UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIO

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2011 quest

for the guidance of teachers

0413 PHYSICAL EDUCATION

0413/11 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.

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Section A

1 A particular action or set of actions that create movement.
Credit can be given for examples;
- walking
- running
- crawling
- rolling etc.

2 Answers that relate to training should not be given credit as it forms part of the question.
- eating a balanced diet
- getting enough sleep
- having fun/enjoyment
- having stable relationships
- working or feeling you have a place in society [1]

3
- provides social activities
- opportunities to take part in activities with friends/easy access to a club
- meet friends and new people
- develop social skills such as co-operation, teamwork/improving relationships [1]

4
- the hormone called adrenalin is released into the blood stream
- the heart rate increases
- more oxygen and glucose are pumped to the muscle
- blood vessels in the gut and under the skin constrict, shunting more blood to the muscles
- the muscles tense, ready for action/burst of energy/muscles shiver/more alert
- blood pressure increases [1]

5
- collisions with another player
- hit in the chest by a ball
- falling on the ground

Examples such as a tackle in rugby could be given credit as there is a likelihood of contact being made on the trunk of the body. The response of being hit would need more information to be given credit. [1]

6
- raises confidence and self esteem/reduces stress
- improves social skills
- improves communication skills
- have fun/enjoyment
- make friends/have a wider social group
- improves fitness/skill levels/opportunities to perform/develop t

7
- combines with oxygen
- carries oxygen to muscle cells
- picks up carbon dioxide and expires it as cellular waste
- combines with nitric acid to help regulate blood pressure
- helps regulate blood flow
- transports carbon dioxide from tissues back to lungs
- regulates iron levels [2]

8
- type of sport wanting to take part in/reason for wanting to train
- age
- current level of fitness
- weight
- medical background/injuries
- is the person a smoker/do they drink alcohol
- BMI
- amount of time able to commit to training
- background of the person in relation to sport [2]

9
- secretary
- chairperson
- vice-chairperson
- treasurer
- fixtures secretary [2]

10
- broad shoulders helps ensure muscular development
- muscular – needed to push the shot with power
- strong forearms needed to hold/grip the shot
- strong thighs to enable the athlete to move across the circle/push
- has bulk needed to provide power [2]

11
- reversibility – fitness is reversible, when there is a break in training you will lose the level of fitness

The break in training can be a result of:
- illness
- injury
- holiday
- commitments of work/family
- loss of interest
- during out of season periods [2]

12 Candidates who respond "the company do not want to" must give

- cost of sponsoring the event
- not an activity that the company wish to be associated company image
- the demands of the event organisers too great/lack of confide
- the event traditionally does not create enough interest
- the event does not provide enough publicity/not on the televis
- the event does not provide enough corporate opportunities fo

Section B

Factors Affecting Performance

B1 (a) The skill described must be one:
- that varies in its outcome
- whose outcome depends on the environment.

Examples could include saving the ball in football, hitting spike.

(b) Causes:
- bright lights
- the crowd
- noise
- the importance of the event/match
- aggression of other players/crowd
- over motivated by the coach/family
- involvement of the media

Effects:
- feeling nervous
- feeling sick
- loss of concentration/makes mistakes
- sweating/expends nervous energy
- over aggressive [3]

(c) (i)
- Description of type of joint
- Slightly moveable/cartilaginous joint

(ii)
- Cartilage

(iii)
- Acts as a shock absorber
- Limits movement
- Reduces friction/pain/stops bones rubbing together [3]

(d)
- Ensures fair competition
- Can cause long term health problems e.g. cancer/heart disease
- Pain and fatigue can be masked causing long term injury
- Can change behaviour
- Can cause the performer to become addicted
- Use of some substances is illegal
- Maintain the image of the sport/integrity [3]

(e) (i)
- the resting heart rate is lower in person **A** which indi
- person **A** is able to use oxygen more efficiently
- person **A** is able to expire carbon dioxide more effici

(ii)
- demand for oxygen is reduced quicker so heart rate i
- oxygen removes lactic acid from the body quicker
- oxygen debt after exercise is smaller

(iii)
- age – maximum fitness usually occurs in your twenti
- gender – from about 11 boys grow at a faster rate
- build – the somatotyping makes certain builds more suitable for some sports
- diet – it is important that performers have a balanced diet
- amount of exercise taken – regular exercise is important to maintain a level of fitness
- illness/injury/fatigue – makes it difficult to engage in regular activities
- drug taking – social drugs reduce levels of fitness and can damage your health
- levels of stress – can harm health making it difficult to exercise
- environment – living in areas of pollution reduces health, living at altitude brings certain physical benefits [2]

(f) Candidates must name both muscles to gain two marks. If a single muscle is named no mark should be awarded.
Examples could be: bicep /tricep
quadriceps/hamstring

Creation of movement
- muscles can only pull – cannot push
- muscles work across the joint
- one end is attached to a fixed bone – origin
- when the muscle contracts it pulls on the moveable bone – insertion
- when one muscle contracts – prime mover or agonist
- the other in the pair relaxes – antagonist
- the roles reverse when the movement reverses
- when the agonist contracts other muscles also contract to support the contraction – synergists

Candidates who give bicep contracts/tricep relaxes = 1 mark [5]

(g) (i) Candidates may describe activities such as changing di beat a player, changing direction when dribbling a ball in

(ii)
- balancing activities
- short shuttle runs to develop the ability to turn at spe
- stretching activities to improve muscle flexibility
- muscle speed training to improve reflexes
- exercises should be done at speed

