



General Certificate of Secondary Education

Physical Education 3587/W Short Course

Specification B

Mark Scheme

2007 examination - June series

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A1.

(a) What is the pulse?

The beat/pump (a single contraction) of the heart.
accept... heart beat

(1 mark)

(b) In which part of the body are the following muscle groups?

(i) pectorals (ii) quadriceps

(i) The chest.
accept... the torso/the trunk

(1 mark)

(ii) (The front of) The thigh.
accept... upper leg/the leg

(1 mark)

(c) Give three short-term effects of exercise

Three such as:

- skin goes red/ vasodilation;
- body temperature rises/ body gets hot;
- body starts to sweat/ sweating;
- dehydration/ thirsty/ nauseous/ faint;
- breathing rate increases/ breathless/ panting;
- O² debt/ lactic acid build up;
- increased minute volume;
- increased tidal volume;
- increased gaseous exchange;
- heart beats faster/ heart rate increases;
- increased stroke volume;
- increased cardiac output;
- blood pressure rises/ increases;
- muscles tire;
- muscles ache/ pain;
- cramp;
- stitch.

(3 marks)

(d) (i) What is lactic acid?

A waste product (*1 mark*) released into the blood stream as a result of energy breakdown (breakdown of ATP) (a waste product of anaerobic respiration).
accept ... a chemical that builds up in muscles (1 mark).

(ii) How does lactic acid affect performance?

It causes a reduction in the standard of performance (*1 mark*) *such as:*

- not as fast/ slow down;
- not as hard/ intense;
- not as long (time);
- not as far (distance).

Caused by:

- increasing the acidity in the muscle cells;
- reducing the contraction capability of muscles;
- causing pain;
- causing fatigue in muscles.

[3+1]

[2+2]

[1+3]

(4 marks)

(e) **What are the benefits to the heart and circulatory system of an active lifestyle?**

The benefits include bigger and stronger cardiac muscle (*up to 2 marks*) and clear blood vessels (*1 mark*) and increased work capacity (*1 mark*) due to an adequate supply of oxygenated blood to vital organs and tissues (*1 mark*) and the removal of waste products (*1 mark*) which is caused by:

- increased stroke volume;
- lower resting heart rate;
- increased cardiac output;
- heart muscle hypertrophies with a higher reserve capacity;
- blood vessels dilate;
- blood pressure lowers;
- heart beats slower/ works steady state at normal workloads;
- quicker recovery;
- reduced risk of heart attacks/ strokes.

(5 marks)

A2.

(a) **Give one advantage of taking part in sport.**

One reason such as:

- personal health and fitness;
- personal pleasure/ enjoyment/ fun/ socialisation;
- leisure interest/ pursuit/ challenge;
- vocation/ money.

(1 mark)

(b) **Give two reasons for participating as a part-time professional player.**

Two such as:

- paid for playing;
- paid for another job;
- alternative careers;
- long term prospects;
- fall-back options in the event of failure;
- fall-back option in the event of early retirement.

(2 marks)

(c) **Give three different opportunities for participation in activities in a mountain environment.**

Three activities such as:

- potholing/ caving;
- (rock) climbing/ abseiling;
- mountaineering;
- (hill/fell) walking/ fell running;
- orienteering;
- horse riding;
- (hang) gliding/ para-sailing/ ballooning;
- canoeing/ rafting;
- camping;
- ski-ing (and other snow sports)
- certain motor sports;
- mountain biking/ cycling.

Or **three** opportunities created by the natural facility such as:

- open moorland for walking;
- mountain rivers for rafting;
- rocky outcrops for climbing.

(3 marks)

(d) **In gymnastics a judge marks performance. Identify and explain other non-playing ways of participating in sport and physical activity.**

Identify the role (1 mark) and explain what is done (1 mark):

- coaching/ teaching skills and techniques as in football;
- choreographing performance routines as in dance;
- refereeing, or umpiring, the application of the rules as in basketball;
- marshalling performers to the right place at the right times as in athletics;
- scoring as in cricket;
- timekeeping as in rugby league;

- organising the number and order of events as in swimming;
- managing the deployment of resources as in the running of a facility;
- spectating through watching/ studying/ analysing.

accept ... naming any roles without explanation (max 3 marks).

