UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS International General Certificate of Secondary Education

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for the guidance of teachers

0413 PHYSICAL EDUCATION

0413/12

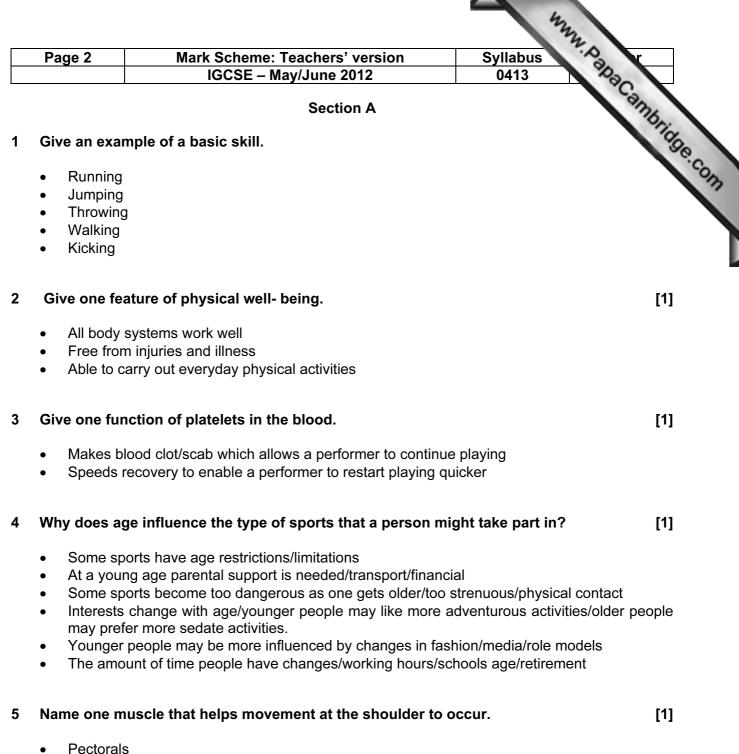
Paper 1, maximum raw mark 80

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 must be read in conjunction with the question papers and the report on the examination.

Cambridge will not enter into discussions or correspondence in connection with these mark schemes.

Cambridge is publishing the mark schemes for the May/June 2012 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.



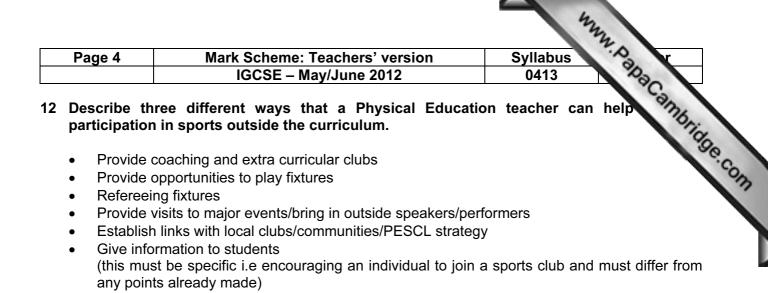
- Deltoid
- Trapezius

6 Describe two benefits for a student who attends a school's extra-curricular activities. [2]

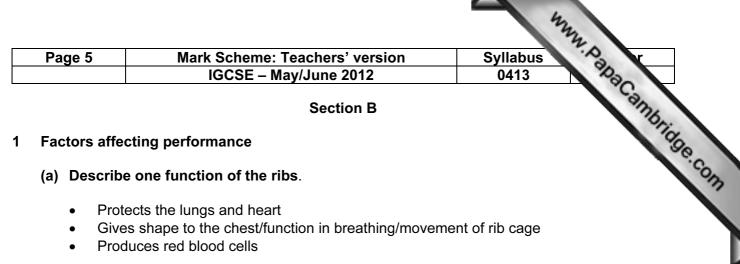
- Improving the standards of performance /skills
- Has the opportunity to play competitive sports/play a variety of sports.
- Improve social skills/meet friend/improve team work/develop leadership skills
- Raise self esteem
- Fun and enjoyment
- Improve fitness/health

