

**Oxford Cambridge and RSA Examinations**



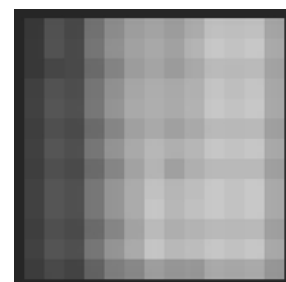
**ADVANCED GCE  
ADVANCED SUBSIDIARY GCE**

**A2 7875  
AS 3875**

# **PHYSICAL EDUCATION**

**COMBINED MARK SCHEME  
AND REPORT FOR THE UNITS  
JANUARY 2005**

**AS/A2**



3875/7875/MS/R/05J

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RECOGNISING ACHIEVEMENT

Mark Scheme 2562  
January 2005

## Section A

1. (a) **Fig. 1 shows a netball player using the elbow joint during the execution phase of a shot.**

(i) **Identify the type of joint, articulating bones, agonist and antagonist during extension of the elbow during the execution phase of the shot.** [4]

1. Type of joint – hinge
2. Articulating bones – radius, ulna and humerus
3. Agonist muscle – triceps brachii
4. Antagonist muscle – biceps brachii

(ii) **Name the type of contraction occurring at the agonist and give one exercise that could be used to improve the strength in that muscle.** [2]

1. Type of contraction – concentric
2. Strength exercise – press ups/triceps extensions/dips

(iii) **How would a warm up benefit the strength of muscle contractions when performing the strengthening exercise?** [3]

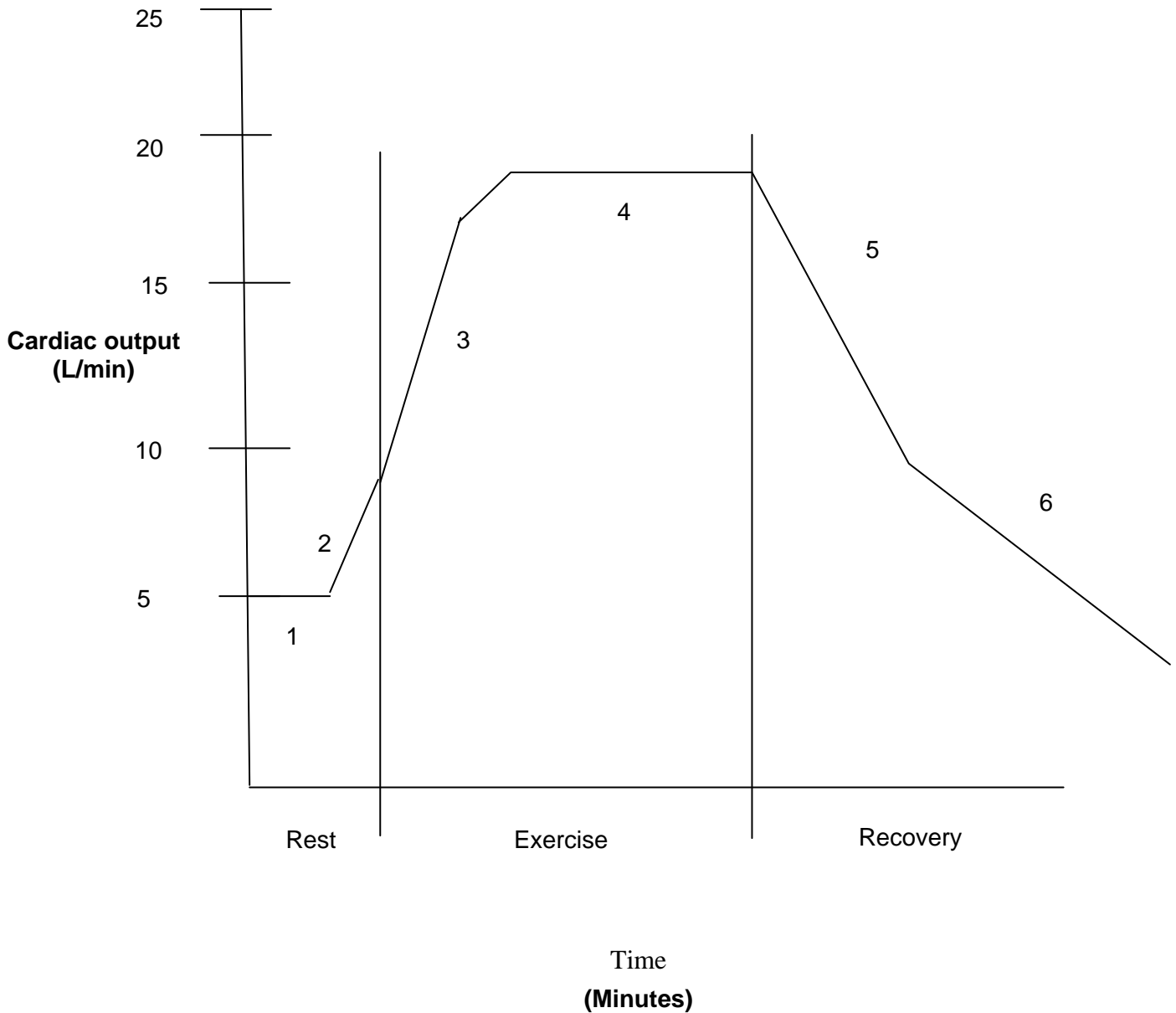
1. An increase in muscle temperature
2. This allows greater stretch/elasticity
3. Decreases risk of injury/increase in blood flow/O<sub>2</sub>
4. Nerve impulse conduction is quicker
5. Improves co-ordination between antagonistic muscle pairs/increased speed of strength of contraction
6. Less resistance within muscle/reduction in muscle tension/decreased muscular viscosity
7. Increased enzyme activity
8. More energy available in muscles

(b) **Following a training session a coach will require the performer to complete a cool down. How would a cool down aid the vascular system.** [2]

1. Flushes out lactic acid/waste products/repays oxygen debt
2. Keeps capillaries dilated/maintains blood flow/oxygen to muscles
3. Maintains skeletal muscle pump/respiratory pump
4. Prevents blood pooling
5. Maintains venous return
6. Maintains stroke volume/cardiac output
7. Maintains blood pressure
8. Keeps metabolic activity elevated/gradually decreases heart rate

- (c) Sketch a graph showing the changes you would expect in cardiac output:
- at rest,
  - during a 30 minute submaximal training run,
  - for a ten minute recovery period.

[4]



1. Resting value 5L/min approx
2. Anticipatory rise before exercise
3. Fast increase (15 L/min and above)
4. Plateau between (15 L/min and above)
5. Sharp decline followed by slow decline to resting level

2 (a) During aerobic performance a large amount of carbon dioxide is produced at the muscles.

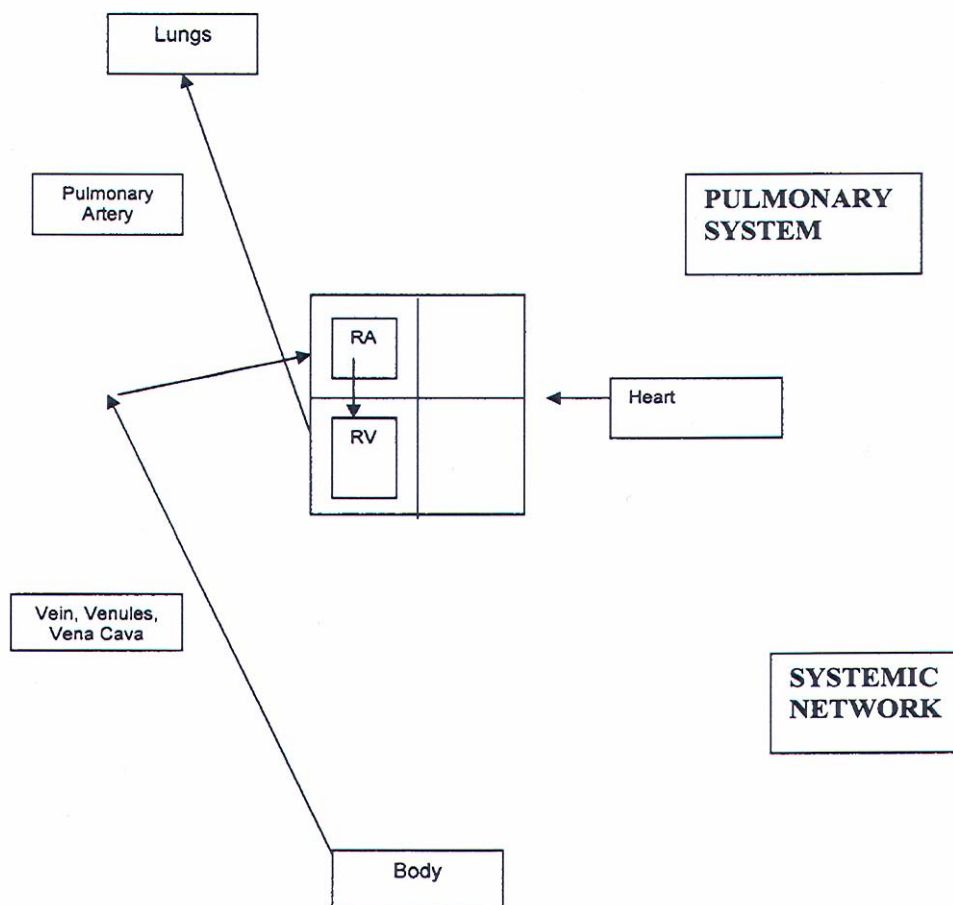
(i) How is carbon dioxide diffused from the muscle tissue into the blood during exercise?

[3]

1. CO<sub>2</sub> flows from an area of high pressure to low pressure
2. Partial pressure of carbon dioxide (PCO<sub>2</sub>) is lower in the blood/lower in the blood
3. During exercise there is a greater concentration gradient/diffusion gradient
4. So faster diffusion will occur
5. Haemoglobin is able to pick up carbon dioxide more easily when O<sub>2</sub> is released
7. Greater diffusion capacity for CO<sub>2</sub>/vasodilation within muscle

(ii) Describe the passage of deoxygenated blood through the systemic and pulmonary networks which allows carbon dioxide to be removed during aerobic performance.

[4]



RA = Right Atrium  
RV = Right Ventricle



1. Transported through capillaries/venules/veins/vena cava
2. Into right atrium
3. Through tricuspid/AV valve/tricuspid/AV valve closes to prevent backflow
4. Into right ventricle
5. Pumped via pulmonary artery to lungs
6. Through semilunar/semilunar valves shut to prevent backflow

**(iii) Identify two ways in which carbon dioxide is carried in the blood during aerobic performance.**

**[2]**

**mark first two only**

1. Dissolves in the plasma
2. Combines with haemoglobin
3. Forms carbaminohaemoglobin
4. Dissolves in water/forms carbonic acid/forms  $H_2CO_3$
5. In plasma dissociates to hydrogen ions/bicarbonate ions

**(iv) Why does an increase in carbon dioxide during exercise increase heart rate? How does this happen?**

**[3]**

Why

Increase in carbon dioxide changes pH/acidity

How **(sub max 2 marks)**

2. This is detected by chemoreceptors
3. Information sent to Cardiac control centre/CCC
4. Under autonomic control/autonomic nervous system (ANS)
5. Impulses sent via cardiac accelerator nerve
6. SA node is stimulated
7. Known as sympathetic control

**(v) Describe how the mechanics of breathing alter during exercise to expire greater volumes of carbon dioxide.**

**[3]**

1. This process becomes active
2. Due to internal intercostals contracting
3. Abdominal muscles contracting
4. Diaphragm pushed up harder/rib cage pulled in and down
5. Decrease in volume of thoracic cavity
6. Causing an increased pressure within thoracic cavity

## Section B

- 3 (a) The development of motor skills can be explained by Fig. 2. Explain each stage of Fig. 2.

[3]

(Motor abilities)

1. born with/innate/natural/genetic individual characteristics (e.g. speed/co-ordination)

(fundamental motor skills)

2. movement skills that form the basis of other skills/without FMS more specific sports skills cannot be developed (e.g. running, throwing, catching)

(Sport specific skills)

3. learned/goal directed movement related directly to a skill from sport we use ability and fundamental motor skills to develop sport specific skills (e.g. catching a cricket ball.)

- (b) Reaction time is important in many sports skills.

- (i) What is reaction time?

[2]

1. The time from the presentation of the first stimulus/onset of a stimulus...
2. To the start of a movement /initiation of a response

- (ii) Identify and explain three factors that can influence a performer's reaction time.