NB the activity does not have to be mentioned.

(4 marks)

(e) How can sportspeople bring harm to their sport?

Bring harm (into disrepute/disgrace/shame) by:

- Not playing to the rules/ cheating;
- match fixing;
- equipment tampering;
- play-acting/ gamesmanship;
- poor sportsmanship/ etiquette;
- inappropriate attitude/ style – eg arrogant/ lazy;
- unattractive style of play;
- bad press publicity/ scandal;
- inciting mis-behaviour;
- substance abuse/ drug taking;
- dissent;
- foul language;
- violent conduct.

Roles other than playing can be used as the basis for an answer (eg bias by a referee).

(5 marks)

B1

General physical fitness varies from person to person.

- (a) **How do the skeletal and muscular systems determine a person's suppleness?
How is suppleness tested?**

How?...determine suppleness by:

- type of joint;
- shape of bones;
- size of bones;
- elasticity of ligaments;
- elasticity of tendons;
- blood flow;
- stretch capability of muscles;
- tension in muscles;
- muscle bulk/ fat;
- scar tissue/ calcification/ arthritis/ disease/ injury.

How? ... tested by:

- such as the sit and reach/ stand and reach tests – measuring the distance of movements in inches/ cms;
- such as box splits – measuring the angle of movement in degrees.

Award marks for testing suppleness ...

- name of test (*1 mark*);
- description of test (*1 mark*);
- measurement (*1 mark*);
- conclusion (*1 mark*).

- (b) **What would be the benefits to the individual of having good, general physical fitness?**

Benefits such as:

- Looking and feeling good;
- Being able to undertake a manual job where there are constant demands on strength and muscular stamina;
- Having the capability to undertake everyday household tasks such as....
 - having enough strength to lift things;
 - having enough suppleness to reach for things;
 - having enough stamina to complete tasks without becoming tired before the end of the day;
 - being able to engage fully in family/ social life;
 - being able to take part in active leisure pursuits;
 - being able to stay alert and fresh rather than sleepy and lethargic.
- Being less prone to illness/ injury;
accept ... better strength; better speed; better stamina; better suppleness (max 1 mark).
accept ... aspects of circulatory/ respiratory systems without explanation (max 2 marks).

NB All three parts of the question must be answered to gain full marks.

(15 marks)

B2

Increasing the participation in sport and physical activity is an important objective of many individuals and organisations.

(a) How might role models promote sport on a national basis?

How? (*viz* what do role models do to promote sport?) ... they promote sport by:

- displaying a particular image/ style;
- communicating a particular message;
- demonstrating a particular skill/ ability;
- undertaking a particular task/ action (eg appearances, book signings);
- maintaining high standards of behaviour and sportsmanship.

If the individual is well known then the influence is wide (*1 mark*), as is the influence if the sport is national and attracts media attention (*1 mark*).

Role models need not just be players – but someone in a different role if that person has a positive impact.

(b) How do schools encourage young people to take part in sport and physical activity?

How?...schools encourage participation by:

- offering at least the minimum of curricular PE at all ages;
- making lessons interesting/ fun;
- offering a variety of extra-curricular sport/ activities;
- arranging competitions (eg inter-form, house, school)/ organising teams;
- organising sports tours/ outdoor pursuit trips;
- offering a range of qualification courses;
- holding PE in a positive ethos;
- teachers and coaches acting as role models;
- providing support and extension opportunities for gifted and talented performers;
- celebrating success;
- providing a focal point for community activity;
- fostering positive links with parents and clubs;
- providing a focal point for feeder/ partnership schools;
- providing and maintaining a range of facilities;
- providing a range of coaching staff.

NB Both parts of the question must be answered to gain full marks.

(15 marks)

**MARKING CRITERIA FOR QUALITY OF WRITTEN
COMMUNICATION**

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High Performance	Candidates spell, punctuate and use the rules of grammar with almost faultless accuracy, deploying a range of grammatical constructions; they use a wide range of specialist terms adeptly and with precision.	2 marks
Threshold Performance	Candidates spell, punctuate and use the rules of grammar with reasonable accuracy; they use a limited range of specialist terms appropriately.	1 mark
Below Threshold Performance		0 marks