

MARK SCHEME for the October/November 2014 series

9396 PHYSICAL EDUCATION

9396/12

Paper 1, maximum raw mark 90

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 will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the October/November 2014 series for most Cambridge IGCSE[®], Cambridge International A and AS Level components and some Cambridge O Level components.

Section A
Applied Anatomy and Physiology

(a) (i) 5 marks for 5 of:

	type of muscle contraction	type of movement occurring	agonist muscle
elbow joint	Isotonic / concentric	Extension	Triceps brachii
wrist joint		Flexion	Wrist flexors

(ii) 2 marks for 2 of:

1. Elbow – humerus + radius / ulna
2. Wrist – radius, ulna and carpals

(iii) 5 marks for 5 of:

(sub-max of 1 mark)

1. Hinge joint

(sub-max of 4 marks)

2. Shape of the articular surface – allow bones to fit together
3. Ligaments – attach bone to bone / restrict movement
4. Muscles around the joint – support bones / restrict movement
5. Joint capsule – lined with synovial membrane
6. Synovial membrane – secretes synovial fluid
7. Synovial fluid – provides lubrication
8. Hyaline/articular cartilage – prevents friction / stops bone rubbing together
9. Pads of fat – fills spaces, no free movement

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(b) (i) 4 marks for 4 of:

1. In lungs – gaseous exchange / carbon dioxide removed / oxygen absorbed
2. To pulmonary vein – transports oxygenated blood
3. To left atrium – fills with blood / diastole
4. Atrial systole / forces blood into ventricle
5. Through atrioventricular valves / bicuspid – forced open due to pressure
6. To left ventricle – fills with blood / diastole
7. Ventricular systole / pumps blood into aorta
8. Through semi-lunar / aortic valves

(ii) 6 marks for 6 of:

(sub-max of 2 marks per section)

Point A

1. Anticipatory rise
2. Caused by release of adrenaline / noradrenaline
3. Causes SA Node to increase heart rate

Point B

4. Receptors detect need for removing carbon dioxide and increase heart rate
5. Detected by chemoreceptors
6. Higher VO_2 / more O_2 being used

Point C

7. Recovery period / EPOC / oxygen debt
8. Fast decline back to resting HR
9. Recovery time depends on intensity and duration of exercise

(c) (i) 4 marks for 4 of:

1. Minute ventilation – volume of air inspired or expired / exchanged per minute / tidal volume \times breathing rate
2. (Large) increase during exercise
3. Residual volume – volume of air left in the lungs after maximal expiration
4. Stays the same

(ii) 4 marks for 4 of:

1. Lower partial pressure in atmosphere / less oxygen available at altitude
2. Reduced partial pressure of oxygen in the (arterial) blood
3. Reduction in the pressure gradient in lungs
4. Gaseous exchange more difficult / less effective
5. Less oxygen binds to haemoglobin / lower saturation
6. Carbon dioxide builds up at faster rate
7. Reduced performance for endurance events
8. At altitude not as much oxygen delivered to working muscles

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Section B
Acquiring, Developing and Performing Movement Skills

(a) 2 marks for 2 of:

1. Abilities innate, skills learned
2. Skills need specific abilities in order to complete successfully
3. Abilities underpin skills / foundation or building blocks of skills
4. Lack of ability can be a limiting factor in the quality of skills

(b) 4 marks for 4 of:

1. Closed – environment is stable / no interference from other performers / environment is predictable / pre-set routine / minimal adjustments need to be made / decisions are pre-planned / few decisions
2. Discrete – clear beginning and end / completed in a short space of time / skill must start again to be repeated
3. Internally paced – performer controls the speed of movement / performer decides when to start the movement
4. High organisation – difficult to break down / sub-routines difficult to separate from whole movement / practised as part of whole movement

(c) 6 marks for 6 of:

Principles:

1. Insight learning / discovery learning
2. Involves thinking about the solution to a problem
3. Performer develops understanding of the problem
4. Awareness of link between sub-routines / understand relationship between Stimulus and Response
5. Modify actions based on previous experience
6. Performer experiences the whole movement not just sub-routines

Advantages:

7. Performer able to alter their actions based on the current situation
8. Performer able to develop their own strategies
9. More flexible method of learning than operant conditioning / conditioning theories of learning
10. Helps motivation of the performer

(d) 4 marks for 4 of:

(sub-max of 1 mark)

1. Associative (Phase of learning)

(sub-max of 3 marks)

2. Allow time to practise
3. Provide extrinsic feedback
4. Encourage development of intrinsic feedback
5. Provide reinforcement / praise / rewards
6. Provide guidance – manual / mechanical / verbal / visual
7. Focus on gross / major errors of technique initially
8. As performer progresses more specific errors can be highlighted
9. Mental rehearsal / imagery / visualisation

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(e) 2 marks for 2 of:

(definition and example required for one mark)

1. (Positive feedback) – encouragement to repeat the skill / information to confirm the skill is correct / form of reinforcement, e.g. coach saying 'well done', visually seeing the ball hit the target or equiv.
2. (Negative feedback) – used to stop the skill being repeated / information provided to explain the skill is incorrect, e.g. coach highlighting poor technique / critical of technique or equiv.

