



ASSESSMENT and
QUALIFICATIONS
ALLIANCE

Mark scheme

June 2003

GCSE

Physical Education B

3582 (Full Course)

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A1

- (a) one such as:
- High jump
 - Hurdles
 - Basketball
 - Volleyball
- + many others *(1 mark)*
- (b) (i) one such as swimming, gymnastics, dance, diving, climbing, field event throws, golf, tennis, squash, weight lifting. *(1 mark)*
- (ii) one such as swimming, gymnastics, hurdling, field event jumps, dance, trampolining, diving, martial arts, climbing, skating, weight lifting. *(1 mark)*
- qualification needed in other activities (e.g. team games) where positional demands require suppleness
- (c) (i) a source, or a supply, of stored energy *(1 mark)*
accept stored carbohydrate (starch or sugar)
- (ii) in the muscles *(2 marks)*
in the liver
- (d) (i) any **two** from:
- heat
 - lactic acid
 - water
- (2 marks)*
- (ii) by sweating
by breathing/respiration
by urinating/excreting *(2 marks)*
- (e) stroke volume is the amount of blood leaving the heart with every beat. *(1 mark)*

A higher stroke volume will improve performance by: *(1 mark)*

- lowering the resting heart rate;
- increasing cardiac output;
- increasing the capacity to carry oxygen in the blood;
- allowing more O₂ to be transferred to the muscles;
- allowing more carbon dioxide to be transferred from the muscles;
- helping reduce build-up of lactic acid;
- increasing the capacity for aerobic production of energy;
- making it easier to cope with exertion ;
- improving stamina-based performance.

Generally the opposite if SV is low.

(3 marks)

A2

- (a) by timing or measuring a response.
accept by using a stopwatch/by the ruler test/by the speed of a response. (1 mark)

- (b) any **two** such as:
- reacting to the start of a race
 - avoiding a punch in boxing
 - avoiding a falling runner in a race
 - adjusting position in response to a deflection
 - tackling a side-stepping opponent in rugby
 - intercepting a pass in netball
 - goalkeeper making a save
- NB two different examples can come from the same activity. (2 marks)

- (c) any **three** from:
- | | |
|------------------------------|---------------|
| ▪ concussion/unconsciousness | ▪ hypothermia |
| ▪ cramp | ▪ shock |
| ▪ hyperthermia | ▪ stitch |
- NB symptoms such as nausea, dizziness, headache (1 mark max) (3 marks)

- (d) (i)
- the point at which training improves physical fitness
 - minimum activity to bring about training effect/benefit
 - 65% to 85% of 220 minus age
- (max 2 marks)

- (ii) along the lines of
- age affects the calculation of the training threshold formula.
 - at a young(er) age the training threshold will be high
 - as age increases the TT will decrease
 - [if not already given in d(i)] the formula $65-85\% \times (220-\text{age})$
- (max 3 marks)
(4 marks)

- (e) **One from:**
- interval training
 - fartlek training
 - circuit training
 - weight training
 - pressure training.
- Accept plyometric training (1 mark)

This can improve anaerobic fitness because it:

- involves working without oxygen;
 - extends anaerobic work by delaying oxygen debt;
 - improves lactic acid tolerance;
 - increases metabolism;
 - involves strenuous short bursts
 - at close to 85% of max HR;
 - aids removal of waste products (carbon dioxide, lactic acid);
 - improves recovery time;
 - varies the intensity of the work;
 - varies the duration of the work;
 - varies the duration of the rest;
 - can incorporate specificity.
- (4 marks)

A3(a) **one** from:

- coach;
- instructor;
- leader;
- choreographer;
- trainer;
- parent;
- accept physiologist/psychologist/dietician.

(1 mark)(b) **two** such as:

- | | |
|--|--|
| <ul style="list-style-type: none"> ▪ promote sport ▪ organise fixtures; ▪ organise competitions; ▪ organise officials; ▪ organise meetings; | <ul style="list-style-type: none"> ▪ compile records; ▪ arrange venues; ▪ manage finances. accept examples of secretarial work for 1 mark. |
|--|--|

(2 marks)(c) **three** such as:

- for the challenge/competition;
- for the thrill;
- for enjoyment;
- as a hobby;
- for the friendship;
- for the socialising/being part of a team
- to broaden education.