	Page 3	Mark Scheme: Teachers' version	Syllabus Syllabus	
		IGCSE – May/June 2012	0413 230	
7	 Shows s sports/de understa Allows m Show do awarene 	nore detailed analysis/replays/slow motion/high de ocumentary programmes about sport//tutorials/spo	nderstanding of a wider varie ation developing greater finition television rtspeople that increases	Abrib
8	Describe tw	o ways that a warm up can reduce the chance	of injury.	[2]
	By practIncrease	repared mentally so more focused on the activity icing some basic skills adjust to the environment the muscle flexibility reduces the chance on muscle is joints which decreases the chance of ligament an	njury/prepares muscles	
9	How can a s	sports centre improve opportunities for perforn	ners with disabilities?.	[2]
	 Improve Improve Hoists to Campaig Employr Time allo Links credition 	opportunities for teams/competition/classes access to the building/ramps/hearing loops changing /shower/toilet facilities o swimming pools/lifts to access all area gns to promote sports for performers with disabilitie nent of specialised coaching staff/coaching course ocated specifically for disability sports eated with schools to promote involvement for you s made available/adapted facilities	es available	
10	Give two ex performance	amples when good extension at a joint helps to e.	o produce a better	[2]
	point/tenEnables	greater reach, useful for basketball to rebound/n nis to reach for a ball more aesthetically pleasing movement ideal in gy e greater power when striking a ball in tennis/puttin	mnastics pointing toes	-
11	Explain two	advantages of using Circuit Training as part o	f a fitness programme.	[2]

- Provides variety of exercise which makes it interesting
- Adaptable to any sport
- Circuits can be designed to develop more than one aspect of fitness/skill
- An efficient way to use training time
- The circuit can be done indoor or outdoors
- Circuit can be done in a restricted area
- Circuits can include either no equipment or a wide variety of equipment
- Adaptable to an individuals level of fitness (work/rest ratio)
- Easy to overload/easy to make specific



[Total: 20]



Answers must show the link to the ribs and not just be generic answers about the skeleton.

(b) Give two reasons why the poor demonstration of a skill could cause a problem for a performer. [2]

- Demonstration is incorrect/outcome incorrect/inaccurate/causes performer to learn skill badly
- Poor demonstration could result in injury
- Demonstration is of a complex skill and is too complicated to understand
- Demonstration is made right handed to a left handed performer and cause confusion
- Demonstration is made with performer unable to see easily/positioning of demonstration poor/cannot hear
- Coach has limited knowledge of the sport/area of the sport/not advanced enough to give accurate demonstration/de-motivates the performer
- Difficult to change when a skill has been learnt incorrectly

(c) (i) What are the physical signs that a coach might see in a performer who is overaroused before a competition? [2]

- Unable to focus on the activity/instruction
- Physical effects sweating /physically shaking (must be visible to the coach)
- Breathing faster
- Over aggressive
- (ii) Describe one way that a coach might try to reduce this level of arousal in the performer. [1]
 - Get the performer to relax by breathing deeply, massage, listening to music
 - Visualisation, talk the performer through the game to allow them to see in their mind the way in which they can achieve a successful outcome
 - Tell the performer to relax/calm down different methods

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Page 6	Mark Scheme: Teachers' version	Syllabus 🔪	S.
	IGCSE – May/June 2012	0413	12

(d) Name two activities. Describe a different component of Health Related fit would be essential for each activity.

Cambridge.com Candidates can name any activity (no mark awarded) but the component named must essential to the named activity.

One mark for one of the components listed below if appropriate to the named activity.

Health related fitness: cardio vascular endurance/body composition/flexibility/muscular endurance/speed/stamina/strength.

One mark awarded for each description if applicable to the activity.

- Cardio Vascular endurance ability to deliver oxygen to muscles would help in endurance activities i.e long distance running activities
- Body composition the percentage of fat and lean tissue i.e. body typing will determine the suitability of activity i.e. someone who is an endomorph who find gymnastics difficult
- Flexibility the range of movement around a joint i.e. gymnastics being able to complete movements such as the splits/able to complete advanced movements
- Muscular endurance ability of muscles to repeat contractions without tiring e.g. a mid field player in football able to work the length of the pitch for the whole of the game
- Speed -the ability to move your body or part of your body guickly i.e. able to sprint fast; a javelin thrower being able to move his arm quickly and throw well
- Stamina the body can keep going for long periods of time i.e. running a marathon in good time
- Strength the force muscles exert when they contract i.e. weight lifting being able to lift heavy weights

(e) Some drugs are regarded as being socially accepted. Name two such drugs and the long term effect of taking these substances. [4]

Nicotine (smoking not given credit)

- Cancers/increase in heart rate/blood pressure /heart disease/reduction in the amount of oxygen in the lungs
- Performers cannot last as long in endurance activities/unable to work with a high level of intensity/unable to take part at all due to invasive treatment