(iii) One mark given for the test being named and one mar that test

Test could include
- 5 metre shuttle run
- zig – zag test
- T – test
- Illinois Agility Test

Marks should only be awarded for a recognised test and not for agility exercises.
A mark can be awarded for administration of the test or naming/describing the equipment used in the test. [4]

[Total: 25]

Health, Safety and Training

B2 (a)
- makes muscles tired
- causes pain in the muscles
- performers must stop or they could collapse

(b) Carbohydrates
- provide a ready source of energy/able to perform for long
- provide energy but no other nutrients so it is easy to mon

Protein
- builds muscle tissue/makes the body stronger
- repairs tissue
- can be used as an energy system [2]

(c)
- knowing the rules – act as a referee
- aware of safety requirements of the activity – complete risk assessment
- maintains behaviour of players
- ensures that competitors are evenly matched physically/age/ability
- checks equipment/ground etc
- is aware of the levels of ability of the performers and that they are matched to the type of activity/fitness of the player appropriate to the activity
- ensures the safety of players from people watching/spectators
- teaches the safety aspects of the game/activity
- teaches the performer skills to maintain safety [3]

(d) The answers MUST relate/make reference to sprint training. If candidates give the training principles without applying them marks should not be given.
- Specificity
  the training should be specific to sprint work
  examples
  training should be completed at maximum speed
  short sprints from a flying start 3 x 30 m
  short sprints from a standing start 3 x 40 m
  long sprints from a flying start 3 x 100 m
  long sprints from a standing start 3 x 100 m
  employing different types of training – given examples of resistance training
- overload
  increase the work load
  Increase the number of repetitions
  decrease the rest period between the repetitions
  increase the distance of the sprint 30 – 40 m etc
- progression
  increase the length of time a training session lasts
  increase the number of training sessions each week
- reversibility
  the training sessions should be stopped if the time taken for the repetitions starts to increase as the performer is getting tired

If the FITT principles are used this can gain 1 mark max as an example of overload. [3]

(e) • cool down – prevents soreness
helps clear lactic acid from the muscles
loosens tight muscles
Candidates may give examples such as light jog, stretchi
- eat – replace energy used in training – particularly carbo
- drink water – rehydrate to replace fluids lost through swe
- rest – aids muscle repair
- plunge pools – players immerse in cold water to reduce
- wear compression garments to reduce muscle swelling

(f)(i + ii) Respiratory system
- changes in breathing rates
- changes to the structure of the lungs
- volumes of oxygen used change in the respiratory system
- the gas exchange process improves
- improvement in the delivery of oxygen to the muscles
- the rib muscles and diaphragm grow stronger,
- chest cavity becomes larger – increases lung capacity which enables more oxygen to be breathed in and increases the amount of carbon dioxide
- more capillaries grow around the alveoli
- more blood is available for gas exchange; allows the body to exercise for longer.

Circulatory System
- the heart grows larger – so it can hold more blood
- the body makes more blood with more red cells – more oxygen can be carried
- arteries grow larger and more elastic – blood pressure drops [3/4]
- the resting heart rate falls [4/3]
- allows performers to play for longer [7]

[Total: 20]

Reasons and Opportunities for participation in physical activity

B3 (a)
- financial ability to pay for equipment and entrance fees
- work arrangements/unemployment
- family commitments/peer pressure
- environment, location of where they live.

(b)
- attracts less sponsorship
- less money to support the sport
- harder to gain government support/funding
- people are less likely to understand the sport and participate
- schools are less likely to promote the sport
- people would rather watch popular sports than try less popular ones
- if the sport is poorly presented it may be seen as boring and discourage participation

The opposite responses giving the positive responses should be given credit. [2]

(c) Examples could be: Kenya, Ethiopia – distance running
New Zealand – rugby
Fiji – rugby sevens
Brazil – football
Indonesia – badminton

Reasons for developing expertise:
- environment/geographical – where they live; e.g. Nordic sportsmen are more likely to live where there are large falls of snow
- physical traits – some nationalities are naturally more suited to certain types of activities
- financial – some countries fund certain sports at a very high level in comparison to other activities – Jamaica funds its track athletes at a high level
- traditional – some countries have a history of success and therefore, young children are encouraged to play – many role models.
- cultural – some countries have aspects of sport entwined with their culture [2]

(d)
- identify the needs of the local community/targeted advertising
- run specialist classes in local sports centres
- appoint a community sports coordinator to work with minority groups/create greater links with schools
- work with local community groups to encourage participation in targeted sports
- provide dual use facilities so the community can link with schools
- relax the rules to encourage participation i.e. women do not have to wear traditional swimming costumes if this conflicts with cultural views [3]

(e)
- parental support
- access to transport – public or parents having a car
- family interest in sport
- activities that are available in school
- peer pressure/fashion/role models influence a performer/
- location, if they live near a facility
- some activities may have an age restriction e.g. use of w
- cost may be too great (if there is a number of siblings)
- too much school work may reduce opportunities
- school attitudes to promoting sport/school facilities that m

(f)
- players lose interest in playing, more interested in the fame and publicity
- media intrusion into their private life makes it difficult to concentrate on training/playing
- media demands for interviews etc. can cause disruption to training
- media can find sensationalist stories that disrupts the lives of performers
- the media can undermine the confidence of a player by predicting or reporting on poor performance
- the media can influence crowds that in turn affects their attitude towards individual players
- the media can influence team selection
- pressure on performers to compete more than they should i.e. athletes running when not fully fit.
- too much positive coverage can make a performer complacent [4]

[Total: 15]