[3]

(The terms in brackets are insufficient alone – must be explained)

1. (Age) reaction time deteriorates with age
2. (Gender) males have faster reaction time than females
3. (Previous experience) experience of a skill speeds up reaction time
4. (Anticipation) predicting the forthcoming action
5. (Warning signals) information given prior to a stimulus
6. (Stimulus intensity) the strength /clarity of the stimulus
7. (Stimulus-response compatibility) expecting a particular response to a stimulus
8. (Predictability) expecting a stimulus to be presented
9. (Psychological Refractory Period) presentation of a second stimulus before the first has been cleared
10. (Body temperature) the colder the body the slower the reactions
11. (Limb use) arms react quicker than legs/length of neural pathway
12. (Personality) extroverts tend to have quicker reaction time than introverts
13. (Motivation) levels of motivation/arousal/alertness which affect reaction time
14. (Substances) drugs/alcohol can affect reaction time
15. (No of choices) more choices affect reaction time

**(c) Schema theory could be used to describe how a motor programme can be modified.**

**(i) Identify three sub-routines of a named motor programme.**

**[2]**

1. Name of motor programme (e.g. tennis forehand drive, swimming dive)
2. Sub-routines linked to named skill (e.g. grip, stance, backward preparation, forward movement, contact, follow through)

**(ii) Use an example from Physical Education or sport to explain recall and recognition Schema.**

**[4]**

**(2 marks max with no example)  
Must use practical example**

(Recall schema)

1. Information available prior to movement /information stored in the memory/previous experience
2. The initial conditions of a performer's body or the environment
3. The response specifications/what is required to perform the skill/choices of action available based on initial conditions

(Recognition schema)

4. Information available during and after movement.
5. Sensory consequences/kinaesthetic/internal/proprioceptive information about the performer gained during the skill.
6. Movement outcomes/result of the action performed.

**(iii) Why is variability of practice important to schema theory?**

**[1]**

1. Practice in a wide variety of conditions in order to extend the schema
2. To allow the development of a wide variety of parameters/guidelines

**4 (a) The learning of movement skills passes through three phases of learning according to Fitts and Posner.**

**(i) Name the three phases of learning.**

**[3]**

1. Cognitive
2. Associative
3. Autonomous

- (ii) **Give three characteristics of the first phase of learning.** [3]
1. Movement is jerky/co-ordination is poor/movement lacks fluency
  2. Performer uses much conscious thought/concentration is high/thinks about the skill/creates mental picture
  3. Trial and error learning
  4. Many mistakes made/inconsistent

- (iii) **Explain why a demonstration of the skill is important at the first stage of learning.** [2]
1. Helps performer build up a mental picture of the movement
  2. Performer has no experience to draw upon
  3. Performer watches to grasp requirements of the movement
  4. Focuses performer's attention to key aspects of the movement

**(b) Anticipation can play an important role in sport.**

- (i) **What is anticipation** [1]
1. Predicting (the outcome) of a movement /action before it occurs

- (ii) **Explain the effect of anticipation on response time** [2]
- 2 marks**
1. Can shorten response time if judgement is correct
  2. Can increase response time if judgement incorrect
  3. Correct anticipation allows extra time to produce movement

**(c) The control of physical movement can be explained through closed loop theory.**

**Use the example of a gymnast performing a handstand to explain closed loop control.**

**(sub max 2 with no example)  
Must use handstand example**

- [4]
1. Kinaesthetic/proprioceptive/internal feedback informs performer about position of the body
  2. Information goes to central control mechanism
  3. Comparison is made between actual movement and memory trace/perceptual trace
  4. Changes that may be required are initiated by the effector mechanism
  5. Muscular system adjusts the body
  6. Kinaesthetic /proprioceptive/internal feedback occurs again
  7. Level 2 involves sub-conscious control (with limited attention)
  8. Level 3 involves conscious control (with greater attention)



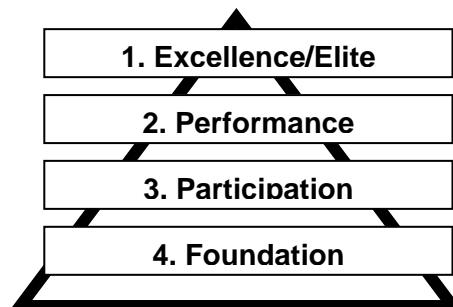
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RECOGNISING ACHIEVEMENT

Mark Scheme 2563  
January 2005

- 1 (a) Write the name of each stage of the performance pyramid on to Fig 1 above. [4]

1 for each of:



- (b) Identify four roles of a National Governing Body

Mark first four only irrespective of structure

[4]

4 marks for 4 of:

- |                        |   |
|------------------------|---|
| 1. (participation)     | encourage participation/develop grassroots  |
| 2. (excellence 1)      | select/prepare national team/improve performance standards/appoint national training personnel/management personnel |
| 3. (excellence 2)      | select performers for World Class Programme/talent ID   |
| 4. (training/coaching) | train coaches/officials   |
| 5. (finance)           | control finances of their sport/lottery/world class funding/seek sponsorship  |
| 6. (rules)             | maintain rules/oversee rule changes   |
| 7. (discipline)        | deal with discipline issues/drugs/drugs offences<br>Do not accept drugs testing                                     |
| 8. (liaison)           | work with other organisations/work with member clubs  |
| 9. (competition)       | organise competitions/leagues/appoint officials   |
| 10. (media)            | obtain media coverage/promote their sport   |
| 11. (information)      | give information/support clubs/general administration   |
| 12. (facilities)       | build/improve facilities for participation/excellence   |

- (c) With reference to the game of badminton identify key features of play and sport.

[6]

6 marks for 6 of – sub max of 4 – comparison not required

Badminton as play	Badminton as sport
1 Usually by children/sometimes adults	9 Usually teens and adults
2 Standard not important /low skill	10 Competence/skilfulness/prowess
3 Enjoyment the main motive/not serious/non-competitive/ fun/intrinsic/no clear outcome	11. Effort/commitment/training
4 Time decided by agreement/no set time	12 Outcome important/competitive/ extrinsic/ professional
5 Space/place decided by agreement/no set boundaries	13 Strict/set time
6 'Rules' changeable/equipment may be improvised/ 'no' officials	14 Fixed place/space/boundaries
7 A learning experience/physical/ social/ moral/environmental/ cognitive skills learned/escape reality/master reality	15 Strict adherence to rules/NGB/ sportsmanship/gamesmanship/ specialist equipment/ proper equipment/officials
8 Spontaneous/low organisation/ unplanned	16 May attract sponsorship/media
	17 Organised/structured/planned/ competitions

- (d) (i) What do you understand by the term Outdoor Education? Give an example of an Outdoor Education activity in your answer.

[3]

2 marks for 2 of:

1. (environment) Using the natural environment
2. (artificial facilities) Sometimes at artificial facilities/e.g. climbing walls/water sports centres
3. (learning) Learning/part of the national curriculum/formal teaching/ instruction
4. (risk & safety) Involves risk/challenge/requires strict safety procedures can be dangerous/challenge

**1 mark for example:**

5. (example) Any suitable example/e.g. walking/climbing/sailing/DofE

**(ii) What can young people gain as a result of a positive Outdoor Education?**

**[4]**

**4 marks for 4 of:**

- |                  |  |
|------------------|--|
| 1. (physical)    | Health/fitness   |
| 2. (skills)      | Must identify an outdoor education skill   |
| 3. (leadership)  | Leadership   |
| 4. (personal 1)  | Personal/well being/increased self esteem/confidence/a spiritual experience/mental strength/self awareness |
| 5. (personal 2)  | Decision making/problem solving  |
| 6. (social)      | Social/team work/co-operation/working together/communication   |
| 7. (preparation) | Preparation for active leisure/gain a love of the outdoors/a career in outdoor education/qualifications    |
| 8. (environment) | Appreciation of environment/awareness of conservation issues/pollution/respect for potential danger        |



2 (a) (i) What is meant by colonialism?

[1]

1 mark for explanation

Empire building/the taking over of previously independent regions of the world by dominant nations/policy of acquiring colonies

(ii) In what ways did colonialism change the life and physical activities of tribal cultures such as Samoa?

[4]

4 marks for 4 of:

1. (sports and pastimes 1) traditional sports and pastimes diminished
2. (sports and pastimes 2) new sports adopted/adapted/e.g. cricket/rugby
3. (military) Tribes overcome/weapons removed/guns introduced
4. (commercial) new trade reduced independence of ethnic community
5. (religion) pagan worship curtailed/Christianity imposed/tribal ceremonies/rituals/festivals reduced
6. (education) education/English style schools opened
7. (law and order) new governing/police system/role of traditional headman reduced/status of wrestling as selection of head man reduced.

**(b) Identify and explain features of sport in emergent countries such as Kenya.**

**[6]**

**6 marks for 6 of (one for identification and one for explanation)**

<b>Identification</b>	<b>Explanation... Sport can....</b>
1 Stability	2 Increase stability in countries with new governments
3 Health	4 Develop a healthy society/health conscious society/alternative to crime or drugs
5 Nation building/shop window	6 Increase national pride/international respect
7 Integration	8 Bring parts of the nation together/bring tribes/islands together
9 High profile sport or event eg Olympic Games	10 Chosen for optimum exposure/media coverage
11 Defence	12 Creation of high profile defence to protect country/military and police often organise sport/fitness for defence/Social control
13 Low technology/cheap	14 Simple/natural sports chosen
15 Role Models	16 Used to inspire youngsters
17 Selection/elitist	18 Limited range of sports/focus on top performers
19 Unequal funding/disproportionate	20 Most funding concentrated on one or two sports
21 Economic	22 Improved economy/increased tourism/increased investment

**(c) Define sport sponsorship and identify possible negative effects of sponsorship to sports performers.**

**[4]**

**4 Marks in total**

**1 mark max. for:**

The giving of money/other support (e.g. kit) to individuals/teams/events/ organisations to get publicity/a financial benefit.

Negative effects of sponsorship on performers

**3 marks for 3 of:**

- |               |  |
|---------------|--|
| 2. (security) | money can be withdrawn/given for limited time        |
| 3. (image)    | some sponsorship can give poor image e.g. alcohol    |
| 4. (control)  | sponsors can control/manipulate performers/performer |

- |                    |   |
|--------------------|---|
| 5. (exploitation)  | may not like the sponsors product/be forced to wear certain kit |
| 6. (availability)  | performers may be or feel exploited/loss of privacy             |
| 7. (reliance)      | not always available/not available to all                       |
| 8. (dysfunctional) | performers may be reliant on a particular sponsor               |
|                    | pressure to cheat/win at all costs                              |

**(d) Discuss the links between high level sport, sponsorship and the media**

**[6]**

**6 marks available: Levels mark scheme**

**Annotations**

- |                                   |  |                      |
|-----------------------------------|--|----------------------|
| <b>M</b> - (media negative )      | <b>MS</b> - (Media/Sponsorship) negative | <b>Eg</b> (Example)  |
| <b>S</b> - (sponsorship positive) | <b>MS +</b> (Media/Sponsorship) positive | <b>J</b> (Judgement) |
| <b>M +</b> (media positive)       |  |                      |
| <b>S +</b> (sponsorship positive) |  |                      |

**Level 3 : 5 – 6 marks**

- A well developed answer
- An answer showing sound knowledge and understanding of the strong links between high-level sport, sponsorship and the media
- Developed discussion
- The answer is likely to be well structured
- ... and may include some independent thought/judgement/opinion on the issue
- To be at the top of this level all three components of the question must have been understood and addressed

**Level 2 : 3 – 4 marks**

- A developed answer
- An answer showing knowledge of the relationship between high level sport, sponsorship and the media but the answer may lack balance
- Discussion may be limited
- Some structure evident
- Judgement & / or independent opinion is likely to be lacking

**Level 1 : 1 – 2 marks**

- A simplistic / narrow / limited answer
- An answer showing limited knowledge or understanding of the links between high-level sport, sponsorship and the media
- ...with facts rather than discussion
- This is likely to be a disjointed answer lacking in structure
- At the bottom of this level there will be little grasp of what is relevant to this issue





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RECOGNISING ACHIEVEMENT

Mark Scheme 2565  
January 2005

## Section A

## Historical Studies in Physical Education

## 1 (a) Modern track and field athletics has roots in popular recreation.

Describe pedestrianism and outline its attraction as a popular recreation.

[4]

4 marks for 4 of:

Sub-max of 3 for description:

## Description:

- |                        |   |
|------------------------|---|
| 1. (foot race)         | foot race   |
| 2. (wagering)          | betting widespread  |
| 3. (footmen)           | footmen employed as messengers/competitive runners  |
| 4. (patronage)         | lower class runners patronised by gentry  |
| 5. (occasion)          | became huge festival occasions/associated with prize fighting/horse racing  |
| 6. (E.g.)              | example of pedestrian: Robert Barclay Allardice walked 1000 miles in 1000 hrs/Deerfoot the Native American/visited England in 1860s |
| 7. (violence/cheating) | cheating common/match fixing/violence in crowd/pedestrianism brought into disrepute   |
| 8. (gentlemen)         | gentlemen amateurs competed/to test themselves  |
| 9. (rules)             | challenge rules established by organisers   |

## Attraction:

- |                |  |
|----------------|--|
| 10. (festival) | a festival occasion/popular spectacle/exciting contest.(if not given in 5 above) |
| 11. (money)    | prize money for competitors /fame/status/money for food/occupational             |
| 12. (simple)   | cheap/simple activity  |

(b) By the mid to late 19<sup>th</sup> century, urban track and field athletics meetings were extremely popular with athletics having a strict class divide.

Identify reasons why there was a class divide in late 19<sup>th</sup> Century athletics.