Alcohol

- Coordination/muscles cannot work so hard as levels of glycogen reduce /dehydration/loss of drive/kidney and liver disorders
- Slows down reaction times/reduces agility/reduces the ability to play sports where high levels of coordination are required/lack of willingness to train and perform

Caffeine

- Anxiety/nervousness /insomnia/headaches/heart palpitations/ulcers/sleep disorders
- Tiredness so unable to perform well/difficult to achieve optimum arousal levels

Page	7 Mark Scheme: Teachers' version	Syllabus 72.0 r
	IGCSE – May/June 2012	0413
(f) (i)	Name and describe a test that you could use to	mossuro a porformor's R
., .,	Oxygen Uptake) VO ₂ Max.	measure a performer's Photo-

(f) (i) Name and describe a test that you could use to measure a performer's Oxygen Uptake) VO₂ Max.

- Multistage fitness test
- The 12 minute run/Cooper Test •

One mark for naming the test and three for giving key features of the test.

Other recognised tests can be given credit if appropriate.

If an example of a VO₂ Max test is used credit can only be given if the description is a lab based test.

- (ii) Name one activity you would use to bring about an improvement in the performer`s VO₂ Max. [1]
 - Aerobics/cycling/running/swimming • Any example of endurance activities

Page 8	Mark Scheme: Teachers' version	Syllabus r	
	IGCSE – May/June 2012	0413 23	
	three changes to the circulatory system tha I explain the different benefits of each chang		
One mark	awarded for the change and one mark for the b	penefit	2.
	ase in the carbon dioxide levels in the blood it- Reduces onset of lactic acid and fatique/spec	edier removal of waste	T

(g) Describe three changes to the circulatory system that take place immediate starts and explain the different benefits of each change to the performer.

- Increase in the carbon dioxide levels in the blood Benefit- Reduces onset of lactic acid and fatigue/speedier removal of waste
- The heart rate increases Benefit – performer can work for longer/energy delivered to the muscles quicker
- Contracting muscles squeeze on veins to speed blood returning to the heart Benefit - quicker removal of waste reduces the onset of lactic acid
- The heart fills up fuller/increase stroke volume/greater cardiac output Benefit - more oxygenated blood reaches the working muscles to allow prolonged exercise
- Increase in contraction to pump more blood out of the heart/increase stroke volume Benefit – increase in the amount of energy delivered to the working muscles
- Arterioles widen to ensure blood pressure does not increase Benefit - reduces pressure on the heart
- Blood gets shunted to where it is needed/vasodilation and vasoconstriction takes place Benefit - increase the volume of blood available to the muscles which increases the amount of energy available
- Blood gets hotter/shunted closer to the skin to enable cooling to take place. Benefit - enables evaporation to take place which cools the body

[Total: 25]

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	Page 9	Mark Scheme: Teachers' version	Syllabus r	
		IGCSE – May/June 2012	0413	
2	·	y and Training World Health Organisations definition of heal	th.	0
	• A sta	ate of complete physical , mental and social well	-being	.con.
	• •	e nutrient and a food source from which it c uscle tissue.	an be obtained that would help [2]	

Protein

Meat/cheese/fish/milk/nuts/butter

(c) Describe some of the safety considerations before starting an indoor sports activity.

[4]

- Floor is clean and not slippery
- No sharp edges/nails raised in the floor etc.
- Lighting is good and not casting shadows
- Any equipment used is safe and in good condition/appropriate for indoor use
- Any equipment around the sides of the hall is safe
- The number of participants involved/space used is appropriate
- Level of supervision/age group/gender
- Temperature of the area being used is appropriate
- Use of specialist equipment i.e. cricket nets

(d) What can a performer do, other than warm up/cool down to reduce the chance of being injured during a game? [4]

Answers must relate to the responsibilities of the performer only

- Make sure that the skills required have been practiced/correct technique
- Know how to look after yourself to avoid unnecessary risks/do not make dangerous manoeuvres
- Make sure that you are physically/mentally prepared for the activity
- Do not play with an injury
- Wear correct clothing and equipment i.e. shin pads, gum shields/footwear/no jewellery
- Use appropriate safety equipment
- Follow rules/listen to instructions

Page 10	Mark Scheme: Teachers' version	Syllabus 74. p. r	
	IGCSE – May/June 2012	0413	
• •	long term benefits of exercise on the lungs	and describe how they	
	erformance.	and describe how they	60
Benefits		91102	be.c
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(e) Name two long term benefits of exercise on the lungs and describe how they improve performance.