(f) 4 marks for 4 of:

(sub-max 1 mark)

1. (Intrinsic motivation) – pride / self-satisfaction / personal achievement / enjoyment or equiv.

(sub-max 3 marks)

2. Combine with extrinsic motivation
3. Make training enjoyable / fun / variable / competitive
4. Set realistic goals / targets
5. Ensure success
6. Highlight personal success / progress / avoid comparisons with other performers

(g) 4 marks for 4 of:

(sub-max of 1 mark)

1. Example, high jump made-up of run-up, take-off, flight and landing or equiv.

(sub-max 3 marks)

2. Series of sub-routines / set of neural commands
3. Completed in the correct sequence / order
4. Stored in long term memory
5. But run from short term memory
6. Effector mechanism / nervous system transfers EMP to muscles
7. Well learnt sub-routines become sub-conscious / relegated for new skill to be developed

(h) 4 marks for 4 of:

1. Relevant / specific practice / overlearning
2. Practice with distractions
3. Focus on / highlight specific cues
4. Increase intensity of the stimulus
5. Mental rehearsal / visualisation / imagery
6. Encourage (temporal / spatial) anticipation
7. Optimum arousal levels / Zone of Optimal Functioning / motivate performer
8. Transfer of learning / link to past experience
9. Make information / practice meaningful / enjoyable / interesting / memorable

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Section C
Contemporary Studies in Physical Education and Sport

(a) (i) 2 marks for 2 of:

1. (Institutionalised) – clubs / rules / regulations / officials / administration / organised
2. (Competitive) – against opponent – nature – self / to win / personal best / winners and losers

(ii) 6 marks for 6 of:

1. Sport seen as important part of society / people expect it / popular political vote
2. Improves health / fitness of the population / concerns over obesity / prevention / health costs
3. Contributes to other government policies, e.g. compulsory PE programmes
4. Helps prevent crime / social control
5. Creates employment
6. Gives people life skills / e.g.
7. Sport & leisure big business / revenue from sport
8. Increase medal winners / standard of elite / talent identification opportunity
9. Social-cultural policies / integration of society / equal opportunities / regeneration
10. National pride / feel good factor

(iii) 2 marks for 2 of:

1. (Privilege) – social class / access to membership of sport clubs / private education / individual coaching / sophisticated equipment = merchandise
2. (Purposefulness) – socially provided for / promote society's values / social control / provide functional skills for citizens

(b) (i) 4 marks for 4 of:

(sub-max 2 for each section)

Voluntary	Public
<ol style="list-style-type: none"> 1. Run by members / committee / AGM / unpaid volunteers 2. Possibly on trust / charity basis 3. Financed by members / fees / fundraising / sponsorship / money placed back into club 4. Runs on profit-loss but profit not an overriding concern 5. Provide for grass roots of sport 6. Aims to increase participation / performance in their sport / look for talent 7. Meet up with people with similar interests 	<ol style="list-style-type: none"> 8. Business operations run by local authority departments / local council 9. Trading on set prices / charges, etc. / according to pre-set budget 10. May involve subsidies as a matter of policy / Council tax or equivalent / provide a service to the community 11. Managed by local authority employees 12. Move to private management / Compulsory Competitive Tendering / Best Value 13. Facilities not as well equipped due to lack of funds 14. Can be pay as you go

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(ii) 3 marks for 3 of:

1. More choice
2. Better quality facilities (sport and social)
3. More opportunity to keep fit and healthy / to participate
4. Elitist / feel special
5. Personal trainer
6. Competitive market = deals for customers

(iii) 6 marks for 6 of:

1. Talent Identification Programme / talent spotting / regional scouts
2. Attract funding / sponsorship / media income / TV deals / athlete personal award
3. High quality facilities / Centres of Excellence
4. Support – sport science / medical / psychological support / physiotherapy / nutritional advice / biomechanics
5. Structured levels of competition
6. Coaching structure / high quality coaching
7. Structured progression route / development squads or equiv.
8. Provision of training camps
9. Co-ordinated approach from sporting authorities / whole sport plans
10. Holistic approach / education and career support / Athlete Career Education

(d) 7 marks for 7 of:

1. Raises profile of sport
2. Increases participation = improves health
3. Attracts sponsorship to certain sports / increased funding
4. Educate the population about a range of sports / detailed analysis
5. Large range of media / accessibility, e.g. radio / tv / satellite / internet / newspapers / global
6. Some sports have changed rules = more exciting / formats to make more media friendly
7. Interactive nature involves the spectator more
8. Can help change attitudes for the better
9. Promotes nationalism / loyalty to a team
10. Can help retain tradition / stability / middle class values