[2]

2 marks for any 2 of:

- |                       |   |
|-----------------------|---|
| 1. (exclusivity 1)    | middle class keen to separate themselves from working class/ /keen to stay exclusive  |
| 2. (exclusivity 2)    | keen to disassociate respectable modern athletics from old corrupt professional form  |
| 3. (exclusion clause) | exclusion clause imposed/no mechanic, artisan (skilled worker) or labourer could join/AAC enforced exclusion clause   |
| 4. (wc)               | lower classes ran to make money/winnings small by pre-industrial standards  |
| 5. (m/c)              | middle class competed for intrinsic rewards/to test themselves  |
| 6. (m/c u/c)          | keen to re-create public school ethics/fellowship/middle class/upper class Gentlemen amateurs formed their own club/the Amateur Athletics Club/1866 Amateur Athletics club formed |

(c) 19<sup>th</sup> century public schools went through three stages of development.

Outline each of the three stages of development with reference to athletics in each stage. [9]

#### LEVELS MARKED QUESTION

Historical part:	
Level 3 (7/9 marks)	At the top of this level candidates will cover all 3 stages giving at least 3 details from each stage and an appropriate reference to athletics for each stage
Level 2 (4/6 marks)	Candidates clearly outlined all three stages. Details of the stages will be limited and at the bottom of the level, reference to athletics also limited
Level 1 (1/3 marks)	2 or more stages will be outlined with superficial detail and implied reference to athletics

	Stage 1	Stage 2	Stage 3
<b>Athletics through the Stages:</b>			
(Rules)	1 Hare and hounds/ adaptation of 'the hunt'/paper chase activities/limited rules	8 Influence of Exeter College Oxford/beginning of athletics meetings/cross country running/adaptation of steeple chasing/some rules	15 Athletics sports day/great festival occasion/annual spectator event Governing Body/ formalised rules
<b>Stages:</b>			
(Organisation)	2 Institutional popular recreation/boy culture/all recreation organised by and for boys themselves	9 A interim period/boys still organised activities /masters more supportive	16 A full games and athletics programme /full master support/involvement/bl ues
(When)	3 Participation in free time/when not in lessons	10 Inter-house matches	17 Inter-house and inter-school matches
(Values)	4 Participation for fun/recreation	11 Boys behaving as Christian gentleman/ development of good personal qualities	18 Participation for character development /useful qualities/e.g. leadership/co-operation/sportsmanship/etc
(Social Control)	5 Boys behaving as hooligans/bullying and brutality/expansion stage/time of rebellion/emphasis on force not skill	12 Social control/time of reform	19 Boys behaving as Corinthians/some excellent all round performers /emphasis on skill not force
(Facilities)	6 Simple/natural facilities	13 Some standardisation/some	20 Purpose built facilities opulent games

	specialist of facilities	field etc.
(Era)	7 Barbarian 14 Arnoldian/Dr Arnold/Head of Rugby School	21 Athleticism/"cult" of athleticism/time of obsession for games/compulsory participation in most schools every day

(d) Physical activity for Elementary School children changed considerably between 1902 and 1954.

With reference to objectives, content and methodology, identify key features of two of the following:

- The 1902 model course
- The 1933 syllabus
- Physical Education in the 1950s (moving and growing/planning the programme)

[6]

MARK 1<sup>st</sup> TWO ONLY

6 marks for 6 of:

3 max for each syllabus chosen (1 from objective, 1 from content, 1 from method)  
(marks should only be awarded for two syllabuses).

	1902 Model Course	1933 Syllabus	1950s (Moving & Growing: Planning the Programme)
Objectives	1. Fitness for military service/training in handling weapons/discipline	4. Physical fitness/therapeutic results/health/good physique/good posture/development of mind and body/holistic aims	7. Devt. of physical /social/cognitive skills/ variety of experiences/enjoyment/ personal satisfaction/personal development/involvement of all
Content	2. Military drill/marching/weapons training/deep breathing	5. Athletics/gymnastic/games skills/group work	8. Gymnastics/dance /games skills/swimming/movement to music/agility exercises/apparatus work
Methodology	3. Command style (e.g. 'attention.)/In ranks/group response/no individuality/NCO led	6. Mainly direct style/centralised/some decentralised parts/teacher led Outdoor recommended/some gymnasias	9. Child centred/creative/discovery/ exploration/individual interpretation of tasks/problem solving/enjoyment orientated/progressive

[Total : 21 marks]



**2 The cultural background of USA, Australia and France lead to different approaches toward Physical Education and Sport.**

**(a) Identify the cultural factors that make outdoor education an important subject in Australian schools?**

**[4]**

- 1 (Affluence) - Population/can afford to engage in outdoor activities
- 2 (Climate) - Climate favourable to outdoor lifestyle e.g. beach culture
- 3 (Frontierism/Bush Culture) - Outdoor Education experiences reflect frontier legacy of colonial times
- 4 (Colonialism) - Influence of 'Motherland' and traditions of outdoor activities
- 5 (Nationalism) - Pride in country
- 6 (Urbanisation) - A need to explore the outback /escapism
- 7 (Demography) - Small population makes for expansive unpopulated areas
- 8 (Landscape) - Genuine wilderness exists/uncharted territory no population
- 9 (Survival) - Necessary in a country with inhospitable climate and terrain

**(b) Identify the cultural factors which have prevented cricket from becoming a popular game in USA.**

**[2]**

- 1 (Outcome) Drawn match unacceptable/win at all costs
- 2 (Nature of Game) Cricket not dynamic/physical enough
- 3 (Spectacle) Cricket perceived in USA as un-sensational/not entertaining enough
- 4 (Values/traditions) Cricket reflects middle class English values/traditions not suited to USA
- 5 (Isolation) Policy meant that USA rejected English games
- 6 (Frontierism) - Ethic is missing from cricket/cricket emphasises gentlemanly conduct

**(c) Explain why achievement in sport is increasing among ethnic minorities in the USA.**

**[4]**

- 1 (Opportunity) - Ethnic groups have more opportunity to play/improved/increased provision
- 2 (Esteem) - Increase in cultural esteem of ethnic groups
- 3 (Beliefs) - Confidence in abilities
- 4 (Representation) - Increased representation in major sports
- 5 (Take over) Ethnic groups taking over as players in major sports/disproportionate representation e.g. 'White flight' syndrome in basketball
- 6 (Media) promotion of ethnic group success/role models
- 7 (Societal) USA society are increasingly tolerant of ethnic culture in late 20<sup>th</sup> & 21<sup>st</sup> century/less discrimination/more acceptable

(d) Name one rural sport played by the Basque people in south-west France and explain the function of this sport in Basque society.

[3]

**Identification of one Basque rural sport 1 mark**

- 1 Bull fighting
- 2 Strongman contests include hay bale raising/wood chopping and sawing/anvil lifting rock lifting

**Function of Basque Rural sports/Submax 2 from:**

- 3 (Local) significance/pride/champion performer
- 4 (Manliness) - Proof/endorsement of
- 5 (Community) - Promotion of rural unity
- 6 (Appeasement) - Of people who perceive themselves as independent from mainstream France (and Spain)
- 7 (Cultural) - Perpetuation of identity
- 8 (Opportunities) - Commercial/tourist attraction/betting

(e) (i) Outline the provision made in France to develop excellence in sport.

**3 marks for 3 of:**

[3]

- 1 (Organisation) INSEP
- 2 (Facilities) Specialist centres of excellence/5 National State administered centres of excellence (e.g. National School of Sailing (ENV) at Saint Pierre Quiberon)
- 3 (Training Camps) Training Centres - Altitude training e.g. Font Romeu
- 4 (Funding) Direct Government involvement e.g. funding

(ii) By referring to the cultural background of France explain why success in sport is of national importance.

[5]

**Levels Marked Question**

<b>Comparative part (e)</b>	
Level 3 (5 marks)	Candidate explains at least three points in detail.
Level 2 (3,4 marks)	Candidate identifies at least three points with some attempt to develop.
Level 1 (1,2 marks)	Reasons why success is important are identified without explanation.

- 1 (Nationalism) Pride in country
- 2 (Historical) Sport has been the traditional rallying point of nationalism/Sport raised morale of nation after World War 2 land collapse of the Empire
- 3 (Identity) - Excellence creates national identity and credibility
- 4 (Location) - Success offsets vulnerability of location in Europe
- 5 (Fraternity) - Achievement in sport unites the Republic
- 6 (Integration) - Success unites ethnic groups with mainstream culture
- 7 (Militarism) - Excellence reflects the French association with the armed forces
- 8 (Culture) - Achievement in sport reflects the aspiration of high culture
- 9 (Intellectualism) - Sport is increasingly being linked to knowledge and high culture
- 10 (Naturalism) - Excellence in sport is demonstrated through outdoor pursuits/ (and) Tour de France
- 11 (Egalitarianism) - Sport represents equality
- 12 (Liberty) - Excellence operates within the free spirit of nation e.g. independence

[Total : 21marks]

**Three marks are available for the quality of Written Communication used in answer(s) to question(s) in Section A.**

- High:** A well reasoned, well ordered developmental explanation, in clear concise, continuous prose. Sentences and paragraphs follow on from one another smoothly and logically. There will be few, if any errors of grammar, punctuation and spelling. **3 marks**
- Middle:** Reasoned statements employing sound use of language. Candidate expresses straightforward ideas clearly. Sentences and paragraphs may not always be connected. There may be some errors of grammar, punctuation and spelling, but not such as to suggest a weakness in these areas. **2 marks**
- Low:** An attempt at explanation with limited quality of language. The candidate expresses simple ideas clearly, but may be imprecise and awkward in dealing with complex or subtle concepts. Errors in grammar, punctuation and spelling may be noticeable and intrusive suggesting weaknesses in these areas. **1 mark**

## Section B

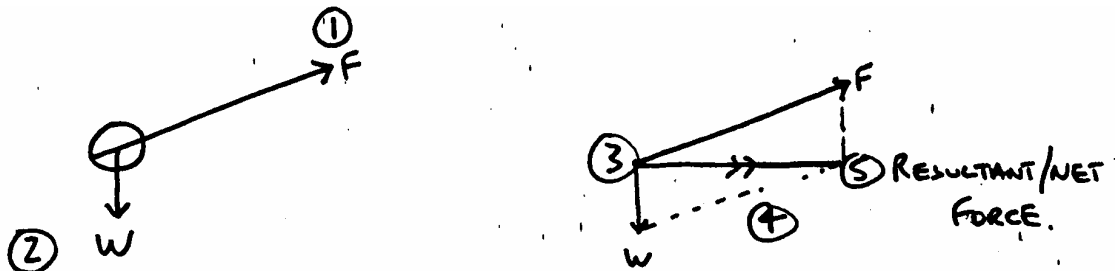
## Biomechanical Factors Involved in Human Movement

- 3 (a) (i) Sketch and label a diagram showing all the forces acting on the ball at the moment of contact. Show how you could work out the resultant force acting on the ball.

[5]

2 marks for:

- 1 (Action) force / F (from edge of ball)
- 2 Weight / W (from CM)



3 marks for:

- 3 Force and weight from same point
- 4 Parallelogram Law (dotted lines)
- 5 Resultant/Net force

- (ii) Using Newton's laws of motion explain the effect of the resultant force acting on the ball.

[4]

4 marks in total from:

(Points must relate to correct law)

1. (Newton 1) - The ball remains stationary until it is kicked
2. (Newton 2) - The ball will accelerate proportionally to the size of the (resultant) force acting upon it/larger the force the further/faster it will go
3. The ball will accelerate in the direction of the (resultant) force
4. (Newton 3) - The foot applies a force to the ball, therefore
5. the ball applies an equal and opposite force to the foot

- (b) (i) Define the term impulse. Using the information on the graph, estimate the value of the impulse of force acting on the ball during the execution of the corner kick.

[3]

1. Impulse = Force x time / Ft / Change in momentum/  $mv - mu$
2. Impulse = Area under Ft curve  
 $= \frac{1}{2} \times 0.1 \times 200$
3. = 10Ns (Units must be correct)

- (ii) If the mass of the football is 400g, calculate its outgoing velocity.  
NB e.c.f.

[2]

1.  $Ft = mv - mu$  /change in momentum  
 $10 = mv$   
 $v = \frac{10}{0.4}$
2.  $v = 25 \text{ ms}^{-1}$  (units must be correct)

- (c) When taking a corner kick many players apply sidespin which makes the ball swerve. Draw a diagram showing airflow patterns around the ball during flight after it has been struck with sidespin. Explain how sidespin causes the ball to swerve.

