 477">influences can be positive or negative / level of support;</td> </tr> <tr> <td data-bbox="304 477 684 611">2 (age)</td> <td data-bbox="684 477 1329 611">suitable provision for any over 60's / young people / may be tendency for change of activity as people age;</td> </tr> <tr> <td data-bbox="304 611 684 745">3 (gender)</td> <td data-bbox="684 611 1329 745">men may be more likely to participate than women / stereotyping of women / some sports more male / female appropriate;</td> </tr> <tr> <td data-bbox="304 745 684 844">4 (ability)</td> <td data-bbox="684 745 1329 844">involvement limited by fitness / talent ID / pathways in place;</td> </tr> <tr> <td data-bbox="304 844 684 943">5 (disability)</td> <td data-bbox="684 844 1329 943">limited / less access / may have low self-esteem / need adapted sports;</td> </tr> <tr> <td data-bbox="304 943 684 1077">6 (race / culture)</td> <td data-bbox="684 943 1329 1077">some ethnic groups still discriminate / stereotyping, e.g. black athletes may be sprinters;</td> </tr> <tr> <td data-bbox="304 1077 684 1176">7 (religion)</td> <td data-bbox="684 1077 1329 1176">religion may inhibit, e.g. dress code / parental aspirations;</td> </tr> <tr> <td data-bbox="304 1176 684 1274">8 (government status / attitude)</td> <td data-bbox="684 1176 1329 1274">policies / political influences in country may affect involvement;</td> </tr> <tr> <td data-bbox="304 1274 684 1408">9 (previous experience)</td> <td data-bbox="684 1274 1329 1408">enjoyed or disliked Physical Education / previous success / self-esteem / self-confidence;</td> </tr> <tr> <td data-bbox="304 1408 684 1471">10 (geography)</td> <td data-bbox="684 1408 1329 1471">where you live may limit opportunity / facilities;</td> </tr> <tr> <td data-bbox="304 1471 684 1534">11 (role models)</td> <td data-bbox="684 1471 1329 1534">involvement increased by presence / influence;</td> </tr> <tr> <td data-bbox="304 1534 684 1668">12 (media)</td> <td data-bbox="684 1534 1329 1668">amount of exposure to different sports / how media treats sports people may influence involvement;</td> </tr> <tr> <td data-bbox="304 1668 684 1731">13 (employment)</td> <td data-bbox="684 1668 1329 1731">because sport can provide employment;</td> </tr> <tr> <td data-bbox="304 1731 684 1830">14 (availability of time)</td> <td data-bbox="684 1731 1329 1830">some sports require lots of time / you need time to be able to participate;</td> </tr> </tbody> </table> <p data-bbox="304 1861 767 1895"><i>Accept other relevant explanations.</i></p>	factor	explanation, for example:	1 (family / peers / friends)	influences can be positive or negative / level of support;	2 (age)	suitable provision for any over 60's / young people / may be tendency for change of activity as people age;	3 (gender)	men may be more likely to participate than women / stereotyping of women / some sports more male / female appropriate;	4 (ability)	involvement limited by fitness / talent ID / pathways in place;	5 (disability)	limited / less access / may have low self-esteem / need adapted sports;	6 (race / culture)	some ethnic groups still discriminate / stereotyping, e.g. black athletes may be sprinters;	7 (religion)	religion may inhibit, e.g. dress code / parental aspirations;	8 (government status / attitude)	policies / political influences in country may affect involvement;	9 (previous experience)	enjoyed or disliked Physical Education / previous success / self-esteem / self-confidence;	10 (geography)	where you live may limit opportunity / facilities;	11 (role models)	involvement increased by presence / influence;	12 (media)	amount of exposure to different sports / how media treats sports people may influence involvement;	13 (employment)	because sport can provide employment;	14 (availability of time)	some sports require lots of time / you need time to be able to participate;	4
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Question	Answer	Marks
3(c)	<p>4 marks for:</p> <ol style="list-style-type: none"> 1 (sportsmanship) conforming to the rules, spirit and etiquette of a sport; 2 e.g. kicking ball out when player injured / admitting fouls in golf; 3 (gamesmanship) bending rules to gain an advantage; 4 e.g. time wasting when winning / taking a break in play to re-prepare psychologically / 'sledging'; 	4
3(d)	<p>5 marks for any 5 of:</p> <ol style="list-style-type: none"> 1 raise awareness through advertising / publicity / taster days / campaigns; 2 make access to facilities affordable / more clubs; 3 develop schemes in inner-city / deprived / rural areas; 4 use sport personalities / role models; 5 more scouts / coaches; 6 grass-roots provision / focus on target groups; 7 award schemes / extrinsic motivation; 8 modified / adapted sports; 9 improve links within schools / school–club links; 10 change attitudes / prejudice / discrimination within sport / change structural barriers, e.g. membership restrictions; <p><i>Credit specific examples where appropriate.</i></p>	5
3(e)	<p>5 marks for any 5 of:</p> <ol style="list-style-type: none"> 1 increase in deviant behaviour / cheating / doping / violent play; 2 not all sports benefit / money mainly goes to popular sports / minority sports suffer; 3 sport loses control / organisation of events / corporate hospitality taking tickets / matches spread over weekend / changes to start times; 4 over-reliance on non-spectator / TV money as income / fewer spectators at event; 5 expense of TV subscriptions / ticket prices / replica kits; 6 rules altered / changed; 7 loss of tradition; 8 performers forced to turn from amateur to professional / become commodities; 9 greater pressure / expectation on performers to win / win-at-all costs ethic / Lombardian ethic; 	5