- Increased vital capacity /lung capacity •
- Increase tidal volume
- Increased oxygen debt tolerance/improvement in gas exchange/increase in alveoli, capillairsation

Improvement (specific to performance)

- * Vital capacity helps improvements by: Increasing the volume of oxygen available to muscles Allows muscle to work harder Allows muscles to work for longer Increases the amount of carbon dioxide expelled Delays the build up of lactic acid in the muscles
- Tidal volume helps improvements by: Able to deliver oxygen to the muscles quicker Able to remove carbon dioxide quicker
- Increase oxygen debt tolerance Able to tolerate oxygen debt for longer during exercise Able to perform for longer Maintain their performance for slightly longer Able to recover quicker and repeat the activity

(f) (i) Explain two ways that progression can be achieved for an athlete training for a long distance running event [2]

Starting with easy activities Start with an activity such as Fartlek Training which allows interval training so that there are regular recovery periods Training becomes more difficult Increase the intensity of training by starting to increase either the distance run or the length of the training run

- Training starts by being general There would be little concern for times, training will be general Training becomes more specific Training will become more related to the distance of the event
- Quantity of training

In the early stages the training will be extensive to build stamina without focus on speed

Quality of training

The amount of training will reduce so that the intensity can increase and there can be more work on changing pace

Page 11	Mark Scheme: Teachers' version	Syllabus r
	IGCSE – May/June 2012	0413
• •	s important that a performer is able to produnt time. Explain three ways that this can be ach	
•	Work on general fitness and basic technique	
•	Work on more specific areas of fitness and advan	nced skills
•	Early low level competitions	
	Develop areas of skills /fitness that has shown to	be weak/tactical training
•	•	5
•	Increase in the amount and level of competition	
• •	Increase in the amount and level of competition Mix rest and training	
• • •	Increase in the amount and level of competition	
• • •	Increase in the amount and level of competition Mix rest and training	

- Recreation is the voluntary activity that takes place during leisure time
- Activities that are done for fun and enjoyment
- (b) Explain two ways that schools can support the participation of sporting activities within the community. [2]
 - Dual-use facilities/sharing- providing facilities with the community/organising events
 - Provide easier access
 - Cheaper to use
 - Curriculum that schools adopt may reflect some of the traditional activities of the community
 - Local teams may work closely together/joint teams/share coaches/club links

Advertising can be given credit if it is specific and not just advertising sports.

(c) The Olympic Games in 2012 will be held in London. A great deal has been said about the legacy that will be left after The Games. Describe the non sporting legacy from hosting The Games.

- Improvement in transport networks
- Improvement in hotels and restaurants/facilities for tourists
- Increase in housing (Use of Olympic village)
- Improvement in tourism organisations
- Improvement in the financial state of the country
- Increase in employment due to the continued use of facilities
- The regeneration of the area will be long lasting
- If the games does not go well London will be left with a high level of debt

Page 12	Mark Scheme: Teachers' version	Syllabus Syllabus	
	IGCSE – May/June 2012	0413	
(d) Explain	how the media can affect a high level performe	er. annb	
	posure through the media can assist sponsorship/lo		
	eas of the media can campaign for the inclusion of p ces pressure on performers that can either improve		CON
 Pla 	ces pressure on performers that can result in cheat	ting/drug taking	Nº

(d) Explain how the media can affect a high level performer.

- Exposure through the media can assist sponsorship/loss of sponsorship
- Areas of the media can campaign for the inclusion of players into the national team
- Places pressure on performers that can either improve or hamper performance
- Places pressure on performers that can result in cheating/drug taking
- The intrusion of the media can distract a performer

Intrusion of privacy not sufficient, must show the effects of the intrusion.

(e) Describe the reasons why an individual might be able to reach the highest level of performance in their chosen activity. [5]

- Natural ability/innate ability/being skilled
- Access to a high quality coach/facilities
- Level of fitness
- Physique/body composition- is the performers somatotype suitable for the activity
- Age is the performers age suitable for the activity/level of physical maturity differs in different sports i.e. a gymnast peaks at a younger age than a rugby forward/playing in the right age group
- Injury a performer needs to be fully fit/free of injury to perform at the highest level/access to medical support
- Diet does the performer access an appropriate diet for the activity/use of carbo loading/high protein diet
- Mental factors this would include level of stress/motivation/personality some activities suit differing personalities/more determined/positive attitude
- Environmental factors the weather is it suitable for a particular activity /altitude is more suitable for certain activities/pollution in certain areas of the world there are health risks that result from pollutants
- Support/family/school/sports associations/governing bodies. Could be in the form of finance/transport
- Having the time available to train/trains hard

[Total 15]