[7]

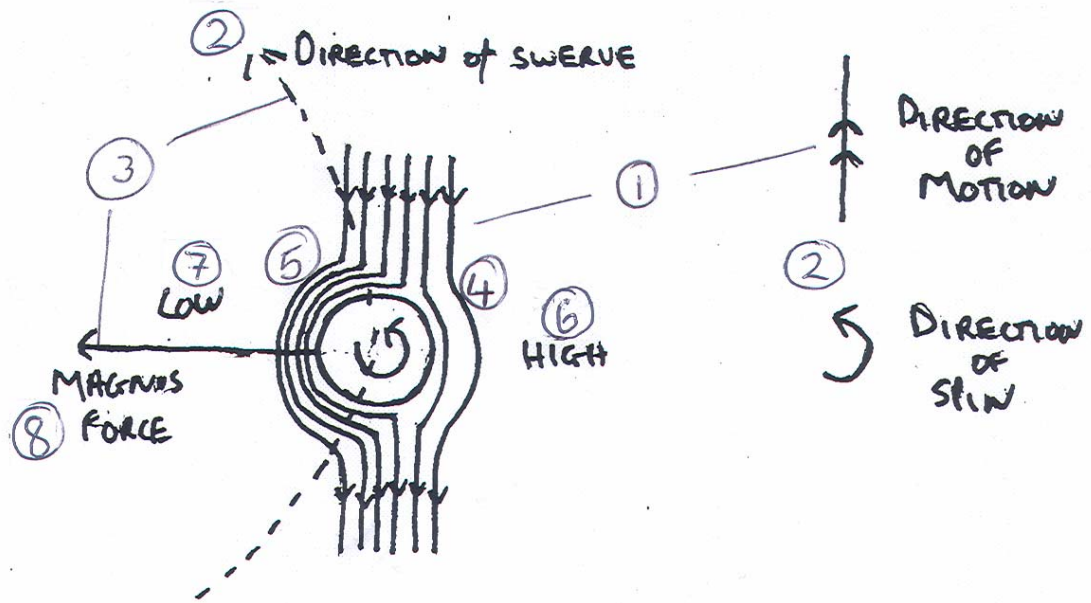
Levels Marked Question:

Biomechanics part (c)	
<b>Level 3 (6/7 marks)</b>	Candidates will give a detailed diagram which offers a full explanation of the effect of side-spin on the flight path of the ball. Explanation may not be on the diagram and will refer to both air flow and explanation of swerve.
<b>Level 2 (4/5 marks)</b>	The diagram will be mainly accurate and although explanation is attempted it may lack clarity and some coherence.
<b>Level 1 (1/3 marks)</b>	The diagram will be basic with important features missing or inaccurate. Little attempt to explain how sidespin causes the ball to swerve.

(Answers can be either on diagram or in explanation)

1. Airflow line arrows opposite direction of motion
2. Direction of spin in relation to direction of swerve
3. Direction of swerve (must relate to direction of magnus)
4. Wide airflow lines on side away from direction of swerve
5. Narrow airflow lines on side of direction of swerve
6. High pressure where airflow lines are wider
7. Low pressure where airflow lines are narrower
8. Direction of force at right angle to direction of travel
9. Force is called Magnus effect (must be from high to low)
10. Air travels further on low-pressure side of ball
11. Air travels faster on low-pressure side of ball
12. Pressure gradient from high to low (causes Magnus effect)

Viewed from above



[Total : 21marks]

- 4 (a) It is generally recognised that an individual's motivation in sport depends upon their personality. The two main personality types related to *achievement motivation* are: the need to achieve success and the need to avoid failure.

[4]

- (i) Use examples from sport to describe one of these personality characteristics.

1<sup>ST</sup> MARKED ONLY

4 marks for 4 from:

(personality characteristics Nach / NAF) Use examples from sport  
Submax 2 for no practical examples

**(Nach)**

1. Likes a challenge/take risks
2. Not afraid of failing
3. Likes feedback
4. Sees failure as an essential aspect on the road to success
5. Is more competitive/approach behaviour/outcome behaviour/want to win
6. Generally high achievers
7. More persistent on task/doesn't give in
8. Takes responsibility/internal attributions
9. High self efficacy/is confident

**OR****(Naf)**

10. Does not like challenge/take the easy route/avoids risks
11. Avoids competitive situations/avoidance behaviour/want to avoid shame
12. Dislikes feedback/only interested in positive feedback
13. Low self efficacy/lacks confidence
14. Gives up easily/may not complete task
15. Does not take responsibility for own actions
16. Attributes success externally
17. Prone to learned helplessness
18. Attributes failure internally/externally

- (ii) Using a practical example, explain how a coach could encourage a performer to adopt a need to achieve rather than a need to avoid failure approach.

[3]

3 marks for 3 from:

Submax 2 for no practical examples

**(encouraging Nach)**

1. Raise self-esteem/give success/raise confidence/achievable goals
2. Set performance/process goals
3. Show successful models/vicarious experiences/role models
4. Verbal persuasion/give encouragement/give positive reinforcement/reminder of past performance accomplishments
5. Lower arousal levels/calm them down/give relaxation strategies
6. Attributional retraining/attribute internally rather than externally/decrease shame linked to failure

- (b) (i) **What are the possible psychological effects on a sports' performer when an audience is present?**

[4]

Levels Mark Question:

<b>Psychology</b>	
Level 3 (4 marks)	Candidates explain at least 3 effects which offers a full development.
Level 2 (3 marks)	Candidates identify at least 3 effects with some attempt to develop or exemplify.
Level 1 (1/2 marks)	Candidates identify effects without any attempt to develop or exemplify.

1. Arousal/drive/anxiety increased
2. Dominant response/habit more likely to occur/learned responses automatic/motor programmes are run
3. Weaker players/novices performance deteriorates (incorrect dominant response)/good performances from well learned/stronger/elite
4. Extroverts likely to perform better with an audience/Reticular-activating system (RAS) favours extroverts when audience present/introverts likely to perform worse with audience present/RAS does not favour introverts
5. Gross skills performance may increase/fine skills performance may decrease
6. Simple skills performance may increase/complex skills performance may decrease
7. If audience in familiar setting performance helped/'homefield' advantage/disadvantage/unfamiliar
8. Anxiety raised by being judged/perceived judgement of others/evaluation apprehension
9. The nature of the audience/significant others
10. Size / proximity of the audience/how close the crowd are to the player
11. Distractions-Conflict theory
12. Hostile/partisan crowd behaviour
13. Attention narrowing/widening/cue utilization

- (ii) **If an individual's performance is inhibited by the effects of an audience, how could a coach help the performer to overcome these effects?**

[3]

3 marks for 3 from:

1. Use of selective attention/concentration/avoiding distractions/block out crowd
2. Mental rehearsal/practice/imagery/visualisation
3. Positive self-talk/positive thinking/negative thought-stopping
4. Practice with an audience present/in training
5. Learn skills thoroughly/develop motor programmes
6. Decrease importance of event/reduce perceived accountability
7. Increase self-confidence/self-efficacy/social support/encouragement from others



**(c) Aggression is an unwelcome feature of sport.**

- (i) Define the term aggression as used in sports' psychology. Use social learning theory to explain how aggressive behaviour in sport is learned.**

**[3]**

**1 mark for:  
(definition)**

Intent to harm/injure outside the rules of the game/illegal/violent

**2 marks for 2 of:  
(Social learning theory)**

1. Learn behaviour from significant others/role models
2. Watching/observing others who are aggressive likely to be copied/vicarious processes
3. Reinforcement of aggressive behaviour will increase chance of copying
4. Copying more likely if same sex/attitude/age/ability
5. Live/realistic models more likely to be copied

- (ii) Give four cognitive strategies a performer might use to eliminate aggressive tendencies in sport.**

**[4]**

**4 marks for 4 of:  
(control of aggression)**

1. Count to ten/mantra/concentrate on repeating words/phrases
2. Imagery/imagine calm/control/quiet place
3. Mental rehearsal of activity/imagining ones own actual movement
4. Forgetting/distancing from aggressive cues/walking away/removing yourself from situation/thought stopping
5. Displace feelings/play harder/take it out on someone/something else
6. Take up an activity, which will release tension/aggression/take an interest/be motivated by non-aggression
7. Reasoning with ones-self that aggression is wrong/remembering consequences/recognising implications of aggression/knowing the punishment/self-talk/positive thinking

**[Total: 21marks]**





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RECOGNISING ACHIEVEMENT

Mark Scheme 2566  
January 2005

## Section A

- 1 (a) Define the terms energy, work and power, giving the units of measurement for each. [3]

3 marks (units of measurement must be given)

Quantity	Definition	Units
(Energy)	1. The capacity/ability to perform work	Joules/J/calories
(Work)	2. The product of force multiplied by distance/ Work done = Force x Distance	Newton metres/Nm/Joules/J/calories
(Power)	3. The rate at which energy is created/used/a combination of strength and speed/ Power = $\frac{\text{Force} \times \text{Distance}}{\text{Time}}$ / $\frac{\text{Work done}}{\text{Time}}$	Watts/W/Joules/s/Js <sup>-1</sup> / Newton.metres/s/Nms <sup>-1</sup>

- (b) ATP is a most important compound.

Explain why ATP plays such a major role during physical activity. [3]

3 marks

- The only usable form of energy in the human body/energy currency that powers all forms of biological work/immediate
- A high energy phosphate compound/the outer two phosphate bonds are high energy bonds/a store of potential energy
- When the terminal phosphate bond is broken energy is released/ATP is broken down to release energy/ **ATP → ADP + P + ENERGY**
- An exothermic reaction
- Facilitating enzyme is ATPase
- Can be resynthesised (via the energy systems/with or without oxygen)
- The breakdown and resynthesis of ATP is a reversible reaction/



- (c) A trained athlete can perform at a higher percentage of their VO<sub>2</sub> max before reaching OBLA than untrained person.

- (i) Explain OBLA. [3]

3 marks

- Onset of blood lactate accumulation
- The point at which the aerobic energy system can no longer reach the body's demand for ATP/not enough oxygen
- Occurs when the body converts to anaerobic energy supply/anaerobic threshold
- Causing a large accumulation/rapid increase of lactic acid in the blood/blood lactate reaches 4mmol/l
- Therefore exercise above OBLA can only be maintained for a short while/approximately 1 minute/fatigue/pain occurs

- (ii) Describe how an athlete would make use of the principles of training when designing a training programme aimed at delaying OBLA. [6]

**NB: Principle must be explained for mark and applied to aerobic training where possible.**

1. (overload:) body must be put under stress/made to work harder/longer/more frequently than usual
2. (F = frequency): at least 3 times a week
3. (I = intensity): 50% - 75% of  $VO_2$  max/low/moderate intensity
4. (T = time): at least 20 minutes
5. (T = type): aerobic (and anaerobic) training/continuous/interval/fartlek/circuit
6. (progression:) as the body adapts further increases in frequency/intensity/time must follow to ensure continued improvements
7. (specificity:) training should be relevant/specific to the sport and the individual
8. athlete must train the aerobic system/SO/FOG muscle fibres
9. (reversibility:) athlete must train consistently to avoid a deterioration in performance
10. (moderation:) need for realistic targets that do not put too much stress on the body too soon/avoid overtraining/risking injury
11. (variance:) include a number of different training methods to maintain interest/enthusiasm/avoid boredom
12. (warms ups/cool downs:) avoid injury and minimise the risk of muscle soreness/DOMS

**[15 marks in total]**

**Section B****Question 2 (Scientific Focus)****Part One****(a) Application of Anatomical & Physiological Knowledge to Improve Performance**

**"There can be no motion without force."**

**Using your understanding of Newton's laws, explain this statement giving examples from a team game of your choice.**

**Markscheme (submax 6 marks)**

1. There is a direct link between force and motion
2. (Rest – N1) a body continues in a state of rest unless acted upon by an external force/force is required for a body to start moving e.g. the force of a hockey stick on a hockey ball causes it to start moving
3. (Constant velocity – N1) a body continues in a state of constant/uniform velocity/speed unless acted upon by an external force
4. (Acceleration – N2) the acceleration of an object is directly proportional to the size of the force acting on it/ $F = ma$  e.g. at the start of a hockey match, if the CF wants to pass back to the CM who is close by, she applied a small force compared to sending the ball up field using a large force
5. (Direction – N2) object moves in the same direction as the force
6. (Reaction – N3) for every action there is an equal and opposite reaction/whatever force object A applies on object B, object B will apply an equal and opposite force on object A
7. (Inertia / mass) the effect of the reaction force will depend on the inertia of object A e.g. as a player hits a hockey ball they will impart a force to it to cause it to move. At the same time, the ball will impart an equal and opposite force on the player. However, the effect of this force is minimal in this example as the player has a much larger inertia than the ball and the force is not sufficient to cause the player to move in the opposite direction to the ball
8. (No motion) you can have force without motion
9. (Balanced forces) if the forces are balanced/net force = 0 on a body it is in a state of equilibrium e.g. two players in a tackle in hockey. Player A exerts a force on the ball that is equal and opposite to the force exerted by player B. The ball remains stationary, trapped between the two players' sticks

**At full time in a team game, players will enter a period of recovery, during which the body will return to its pre-exercise state.**

**Describe how the sensory receptors inform the cardiac control centre that exercise has stopped at the end of the match.**

**Markscheme (submax 6 marks)**

**Sensory receptors**

(when exercise stops:)

[CCC = cardiac control centre]