(3 marks)

(d) schools can promote sport and physical activity by:

- | | |
|--|---|
| <ul style="list-style-type: none"> ▪ raising awareness/promoting value ▪ allocating more than minimum curriculum time to PE; ▪ delivering enjoyable lessons; ▪ offering a range of accreditation; ▪ providing a range of extra-curricular activities; ▪ extending facilities to community use; ▪ adding additional facilities through enterprise; | <ul style="list-style-type: none"> ▪ providing generous finance; ▪ involving lots of staff and visiting coaches; ▪ providing role models; ▪ providing a variety of internal and external competition; ▪ celebrating participation and success of students; ▪ giving sport a high profile in publicising and marketing features. |
|--|---|

(4 marks)

(e) participation costs money – the more you have, the easier it may be to pay to play in terms of:

- | | |
|---|---|
| <ul style="list-style-type: none"> ▪ kit; ▪ transport/accommodation; ▪ equipment, ▪ coaching; | <ul style="list-style-type: none"> ▪ fees; ▪ facility hire; ▪ insurance; ▪ subscriptions. |
|---|---|

Having more money may mean more free time, therefore greater opportunities for leisure pursuits (i.e. sport).

There are discount schemes available for certain groups (e.g. unemployed)

If you do not have the funds, participation may be restricted, but some activities such as jogging can be undertaken for little cost.

(5 marks)

A4

- (a) **one** from:
- local government/local authority (the Council); accept schools/leisure centres
 - private enterprise/independent schools;
 - the Sports Councils
 - voluntary organisations.
- accept public/private sectors (1 mark)
- (b) **two** from:
- Plas y Brenin
 - Holme Pierrepont
 - Lilleshall
 - Manchester Velodrome
 - Bisham Abbey
 - Crystal Palace
- accept Inverclyde/Cumbrae/Glenmore Lodge/Cardiff N.S.C/Plas Menai/Tollymore (2 marks)
- (c) **three** such as:
- product association;
 - threat to policy decision making e.g. changes to rules/changes to timings;
 - minority sports find it hard to attract sponsors;
 - under achieving teams find it hard to attract sponsors;
 - short-term agreements;
 - over-reliance;
 - prominence of adverts;
 - conflict of multiple sponsorship.
- (3 marks)
- (d) by:
- all players having a ranking, or a position on the ladder;
 - best player = rank 1, or top of the ladder;
 - initial placings at random, or by seeding or an open competition
 - to climb higher up the ladder a player must challenge someone higher;
 - the result of a match means promotion or relegation;
 - any inaccuracy in initial placements can be sorted by natural selection;
 - local rules determine the criteria of a challenge – re how often and who.
- Accept: if you win you move towards the top (4 marks)
- (e) by:
- organising the Games
 - bringing together athletes from all over the world;
 - (choosing the Olympic venue, a festival, therefore) a boost to a nation's sport.
 - providing a venue (facility legacy);
 - providing a wide range of sports;
 - providing top class competition/high standards of performance;
 - stimulating motivation, continuity and progression;
 - providing the opportunity to represent own country;
 - promoting the Olympic spirit, creating goodwill/friendship;
 - encouraging the development of physical abilities;
 - encouraging the pursuit of excellence.
- (5 marks)

B1

(a) The skeletal and muscular systems work together by:

- the arrangement of bones creating joints, about which movement is possible;
- the structure and shape of a joint determining the type and range of movement possible;
examples linking correct type of joint with the correct type of movement:
- bones are held together at joints by ligaments
- ligaments provide stability and limits to movement
- the skeleton providing a framework for the attachment of muscles;
- the muscles being attached to the bones, across a joint, by tendons;
- the structure of a muscle allowing it to increase and decrease in size and length;
- the muscles contracting and relaxing (or shortening and lengthening)
- the muscles pulling, not pushing
- muscles working in (antagonistic) pairs:
role of protagonist + example
role of antagonist + example
- the contribution of muscle fibre causing the tendon of insertion to move towards the tendon of origin;
- the pull of the tendon causing the angular movement of one bone towards another;
- the creating of levers which in turn determine the effect of movement;
- the speed and force of muscle contraction determining the speed and extent of movement;
- the role of fast and slow muscle fibres.