11. **Proprioceptors** (in the muscles/tendons/joints)
12. (inform the CCC) that activity levels have decreased
13. **Chemoreceptors** (in the muscles/aortal carotid arteries)
14. (inform the CCC) that lactic acid/CO<sub>2</sub> levels have decreased/that O<sub>2</sub>/pH levels have increased
15. **Baroreceptors** (in the aorta/carotid arteries)
16. (inform the CCC) that blood pressure has decreased

**After the final whistle, it is recommended that players complete a cool down. Describe the physiological benefits of an active cool down.**

**Markscheme (submax 6 marks)**

(an active cool down:)

17. reduces the risk of injury
18. reduces the possibility of DOMS/delayed onset of muscle soreness (L)
19. (keeps metabolic activity levels elevated) which gradually decreases HR / RR (L)
20. maintains respiratory pump
21. maintains muscle pump
22. to prevent blood pooling in the veins/enhance venous return (L)
23. which maintains SV/Starling's law of the heart (L)
24. keeps capillaries dilated to flush muscles with oxygenated blood/remove lactic acid CO<sub>2</sub> (L)

**TOTAL KNOWLEDGE MARKS = [13]**

**APPENDIX - Possible links within (NB not intended to be exhaustive)**

**"There can be no motion without force."**

**Using your understanding of Newton's laws, explain this statement giving examples from a team game of your choice.**

Effect of size of force

Effect of direction of force

Direct v eccentric force in relation to type of motion produced or position of centre of mass

Stability related size of force needed - lower CoM or larger base = more force needed for motion

**At full time in a team game, players will enter a period of recovery, during which the body will return to its pre-exercise state.**

**Describe how the sensory receptors inform the cardiac control centre that exercise has stopped at the end of the match.**

Conduction system of the heart

Hormonal regulation of the heart to also reduce HR

Intrinsic regulation of the heart to also reduce HR

Vasomotor control of blood supply after exercise

Neural control of respiratory rate after exercise to tie in with HR

Chemical control of respiratory rate after exercise to tie in with HR

**After the final whistle, it is recommended that players complete a cool down. Describe the physiological benefits of an active cool down.**

Control of HR

Control of blood supply

Control of RR

Respiratory response during exercise

Enhanced lung volumes

Enhanced gaseous exchange



**(b) (Acquiring and Performing Movement Skills)**

**Describe the types of guidance used when teaching movement skills to a novice. Write a set of guidelines for a coach about how and when these guidance methods should be used to teach a novice movement skills in sport. When teaching movement skills, both whole and part practice methods could be used. In what circumstances should the part practice be used?**

**(Types of guidance – description)****5 Marks Max**

1. Visual guidance helps the learner to develop a mental image of movements
2. (visual) Such as a demonstration/video/wall chart
3. Verbal guidance helps learner to understand requirements
4. (verbal) Such as coach explanation/instructions/feedback during activity
5. Manual guidance involves physical support/support from others
6. Mechanical guidance involves support through devices/physical aids/equipment
7. (Manual/Mechanical) helps kinaesthesia/feel for movement
8. (Manual/Mechanical) can create a forced response/shaping

**(Guidelines for a coach)****5 Marks Max****(Visual) [Or if relevant to other guidance methods]**

9. Demonstrations should be accurate/correct/use an accurate model
10. Demonstrations should hold the learners attention/motivating/interesting
11. Should not be too time consuming
12. Should be repeated to be remembered
13. Should be relevant to the needs of the learner/demonstration achievable
14. Use of slow motion for video play-back
15. Take into consideration position of learner in relation to the demonstration
16. Useful in cognitive stage of learning/early stage of learning

**(Verbal) [Or if relevant to other guidance methods]**

17. Instructions must be accurate/correct
18. Instructions should be clear and simple (for novice)
19. Be encouraging/motivating/use positive reinforcement/feedback/praise
20. Do not speak for too long/keep the attention of the learner/relevant
21. Should compliment visual in early stages/cognitive stage of learning
22. Use of questioning should encourage learning
23. Use verbal feedback to give knowledge of results/performance

**(Manual/mechanical) [Or if relevant to other guidance methods]**

24. Use to reduce fear/give sense of security for dangerous tasks
25. Do not overuse/not too much support (over-reliance restricts learning)
26. Remove as soon as possible
27. Should not restrict movement too much
28. Regularly check equipment/health and safety requirements

**(When to use Part Practice)****5 marks max**

29. Use for skills with low organisation/can be easily split into sub-routines/for serial skills
30. In early/cognitive stage of learning
31. Raises confidence in early stage of learning
32. If skill is complex/lots of information to process/to increase understanding of movement requirements
33. To ensure safe practice/if injured
34. To increase likelihood of success/motivating through success
35. Improve aspects/subroutine of a skill

**(c) Part 2 (Exercise & Sport Physiology)**

The body uses oxygen during recovery from exercise resulting in an elevated rate of aerobic respiration. The first stage of this process involves the breakdown of glycogen to pyruvic acid.

Describe the remaining stages that use oxygen to complete the breakdown of glycogen.

**Markscheme (submax 8 marks)**

1. (Stage 2) is Kreb's cycle/TCA/citric acid cycle
2. Pyruvic acid is broken down/converted to form acetyl CoA/Coenzyme A
3. A complex cyclical series of reaction occur
4. In which acetyl CoA combines with oxaloacetic acid/citric acid is formed
5. CO<sub>2</sub> is formed
6. Hydrogen is removed/oxidation occurs
7. There is an energy yield of 2 molecules of ATP
8. Oxaloacetic acid is regenerated
9. The reaction occurs in the (matrix) of the mitochondria
10. (Stage 3) is the electron transport system/chain/ETS/ETC
11. Hydrogen atoms are transported to the cristae of the mitochondria
12. Where electrons are removed/oxidative phosphorylation
13. Hydrogen ions combine with O<sub>2</sub>/water is formed
14. There is an energy yield of 34 molecules of ATP/total energy yield 34 – 38 ATP

**An ergogenic aid is any substance that enhances performance.**

**Discuss the following as aids to enhancing performance**

- the use of dietary manipulation
- pre competition meals
- post competition meals

**Markscheme**

(dietary manipulation) **sub max 5**

15. Use of carbohydrate/glycogen loading
16. Glycogen stores are depleted a week before competition
17. By heavy training/eating a diet rich in protein/fats/low in carbohydrates
18. 3 - 4 days prior to competition training is tapered/reduced/performer eats a diet rich in carbohydrate
19. The body compensates for its previous lack of carbohydrate
20. Storing more glycogen than before/increasing glycogen levels
21. Benefits endurance/~robic athletes/games players
22. (Negative effect) is quality of training may be compromised/feelings of weakness during glycogen depletion stage
23. (Negative effect) is possible weight increase/water retention/muscle stiffness/soreness
24. (Negative effect) could be possible depression/irritability during the depletion phase

(pre-competition meal) **sub max 2**

25. These should be eaten 2-4 hours before competition
26. To ensure that glycogen stores are high
27. Glucose can also be eaten immediately before competition
28. Benefits any performer who relies on the breakdown of glycogen for energy e.g. aerobic performer/games player
29. (Negative effect) if consumes too close to competition can have detrimental effect
30. (Negative effect) high blood glucose levels will stimulate the release of insulin that will remove glucose from the blood stream/causing early fatigue/hypoglycaemia

(post competition meal) **sub max 2**

31. The optimal time is within 2 hours of end of exercise
32. As rate of muscle glycogen replacement is at its quickest
33. Eat a carbohydrate rich meal
34. Benefits any performer who has used glycogen as their fuel for exercise e.g. aerobic performer/games player

**[Total Knowledge Marks = 13]**

**APPENDIX - Possible links within (NB not intended to be exhaustive)**

**The body uses oxygen during recovery from exercise resulting in an elevated rate of aerobic respiration. The first stage of this process involves the breakdown of glycogen to pyruvic acid.**

**Describe the remaining stages that use oxygen to complete the breakdown Of glycogen.**

The recovery process

Aerobic capacity

Aerobic training

Body composition

Aerobic ergogenic aids

**An ergogenic aid is any substance that enhances performance.**

**Discuss the following as aids to enhancing performance**

- **the use of dietary manipulation**
- **pre competition meals**
- **post competition meals**

Aerobic ergogenic aids

Recovery

Energy systems - lactic acid and aerobic

**(d) (Biomechanical Analysis of Human Movement).**

**Explain the factors that affect the size of fluid friction acting on a moving body and describe how it can be reduced in order for the body to move faster. Explain how the Bernoulli Effect changes the normal flight path of a projectile in a sport of your choice. (Use diagrams to illustrate your answer wherever possible.)**

**(Fluid Friction)**

**Submax of 8 marks from**

**(Explanation)**

1. Fluid friction is the force acting against the direction of the motion of the athlete/projectile travelling through air/water or equivalent diagram
2. (velocity of body) faster moving objects have greater FF
3. (Frontal cross sectional area) Greater frontal cross - sectional area leads to greater FF
4. (surface characteristics of object) The rougher the surface, the greater the FF
5. (Streamlining/Body shape) Better streamlining leads to less FF
6. (Density of gas/liquid) The greater the density, the greater the FF

**(Reduction of FF)**

7. (Frontal cross - sectional area) Tucked/crouched body position/flatter body position or equivalent
8. (Surface characteristics) Smoother surface/body shaving/lycra body suits or equiv.
9. (Streamlining/Body shape). Tapering of object's shape to reduce turbulence behind object/dolphin action in water
10. (Density of gas/liquid) Reduce density of water/altitude

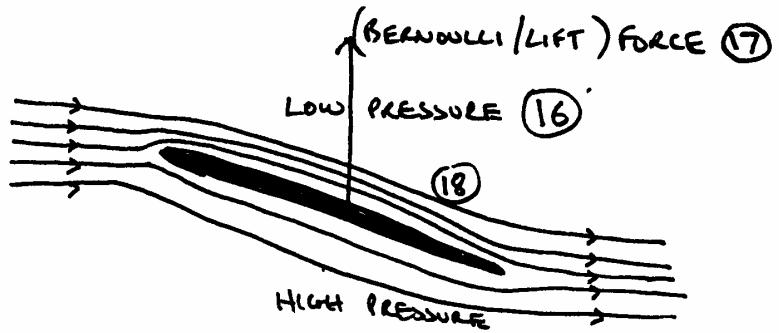
**(Bernoulli Effect)**

**Submax of 8 marks from**

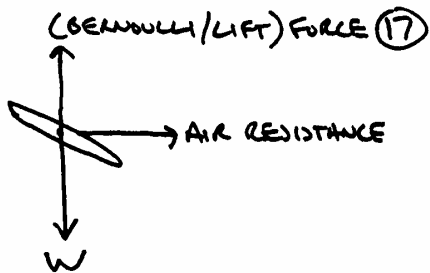
**(marks can be either explanation or diagram)**

11. Flight path becomes asymmetric/lengthens
12. Provides a lift force/reduces the effect of gravity
13. Depends on the angle of attack of the projectile relative to the direction of its motion
14. Air travels further over the top of the projectile
15. Air travels faster over the top of the projectile
16. Creates low pressure over the top of the projectile
17. Force created from high to low pressure gradient
18. Narrower air flow lines over the top of the projectile (Diagram only)
19. Diagram showing all forces acting on the projectile
20. Diagram showing how to work out the resultant force acting on the projectile/parallelogram law
21. Resultant force shows the amount and direction of the acceleration of the projectile (Newton 2)
22. Object acts as an aerofoil

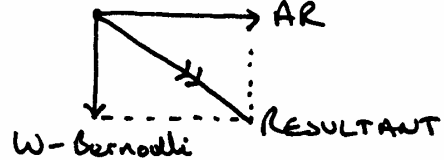
Air Flow Diagram.



FREE BODY DIAGRAM (19)



PARALLELOGRAM LAW (20)



Total of 13 marks available for Biomechanics answer.

Links could include Newton's Laws, Friction, comparisons with other flight paths and the Magnus effect.

**(e) (Psychology of Sport Performance)**

The quality of leadership is an important influence on team performance and cohesion.

What are the main qualities of an effective leader in sport?

The styles of a leader can differ according to the needs and expectations of the leader and the group, as well as the demands of the situation. Explain the different circumstances that would demand a task-orientated style and a social-orientated style of leadership in sport.

**(Qualities of a leader)****4 Marks Max**

1. Can communicate effectively
2. Is driven/highly motivated/enthusiastic/reliable/determined L
3. Can motivate/influence others/charisma/has presence/is respected
4. Has a clear vision/mission/goals/ambitious/good decision-maker
5. Empathy/understanding needs of others
6. Good knowledge of the sport/activity/experienced
7. Good practitioners/good at the sport themselves/show right attitude

**(When to use a task-orientated style)****5 Marks**

8. When discipline and control is needed/hostile groups L
9. If lack of time
10. For large groups L
11. In early stage/cognitive stage of learning/beginner L
12. For team players who generally prefer training and instruction style
13. Males prefer autocratic style
14. If in a dangerous situation
15. (Fiedler) Task style better in situations that are extremely favourable and extremely unfavourable/extremes of favourableness
16. When task is clear and unambiguous
17. If leaders personality is task orientated/autocratic/authoritarian L

**(When to use a social-orientated style)****5 Marks Max**

18. When group member's can/wish to participate in decision-making/those who prefer democratic approach L
19. For more advanced performers who have knowledge to contribute
20. To motivate group members/ownership / feel valued L
21. If demands of situation is social (friendly match)
22. When task demands greater interpersonal communication
23. If leader and group members are well known to each other
24. Females prefer democratic/social approach
25. Task structure is not dangerous
26. For small numbers/individuals L
27. (Fiedler) In situations that are moderately favourable
28. If leader's personality lends itself to democratic/social approach L

**Total 26 Knowledge marks**

**19 synoptic marks**  
**[Total 45 marks]**



## Appendix

## Examples of possible links A/S and A2.

**A/S > A/S**

- Demonstrations > Obs learning..... link with .....
- Verbal > feedback > +ve reinforcement
- Visual/verbal > motivation
- Verbal
- Guidance > stages of learning
- Reduce fear
- Health & safety
- Guidance
- Part practice > classification > motivation
- Guidance
  
- Guidance/discipline
  
- Social / observe learning

**A2>A2**

social learn

ach motivation

leadership

leadership

task leadership

confidence

confidence

confidence > ach motiv.

communication/leadership

task/discipline

Leadership > personality

leadership > ach. Motiv.

social –orientated leader

> = Possible links within the topic area

**Section B****Question 3 (Socio-cultural Focus)****Part 1 (Contemporary Studies in Physical Education)****(a) Britain has many surviving festivals and customs.**

**Outline the characteristics of surviving ethnic sports in Britain, such as those in Fig 1, and explain why they have survived.**

**In tribal societies such as Samoa, sports and pastimes have developed through pre-colonial, colonial and now post-colonial times. Summarise the development of sports and pastimes in each of the three stages – pre-colonial, colonial and post-colonial.**

**13 marks: 1 mark for each response up to a maximum of 13**

**(ethnic sports : characteristics and reasons for survival -not separated because of overlap)**

**sub max: 6**

1. (Local) Local events
2. (Rowdy) Rowdy celebrations/festival atmosphere/pub often central focus/violent/masculinity
3. (Occasional) Occasional/often annual
4. (Ritual) Often associated with ritual/costumes/singing/ceremonial
5. (Tradition) Tradition/keen to re-create the past/continue customs/cultural identity
6. (Isolation) In relatively isolated locations/keen to prolong local customs (if not given in 5 above)
7. (Social) Social/community reasons
8. (Tourism) Attracts tourists/attracts money to area/attracts media interest

**(Tribal cultures: summary of pre-colonial, colonial and post-colonial devt)**

<b>Pre-colonial</b>  <b>Sub max 3</b>	9. Land and sea based activities using natural resources (eg stick fighting, wrestling, fishing, canoeing)
	10. Sports and pastimes of great significance
	11. Often functional/for a purpose/eg wrestling for choosing headman/fighting for war preparation/courage/strength
	12. Could be small local/informal/simple/natural
	13. Could be whole village/district competitions
	14. Success/prestige sought for village/importance of group cohesion
	15. Were social occasions/associated with feasting/community gatherings/ceremonial L
	16. In praise of their gods/ritual
<b>Colonial</b>  <b>Sub max 3</b>	17. Survival/need for food
	18. Became part of British Empire
	19. Outside influences imposed on local people/Christianity/law and order/new weapon/new ways of trading/new schooling systems/commercialism
	20. Local customs banned/undermined
	21. Local people adopted/modified games that were brought/adopted cricket/rugby/tribes taught new games
<b>Post-Colonial</b>  <b>Sub max 3</b>	22. Rugby suited the lifestyle/temperament/flair/physique of islanders
	23. Games and sports as important as ever L
	24. Rugby unified villages as old sports had done L
	25. Rugby ideal for inter-village rivalry/celebration/social/took the place of older forms of inter-village rivalry (e.g. stick fighting) L
	26. 7s games particularly suited/suited low numbers in villages
	27. Western Samoan Haka significant/a re-emergence of tradition/calling on war gods/unifies players
28. Haka a link between pre-colonial pastimes and modern sports	

**Part Two: (HISTORICAL STUDIES IN PHYSICAL EDUCATION)**  
**(b)**

With the help of Fig 2 and your own knowledge describe:

- Mob football as a popular recreation
- Football or rugby in the public schools and
- Football as a rational recreation.

Explain these changes in football, from the popular to the rational form, by referring to the influence of working conditions, urban expansion and transport.

13 marks: 1 mark for each response up to a maximum of 13.

Sub max 8

<b>Mob football as a Popular Recreation</b>  <b>Sub sub max 3</b>	1. Local/village v village/community based
	2. Uncoded/simple rules/local rules/passed on by word of mouth
	3. Violent/uncivilised/regular deaths/not skill based
	4. Occasional/often annual/irregular
	5. Played by lower class/males/a way to show virility/manliness
	6. Rural/occasionally in towns
	7. Often restricted/illegal/curtailed
	8. Wagering/ betting on outcome
<b>Late nineteenth Public Schools</b>  <b>Sub sub max 3</b>	9. Usually compulsory for all
	10. Inter-house matches
	11. Inter-school/school v club matches
	12. Part of the 'games cult'/played obsessively by some
	13. Thought to promote useful values/(e.g. courage, leadership, pluckiness)
	14. Development of rules
<b>Association Football as a Rational Recreation</b>  <b>Sub sub max 3</b>	15. Regional/national/international
	16. Rule based/Governing body rules
	17. Respectable/civilised/skilful/skill not force
	18. Regular/a 'season'/leagues/cups/competitions
	19. Gentlemen amateur teams (e.g. Corinthian Casuals)/ factory workers
	20. Working class professionals
	21. Urban/purpose built stadia/workers walked to the ground/ spectators
	22. Playing positions/use of officials

(Reasons for changes from the popular to the rational form)

sub max 6: 1 mark for each valid point.

<b>Changes in: Working conditions</b>	23. Factory system/regular work times
	24. Reduction in working week/Sat 1/2 day/early closing movement
<b>Sub max 2</b>	25. Skilled manual labour first (to gain Saturday 1/2 day)
	26. Pro football a comparatively good job
	27. Workers had enough to pay the Saturday gate money
<b>Urban expansion</b>	28. Limited space/loss of space
	29. Specialist facilities developed
<b>Sub max 2</b>	30. (Potential) business opportunities in running club/appealed to middle classes
	31. Large numbers of people in one place/needed something to do
<b>Transport</b>	32. Trains/trams/buses
	33. Allowed for regular fixtures
<b>Sub max 2</b>	34. Facilitated development of spectatorism
	35. Required standardised rules

**Possible links within AS**

1. Ethnic sports' links with
  - Play
  - Physical recreation
  - Sport as concepts
2. Links with other aspects of sport and culture.

**Possible links within A2**

1. Football a reflection of developments in other games e.g. cricket
2. .... and individual activities e.g. athletics.
3. The industrial revolution had impact on all aspects of life including all games and individual activities.

Only professional soccer in the UK is approaching the level of commercialism found in all USA professional games.

Discuss this statement by comparing USA professional games with UK professional soccer in terms of commercial development and the characteristics of the sports as they are played in their respective societies.

Why only soccer is approaching levels of commercialism found in USA games.

### Commercial Developments

Sub max 8 if comparative facts are in place		
	USA professional games	UK soccer
<b>1 Crowd size</b>	Has generated a large spectator following	Has generated the largest spectator following in the UK
<b>2 Media</b>	Attracts large media coverage within the USA	Dominates media coverage in the UK
<b>3 Global appeal</b>	Limited global appeal	Has created genuine global interest
<b>4 Global appeal</b>	World Series e.g. baseball is highly lucrative but is played within USA/high and internal interest	World Cup is a genuine global competition which is highly lucrative adds credibility to UK soccer
<b>5 Size of spectator market</b>	USA spectator market is large enough to support the 'big four' professional games e.g. baseball, gridiron, basketball and ice hockey	UK has limited spectator market to support other sport of commercial viability
<b>6 Sponsorship</b>	Large network of wealthy sponsors are fully utilised	Limited network of wealthy sponsors but fully utilised. UK largest sponsors displayed on shirts
<b>7 Sponsorship</b>	Large support base attracts lucrative sponsorship/media finance/Alumni donation	Soccer, over all UK sports attracts biggest sponsors and richest benefactors due to dominance of popularity in the UK
<b>8 Sponsorship</b>	Sponsor names displayed on shirts	Sponsor names displayed on shirts
<b>9 Family support</b>	USA sports have attracted families to watch live sport	Soccer like other sports e.g. rugby league has attempted to draw family support
<b>10 Family support</b>	Family attendance is part of the US sports scene	Soccer remains the male preserve/tribal orientation attracts crowds
<b>11 Business</b>	Professional clubs are PLC's	Top soccer clubs are PLC's e.g. Manchester United
<b>12 Business</b>	Leagues are owned as cartel business organisations	Football League is not a cartel but rich benefactors promote (only) top clubs e.g. Chelsea
<b>13 Business</b>	Tradition of corporate entertainment in all professional games	Growing take up of corporate entertainment in all professional sports but soccer is largest and most prestigious
<b>14 Business</b>	All 'big four' professional sports	Only soccer clubs have a

	sell merchandise as fashion items/accessories on global scale	genuine global market for merchandise
<b>15 Entertainment</b>	Sports provide package of entertainment/festival e.g. cheerleaders and music to emphasise drama	Sports in UK do not emphasise entertainment away from the game
<b>16 Club T.V.</b>	Sports and clubs have their own TV channels	Only soccer clubs e.g. Manchester United have their own TV channels
<b>17 Dream</b>	Sport has been elevated to become part of American Dream and scene/wide appeal	Soccer has proved the most popular/traditional escape for working class male/limited appeal
<b>18 Global Super-stars</b>	'Big four' professional sports tend to have 'stars' of world renown which help to market sports e.g. Michael Jordan	Soccer is alone in providing celebrities of genuine international renown e.g. David Beckham
<b>19 Media Impact</b>	Media dictates rules/timing of games/venues	UK soccer following USA



## Nature of sports

Sub max if comparative points are in place		
	USA professional sports	UK Soccer
<b>20 Ethos</b>	Lombardian ethos	Lombardianism is discouraged in UK soccer
<b>21 Player Market</b>	Market for player recruitment tends to be within USA	Global market for recruitment of players is available only to top UK soccer clubs
<b>22 Sensationalism</b>	All professional sports have been designed to be sensational. E.g. The home run hit in baseball	Soccer is inherently sensational but has also been innovative e.g. penalty shoot out and golden goal/can not pass to goalkeeper
<b>23 Nature of game</b>	Rapid turn of defence to offence/end to end action e.g. ice hockey and basketball	This is a feature of soccer
<b>24 Nature of game</b>	Intensive action is a feature of the game e.g. contrived through time outs and intensity with quarter breaks	Only half time break therefore lower instances of high intensity
<b>25 Nature of game</b>	Tactical substitutions to the extent that whole offence lines are substituted for defence.	Limited tactical substitutions – maintains pace of game but attrition/tiring is still a feature
<b>26 Nature of game</b>	High scoring e.g. basketball	Low scoring but excitement of near misses/build u/corner etc
<b>27 Nature of game</b>	No draws overtime played in gridiron/several innings in baseball	Draw is a feature of the game but shoot out situation etc in cup competitions
<b>28 Nature of game</b>	Padding/protection enhances violence/collision e.g. baseball and gridiron	No padding collision discouraged/skilful play encouraged
<b>29 Crowd Violence</b>	High potential for violence/collision e.g. baseball and gridiron blocking	Violence is not a feature of play e.g. stringent rules on foul play
<b>30 Spectator perception</b>	Sport perceived as last frontier therefore spectators are drawn by aggressive play	No frontier ethos but football perceived as entertaining
<b>31 Spectator perception</b>	Gladiatorial perception of players e.g. the gridiron giant	Room for the gladiator defender but skilful play is perceived as good football
<b>32 Gender</b>	More acceptance/tolerance of female participation	Less acceptance/tolerance of female participation

13 knowledge marks. 1 for each comparison for example;

**Soccer has the same potential as to produce instant excitement as the USA professional sports of basketball and ice hockey as defence can rapidly change to offensive play.**

Examples of links within A2 are as follows;

- The capitalist economic system in the USA stimulates commercial growth making possible the achievement of the 'American Dream'.
- Families are attracted in large numbers to USA pro sport because of the festival atmosphere promoted at games through side attractions.
- Soccer is a genuinely global game and this has enabled stars of international renown to emerge e.g. David Beckham.
- Soccer is a traditional working class game but with adaptations to the rules and the conversion of top clubs to the status of PLC's it has developed a commercial orientation similar to USA professional sport.