(b) Common skeletal and muscular injuries occur by:

- accidental or deliberate contact with other bodies;
- accidental or deliberate contact with surfaces;
- accidental failure of equipment;
- deliberately misbehaving/disobeying the rules;
- accident due to over-extending the body;
- accident due to adopting abnormal body position;
- accident due to incorrect technique;
- incorrect preparation (e.g. warm-up/fitness conditioning);
- incorrect recovery (e.g. cool-down);
- overuse due to repeatedly stressing parts of the body.

Relevant examples, which must relate to how they occur, might include:

- cracks or complete fractures of bones;
- stress fractures;
- shin splints;
- partial or complete dislocation of joints;
- sprains of ligaments;
- tears of muscle fibres;
- internal bleeding (bruises)
- tears/ruptures of tendons;
- inflammation of a tendon;
- tears of cartilage;
- bursting of bursae (swelling) at a joint.

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

(15 marks)

B2

- (a) Diet can help to improve performance by
- maintaining good health;
 - eating a balanced intake of all six food types;
 - avoiding cholesterol-rich food;
 - maintaining body size (+ relevant example, e.g. jockey);
 - maintaining weight (+ relevant example, e.g. boxer);
 - maintaining shape and composition (+ relevant example, e.g. gymnast);
 - keeping hydrated through frequent intake of fluids (usually water);
 - supporting strength training through protein enrichment;
 - supporting stamina training through carbohydrate stacking;
 - supporting stamina training using fat as a source of energy.

In the case of competing away from home (particularly abroad), diet can improve performance if

- unaccustomed foods/menus are avoided;
- untreated water is replaced with boiled water.

As well as the actual content of a diet, the timing of food intake also affects performance as do the meals taken prior to a performance.

- (b) Drugs might affect performance positively or negatively.

Positive effects

- analgesics - masking unwanted pain;
enabling the player to focus;
- beta-blockers - calming nerves;
reducing heart rate;
steadying the player's movement;
- diuretics - maintaining weight;
- stimulating weight loss;
- steroids - assisting breathing in medicinal inhalers;
building up muscle;
increasing aggression;
- stimulants - increasing arousal.

Negative effects

- analgesics - risk of further injury;
dependency/addiction
- beta-blockers - loss of urgency/
inability to respond energetically;
- steroids - dangerous side-effects;
- tobacco - damage to breathing mechanisms/reduced aerobic capacity;
- alcohol - bad judgement;
slow reactions;
- social drugs - may lead to disqualification, so no performance.

Drug and effect = 1 mark; performance effect in appropriate activity = 1 mark.

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

(15 marks)

B3

(a) Sportsmanship is:

- playing to the rules;
- being safe;
- playing in the spirit of friendly rivalry/playing fair;
- following a code of good conduct;
- doing one's best;
- showing respect to opponents;
- showing respect to officials;
- showing respect to spectators;
- accepting decisions/not fussing/getting on with it;
- accepting the result;
- following sport etiquette;
- giving advice and encouragement to new, or young, or inexperienced players.

examples

- shaking hands at the beginning/end of a match;
- giving three cheers;
- collecting a dead ball for the opponent;
- stopping a game in the event of an injury;
- acknowledging good skill by opponent;
- owning up to errors;
- swapping shirts/exchanging pennants.

examples can also be given from what a good sports person does not do, such as

- arguing/dissent/backchat;
- spitting/swearing;
- engaging in aspects of gamesmanship such as time-wasting and delaying play.
- engaging in aspects of gamesmanship such as teasing/tormenting/angering/winding up opponents;
- engaging in aspects of deceit.

(b) Different examples of cheating, from a variety of sports, include:

- handling the ball and claiming a goal in football (Maradona);
- use of the head in boxing/the foot in hockey;
- tampering with the equipment (ball in cricket)(foil/vest in fencing)(gloves in boxing);
- improper equipment (too many clubs) (wrong sized studs) (over-sized racket);
- throwing rather than bowling in cricket;
- not taking a free move from the correct place (free kick in football)(lost ball in golf);
- intimidating tactics (bodyline in cricket)(Prost & Senna in Formula 1);
- bribing other players/officials(football & cricket)/match fixing/illegal betting;
- fielding unregistered players/ over-aged players in junior sport;
- drug taking (athletics & weight-lifting);
- doping horses;
- blood doping in endurance athletics.

A sport may be used more than once, but not exclusively.

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.	4 marks
Intermediate Performance	Candidates spell, punctuate and use the rules of grammar with considerable accuracy; they use a good range of specialist terms with facility.	2–3 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