<b>16 - 19</b>	<p>A comprehensive response:</p> <ul style="list-style-type: none"> <li>• Comprehensive knowledge has been consistently and clearly linked to practical performance.</li> <li>• Relevant links and connections between and within study areas have been made successfully.</li> <li>• Responses at the top of this level will demonstrate sound analytical and evaluative skills.</li> <li>• There is evidence of well-argued, independent opinion and judgements supported by sound examples.</li> <li>• Technical and specialist vocabulary is used accurately.</li> <li>• The Quality of Written Communication is generally fluent with few errors.</li> </ul>
<b>11 - 15</b>	<p>A competent answer:</p> <ul style="list-style-type: none"> <li>• Substantial knowledge has been linked to practical performance and the majority of examples will be well considered.</li> <li>• Relevant links between and within subject areas have been made with some success.</li> <li>• Evidence of sound analysis is apparent.</li> <li>• Independent opinions and judgements will be present but towards the bottom of this level, not always supported by sound examples.</li> <li>• Technical and specialist vocabulary is used with some accuracy.</li> <li>• The Quality of Written Communication is generally fluent with few errors.</li> </ul>
<b>6 - 10</b>	<p>A straightforward answer:</p> <ul style="list-style-type: none"> <li>• There will be evidence that some knowledge has been linked to practical performance. Connections are made between and within study areas but at the bottom of this level, links will be tenuous.</li> <li>• Analysis will be limited and restricted to the obvious.</li> <li>• Opinion and judgement will be unsupported.</li> <li>• Technical and specialist vocabulary is used with limited success.</li> <li>• The Quality of Written Communication lacks fluency and there will be errors.</li> </ul>
<b>0 - 5</b>	<p>A limited answer:</p> <ul style="list-style-type: none"> <li>• There will be limited knowledge with few links to practical performance.</li> <li>• Connections within and between study areas rarely made.</li> <li>• Opinion and judgement almost entirely absent.</li> <li>• Little or no attempt to use technical and specialist vocabulary at the bottom of this level.</li> <li>• Errors in Quality of Written Communication will be intrusive.</li> </ul>





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RECOGNISING ACHIEVEMENT

REPORT ON THE UNITS  
JANUARY 2005

### **Chief Examiner's Report**

Approximately 4500 candidates entered the two AS units on offer this session. There were fewer A2 candidates; some 1100 sitting the 2565 and 700 sitting 2566.

The majority of AS candidates were re-sitting units in an attempt to improve their grades. This is proving to be the norm for the January session.

Centres should ensure however, that candidates re-sitting AS units in the January session receive additional teaching to assist them in their preparation.

The Principal Examiners for the A2 papers indicated that although there were only a relatively small number of candidates, they generally tended to be well prepared.

There are a number of general points arising from this examination sitting which centres should take on board:

- i)** Candidates are better prepared in terms of accessing quality of written communication marks. To access these marks candidates need to write in sentences rather than listing their knowledge in bullet point format.
- ii)** Centres need to ensure that candidates understand the requirements of the different 'command' words used in questions. E.g. Identify, discuss, compare, explain, describe etc.
- iii)** The inferences for candidates given the use of a levels of response mark scheme. A levels mark scheme will be applied to parts of all questions on the 2565 paper and to parts of questions on 2563 where it is considered appropriate. Where a levels of response scheme is applied, candidates listing their knowledge in bullet point format will almost certainly be restricted to accessing the lower band marks.
- iv)** In the synoptic questions in unit 2566, the Principal Examiner again indicates that candidates accessing high marks will a) spend some time planning their answers and b) follow a 'normal' route through AS and A2 subject areas. E.g. Anatomy & Physiology to Exercise Physiology, Skill to Sports Psychology, Anatomy & Physiology to Biomechanics.
- v)** Where candidates are sitting papers for the first time in January, centres should ensure that sufficient teaching time is made available to ensure that all areas of the specification are covered adequately.

## **UNIT 2562: The Application of Physiological and Psychological Knowledge to Improve Performance**

### **General Comments**

As in previous years, the January sitting of Unit 2562 tends to reflect diversity in the calibre of the candidates entered for this unit. Of those candidates re-sitting, the marks were often either towards the upper end of the spectrum or very much on the borderline of the pass threshold. It is pleasing to note that some candidates have evidently spent considerable time and effort in preparation for what is clearly a re-sit. Unfortunately, there is further evidence to suggest that inadequate preparation by other candidates has failed to result in an improved grade.

There is evidence to show that it is difficult for centres to cover all areas of the specification in one term. Centres should take this into account when they make the decision to enter candidates for the January examinations.

As has been the practise in previous reports for this unit; the comments identified below may be utilised by Centres in preparing candidates for external examination.

- Answers, or part answers, crossed out by candidates will not be considered by the Examining team
- Where a question demands that candidates identify a particular number of comments, only that number will be marked. Further comments beyond those required will not be considered
- Technical terminology, commensurate with Advanced Subsidiary study, should be used wherever possible e.g. biceps brachii as opposed to biceps
- Graphs in Section A of the unit should accurately reflect the data given in the question
- Misinterpretation of terms frequently led to the loss of several marks e.g. closed loop explained as a closed skill
- Specific and well explained practical examples from Physical Education or Sport should be used whenever required
- Repetition of terms within a question are not mark worthy when used within a candidate's response e.g. 'reaction time is the time taken to react'
- Candidates should not use the margin at the right hand side of the page identified as for use by the Examiner. If additional space is required; either the blank pages at the back of the booklet should be used or additional paper should be requested.

### Comments on Individual Questions

**1 (a)(i)** The average score for this question was 2 marks from a possible 4 and there is much evidence to suggest that candidates are generally now much better prepared in joint analysis questions. For those not gaining maximum marks the greatest mistakes were made by the incorrect identification of the agonist and antagonist, insofar as the muscles were named as only the triceps or the biceps. It should be stressed to candidates that the full anatomical name e.g. triceps brachii must be used in joint analysis questions.

**(ii)** Whilst there were a great many correct answers, terms such as isotonic and eccentric were also in evidence. Examples of a strengthening exercise for the agonist muscle ranged from those identified on the mark scheme to vague explanations of exercises more appropriately for use as an antagonist exercise.

**(iii)** A generally well answered question with points 1, 2, 3 and 7 most commonly described. Unfortunately many candidates failed to gain point 1 through repetition of the term warm up in their answer. It should also be noted that point 2 on the mark scheme required a description of how warm up allows for greater muscle elasticity as opposed to simply stating that muscles stretch more. One of the more common errors was also relating warming up to the vascular system.

**(b)** Maximum score was achieved by numerous candidates.

**(c)** The graph provided, as always, a considerable range of both marks and profiles. Whilst the better candidates produced a graph that more accurately reflected the data presented in the question, the weaker candidates made common mistakes as follows:

Point 1 - resting value was either at 0 or well above 5

Point 2 - no noticeable anticipatory rise

Point 3 - no plateau/too gradual a rise

Point 4 - plateau below 15l/min/plateau began almost at recovery

Point 5 - too gradual a decrease/recovery point to zero/recovery to well above rest



- 2 (a)(i)** Only a limited number of candidates scored more than two marks, with points 1, 2 and 3 being the most widely visited. The emphasis on carbon dioxide diffusion during exercise proved to be too difficult a concept for some.
- (ii)** A generally well answered question with many candidates demonstrating clear knowledge of the pulmonary and systemic systems. There were however, numerous descriptions of oxygenated blood transportation as opposed to deoxygenated blood transportation and incorrect reference to the left side of the heart and the pulmonary vein.
- (iii)** Although many candidates scored two marks there was also still frequent use of the GCSE term “red blood cells”
- (iv)** Despite the fact that the question asks for “why” and “how”, very few candidates offered an explanation as to why carbon dioxide increases heart rate during exercise. However, most were able to go on to gain a sub-max of two for the explanation aspect of the question. Candidates should be encouraged to carefully check the instructions within a question where there may be more than one piece of information required within an answer.
- (v)** A poorly answered question with frequent reference to the mechanics of breathing during inspiration as opposed to expiration. Once again there was a lack of specific detail; with numerous examples of candidates simply writing intercostals rather than internal intercostals and similarly not describing the specific functions of the abdominal muscles and the diaphragm.
- 3 (a)** Although there was evidence of some understanding of the progressive nature of motor skill development by some candidates, the vast majority simply regurgitated the terms contained within the figure.
- (b)(i)** The more knowledgeable candidates were able to access two very straightforward marks. However, there was frequent repetition of the term reaction time within the candidates’ responses.
- (ii)** Candidates on the whole scored well. However, weaker candidates often failed to score any marks as a result of simply writing a one word answer e.g. ‘age’ without any explanation.
- (c)(i)** As a precursor to the schema question, the vast majority of candidates scored maximum marks on the subject of motor programmes - albeit not always with the use of specific and technical terminology.
- (ii)** It would seem apparent that there is generally a greater familiarity with recall schema than recognition schema. In many instances where there was no clear evidence of understanding of recognition schema, the use of guesswork had perhaps enabled candidates to gain one or two marks for their comments relating to recall schema.
- (iii)** Candidates had either grasped the concept of variability and its importance to schema or simply suggested that variation makes for less boring learning!

- 4 (a)(i)** Maximum marks were gained by almost all candidates.
- (ii)** Whilst almost all candidates scored a maximum on the previous question, very few gained all three marks available for this question.
  - (iii)** Although several gained maximum marks, many of the explanations were somewhat sketchy. Even on seemingly straight forward questions, worth only a small number of marks, candidates should be encouraged to offer meaningful and specific detail.
- (b)(i)** Whilst many candidates were able to accurately describe the term anticipation, others viewed it as being in a state of arousal and thereby failed to score the one mark on offer.
- (ii)** Responses tended to be linked to the context of anticipation used in the previous answer and consequently had a 'knock on' effect in terms of the number of marks gained. Poor use of English inhibited a number of candidates, who referred to anticipation as causing an increase in reaction time.
- (c)** The concept of motor control is still evidently an area grasped by only a handful of candidates. Whilst there was some evidence of a general understanding of the role of kinaesthetic feedback, very few were able to clearly explain the cyclical loop used to control the handstand. The comments relating to levels 2 and 3 were mentioned by only a limited number of candidates and in such cases explanations were somewhat vague.

## **2563: Contemporary Studies (Written Examination)**

### **General Comments**

Overall, candidates' answers were very encouraging. Very few candidates scored less than 20 marks out of a possible 45, a substantial percentage scored over 30 and a small but impressive number over 40. In terms of the effort and commitment of subject staff and their students, this reflects very positively.

There was no substantial evidence of candidates being short of time (despite an extended and demanding final question), and quality of written communication was again, heartening with many Examiners justifiably awarding a maximum of 3 marks.

Question 2 (d) was the main differentiator on the paper. Candidates were required to synthesise their knowledge of, and to discuss, the relationship between high-level sport, sponsorship and the media. A question requiring explanation or discussion, or indeed a question whereby candidates are given scope for an expansive answer, is increasingly likely to be marked using a **levels of response** mark scheme. This is particularly true where the question has a substantial number of marks available

**Levels of response** marking gives candidates greater opportunity:

- to answer the question in their own way
- to go into relevant detail where they think it is appropriate
- to have the freedom to show what they know
- to show how well they can think, plan, and structure an answer within the confines of an examination
- to gain credit for high order skills such as analysis, judgement and independent opinion rather than the arguably more straightforward task of remembering relevant key words and terms
- To show understanding of work rather than just recall

This clearly has implications for some centres, who might have successfully been 'training' candidates to concentrate only on 'hitting' key words in order to score well in the exam. While it is likely that levels of response marks schemes will be used more regularly, it should not be supposed that they will be used on every Contemporary Studies paper or that one will necessarily be used every time. Rather, levels of response mark schemes will be used when a specific question would benefit from this type of assessment.

### Comments on Individual Questions

**Q1.** Overall a high scoring question with most candidates scoring 15+ out of a possible 21 marks. Nearly all parts of this question required recall rather than explanation or analysis. The vast majority of candidates scored significantly higher here than on question two.

(a) This opening question required recall of knowledge (the names of each of four layers of the **performance pyramid**) and was extremely well answered. Specific key word answers were needed, though the word 'elite' was allowed along with 'excellence' for point one at the top of the pyramid. The majority of candidates scored full marks here.

(b) This was a high scoring question on the roles of **National Governing Bodies**. This aspect of the specification had clearly been taught thoroughly and successfully by centres. In terms of examination technique, candidates need to be reminded that when a question asks for a specific number of answers, then candidates must think carefully about the points that they make as only that numbers of answers will be marked. The most popular answers were points: 1 (encouragement of mass participation), 4 (coach training), 5 (finance, funding), 6 (rules), 7 (discipline) and 9 (competitions)

(c) Another very well answered question requiring knowledge of **key features of both play and sport**. Again, a high percentage of candidates scored maximum marks here. Stronger candidates made their points clearly and concisely, whereas weaker ones were more long winded and sometimes vague in their answers. It should be noted that 'no rules' is not an acceptable characteristic of play, but rather that any agreed rules are flexible or perhaps loosely adhered to.

(d)(i) This question, which required candidates to explain their understanding of the term **Outdoor Education**, differentiated between those who clearly knew key features of Outdoor Ed. and those who seemed to be having a guess. Most got their mark for giving an example of an Outdoor Education activity, though a minority incorrectly suggested games such as golf/hockey, which are played outdoors. The marks were equally often 'visited' except for point 2 (artificial facilities) which very few candidates mentioned.

(ii) Another well answered question which asked what young people could gain as a result of a **positive Outdoor Education experience** with points: 3 (leadership), 4 (confidence), 6 (teamwork) and 8 (aesthetic appreciation) being the most popular responses.

**Q2.** This question required less pure recall than question one and a greater understanding of terms (e.g. colonialism and sponsorship) and more of a requirement to demonstrate a synthesis of knowledge. Certain parts of the question (notably 2 (b) and 2 (d)) were the key differentiators on the paper with 2 (d) giving stronger candidates an opportunity to gain credit for independent thought, judgement and opinion. Most scored between 10 and 15 marks out of a possible 21 here.

(a)(i) For one mark, candidates had to give an explanation of the term '**colonialism**'. Many answers were vague or inaccurate, however. To gain credit, candidates needed to refer to the following: a country being taken over by another/change occurring/especially in culture/traditions. Many candidates were given the benefit of the doubt (BOD marks) here.

- (ii) As an extension to the previous question candidates were asked to show ways in which **colonialism changed the life and physical activities of tribal cultures** such as Samoa. It differentiated well, with some gaining 3-4 marks with ease while others seemed to be guessing. A minority left the answer space blank. This suggests that it may not have been covered in some centres.
- (b) In recent examination sessions, candidates' answers to questions on emergent cultures such as Kenya, have been improving. The structure of this particular question, however, caused some problems. Candidates had to **identify specific features of sport in emergent countries** (key words such as nation building, disproportionate funding, integration, role modelling were needed here) and then **each of the selected features needed to be briefly explained**. Candidates who scored well had clearly learned the key terms, while many were rather more vague and a small percentage did not gain any marks at all.
- (c) To gain a mark for a **definition of sport sponsorship**, it was necessary to show that something was given by sponsors in order to get something back in return (e.g. money being given by a company in order to increase profit or gain exposure). This question highlights the need for candidates to be reminded that they should not repeat the question in their response. Here a minority of candidates unsuccessfully wrote that 'sponsorship is when a company sponsors a performer.'

When asked for the **negative effects of sponsorship on performers** (for 3 marks) most managed to provide 2-3 accurate answers, the most popular being points: 2 (lack of security/withdrawal of funding), 3 (some products give a negative image), 4 (control: being forced to wear certain kit), 8 (increased pressure to succeed). Weaker candidates strayed from the question set and wrote about the negative effects of sponsorship on the sponsor. In these instances no credit was given.

- (d) A '**discussion of the links between high level sport, sponsorship and the media**' could be the subject of an entire book as well as a six-mark AS Level Physical Education question! This was a demanding question requiring knowledge and understanding of more than one area of the specification and the ability to identify and discuss the links. It gave candidates the opportunity to demonstrate pure knowledge as well as test their powers of analysis and evaluation and indeed their ability to structure a discussion.

The answers were encouraging on the whole. They were well developed, with strong discussion and sound knowledge of the strong links between high level sport, sponsorship and the media. The best answers were also well structured and tended to include some independent thought, judgement and / or opinion. The weakest answers were simplistic/narrow and lacked both discussion and structure, with little evidence of knowledge or understanding of the issue being examined.

The most commonly made points were:

- All three aspects need each other
- The relationship between them is very strong
- The relationship can be both good and bad
- Identification of the different types and roles of the media
- Explanation of the advantages of sponsorship to sponsors and performers
- Mention of the fact that the media controls some aspects of high-level sport (e.g. rules, scheduling)

## 2565: Physical Education (Written Examination)

### General Comments

Candidates must cover at least two of the optional areas of study. At least one response must relate to Section A. Section A is comprised of the historical and comparative topics. 3 marks are available for quality of written communication in Section A, where answers require a piece of extended writing.

The History and Psychology questions, once again, proved the most popular with a number of centres offering Comparative but very few covering the Biomechanics option.

Examination technique is an important factor in determining success on this paper. This year, it is evident that candidates' examination technique continues to improve. However, when a specific number of points are requested, candidates occasionally offer more responses than is required. In instances where practical examples are required, some candidates failed to make any attempt to offer these. For example in question 1(d), 'identify key features of **two** of the following', candidates must ensure that they only offer two course outlines as examiners will only mark the first two offered. Similarly in 1(c) where candidates are expected to 'outline each of the three stages of development with reference to athletics in **each** stage', appropriate reference to athletics is expected and full marks could not be achieved unless this occurred.

Candidates preparation of responses in Section A appears more thorough and the Quality of Language mark has, on average, improved. The use of paragraphs and the fluency of these planned responses certainly help the students' to score well. However, there appeared to be an increase in the number of candidates who wrote their answers to Section A using bullet points. This results in a low Quality of Language mark being awarded. This session the examiners continued with the use of a 'levels mark scheme' to assess responses to particular parts of the examination paper. This provided the examiners with the opportunity to credit higher order skills accordingly. As such the levels mark scheme is an important improvement to the examining process. 'Knowledge' marks are generally awarded early in a question and are accessible to all candidates irrespective of ability. Assessing the higher order skills of analysis, application, comparison or argument benefits from a differentiated mark scheme and a levels mark scheme provides this. In the History of Sport Question 1 (c), a levels mark scheme was applied and used successfully to differentiate between weaker candidates who were only capable of describing the three phases, and good candidates who were able to compare technical developments across all phases and applying their knowledge to athletics.

### Comments on Individual Questions

#### Q1. Historical Studies in Physical Education

- (a) Candidates successfully described pedestrianism but in some cases they failed to address the question of what 'its attraction as a popular recreation' actually was.
- (b) Many candidates were unable to identify the significance of the 'newly arrived' middle class and wrote exclusively about 'upper' and 'lower' classes.
- (c) This question was marked using a levels mark scheme and the whole spectrum of responses and marks were seen. At the higher end, candidates wrote freely about the three stages of public school development and made appropriate

reference to athletics. A number of responses failed to make any reference to athletics and a few candidates did not appear to have any knowledge of the three stages.

- (d) This proved a very straightforward question and was well answered. Candidates choosing to address The 1902 Model Course often scored maximum marks. As regards the 1950s programme, candidates tended to score well however, candidates responding to the 1933 syllabus tended to provide very sketchy details.

**Q2. Comparative Studies in Physical Education**

- (a) The identification of cultural factors which make outdoor education important in Australia proved quite challenging for candidates. Bush culture, climate, topography and need for survival were referred to most frequently.
- (b) This was well answered with the violent / spectacular / win ethic of USA activities seen as a contrast to what is evident in cricket. Better candidates also identified the policy of isolation that the USA followed.
- (c) The question on increasing success from ethnic minorities saw many candidates write exclusively about the concepts of either 'The American Dream' or 'Rags to Riches' or indeed both. 'White flight' syndrome and many of the other factors included in the mark scheme were correctly identified by stronger candidates.
- (d) A disappointing number of candidates gave inappropriate examples of rural sports played by the Basque people, but many achieved a 'sub max' by explaining correctly the function that the activity serves in south west France.
- (e)(i) This was the least successfully answered question in the Comparative Section. Many students only referred to the programmes evident in the French education system. In contrast, candidates from some centres clearly understood the role of INSEP and were able to identify the specialist centres of excellence and included the use of Font Romeu as an altitude training centre.
- (ii) The levels marked question in the Comparative Section focussed on the national importance of sport in France, the support sport receives and the influence of France's cultural background. Stronger candidates were able to secure level 2 or 3 status by explaining these factors. Simply listing 'Egalite, Fraternite and Liberte' together with the use of words like 'militarism, intellectualism' or 'naturalism' did not answer the question as an explanation was required.

**Q3 Biomechanical Factors Involved in Human Movement**

- (a)(i) Very few students were able to sketch and label a diagram showing the required forces. As in previous sessions, questions related to force diagrams have resulted in a tendency for candidates to secure only low marks.
- (ii) Newton's Laws of Motion were generally well applied.
- (b)(i) The calculation for impulse was poorly answered with many candidates failing to appreciate that the area under the curve could be estimated using the equation  $\frac{1}{2} \times 0.1 \times 200$ . In addition the units were often incorrectly given.

- (ii) Few candidates calculated the outgoing velocity correctly.
- (c) This levels marked question gave plenty of opportunity for candidates to explore the concepts surrounding the Magnus Effect. Few identified this force and diagrams tended to focus on the width of air flow patterns, direction of spin and motion and high and low pressure areas. Candidates were able to explain the high – to – low pressure gradient and used appropriate descriptors for some slightly wayward diagrams.

**Q4 Psychology of Sport Performance**

- (a)(i) Candidates could often provide three or four accurate characteristics for Nach or Naf personalities but often failed to gain any reward for their theoretical knowledge by failing to apply these characteristics to practical examples.
  - (ii) As in previous sessions, candidates often showed an understanding of the ways a coach can 'encourage a performer to adopt a need to achieve rather than a need to avoid failure approach', but then failed to apply these to a practical example.
- (b)(i) This question was marked using a levels mark scheme. A change in arousal and its subsequent effects being central to good responses. Many candidates secured full marks by offering an explanation of three or more effects.
  - (ii) This question was very well answered. The majority of candidates secured the maximum mark available. Development of selective attention, introducing spectators to training and the use of mental rehearsal or imagery were regularly given in candidate responses.
- (c)(i) The 'intent to harm' and the nature of social learning theory was very well understood by most candidates who scored well on this question.
  - (ii) Whilst a few candidates gave more than the required 'four' strategies, many accurately identified at least three with 'imagery, mental rehearsal, counting to ten' and 'self-talk' being the most often recorded responses.



**2566: Exercise and Sport Physiology and the integration of knowledge of principles and concepts across the area of Physical Education**

**General Comments**

There was a large range of abilities represented. There were candidates who were clearly well prepared for the examination but also those who represented a single entry from their centre and who tended not to have the required level of knowledge or understanding required at this level. In the compulsory question, the best candidates showed comprehensive knowledge of the nature and role of ATP and training principles related to sport and exercise physiology.

In the synoptic question there were outstanding candidates, especially those choosing the anatomy and physiology to sport and exercise physiology route. These candidates showed the ability to express their knowledge clearly and to make relevant links between practical examples and subject content across topic areas. The weaker candidates showed a poor understanding of the sport and exercise physiology aspects. This was particularly apparent when applying training principles to the designing of a training programme.

Weaker candidates in the synoptic questions made no attempt to link subject content and had poor knowledge of their chosen topic routes. Candidates are generally much better prepared by centres to answer the synoptic questions effectively. Many candidates now make links as they write and frequently apply their knowledge to good practical examples. The most effective candidates make short plans and make their links in the second part of the question.

Centres should remind candidates that to gain the top marks for the synoptic question, they should consistently and clearly link their material to practical performance and make relevant links and connections both between, and within, study areas.

Successful candidates who followed the socio-cultural focus, showed evidence of well-argued, independent opinion and their judgements were supported by sound examples.

A minority of candidates make little or no attempt to use technical and specialist vocabulary and at times errors in their written work became intrusive and consequently the sense of their arguments was lost. Such candidates need more practice in the planning and writing of extended synoptic answers.

Very few candidates offended the rubric and answered questions from both the scientific focus and the socio-cultural focus.

**Comments on Individual Questions**

**Section A**

**Q1**

- (a) Very few candidates scored full marks for this relatively straightforward question. Many candidates gave good definitions only to let themselves down by not stating the units of measurement clearly asked for in the question.
- (b) This was answered well by many candidates. Most recorded that ATP is the only useable form of energy in the human body and also recognised that it can be resynthesised. The better candidates also recognised that it is an exothermic reaction that releases energy and that the facilitating enzyme is ATPase.

- (c)(i) Many candidates did not fully explain the onset of blood lactate accumulation, although most identified the rapid increase of lactic acid in the blood and that this results in fatigue. The best candidates also recognised the point at which the aerobic energy system can no longer reach the body's demand for ATP and identified the anaerobic threshold.
- (c)(ii) Some candidates misread this question and wrote in detail about physiological adaptations rather than the principles of training. The weakest candidates simply listed the principles without relating them to a training programme aimed at delaying the onset of blood lactate accumulation (OBLA). It is always wise for candidates to re-read the whole of the question carefully before answering to check the requirements of the question.

**Section B**  
**Scientific focus question**  
**Part One**

**(a) Anatomy and Physiology**

There is generally a lack of understanding of Newton's laws by candidates. Many recalled the laws but were unable to relate them to practical examples. Some simply wrote practical examples without showing how they related to the laws of motion. The most effective candidates stated the law and then chose a very specific example from a team game. For example one candidate stated that the football on a penalty spot would remain at a state of rest unless acted upon by an external force; for instance a penalty taker kicking the ball. Often simple explanations are much more worthy than long drawn out attempts that do not give an example of the appropriate theory. The better candidates had already started to make links within the topic area by drawing in the position of the centre of mass or direct and eccentric force in relation to the type of motion produced.

Many gave a good description of the sensory receptors and how they inform the cardiac control centre that exercise has stopped. There were a pleasingly large number of candidates correctly identifying proprioceptors, chemoreceptors and baroreceptors as the sensory receptors. Those that did not score so well identified information related to exercise continuing rather than stopping as the question requested.

Some candidates gave extremely good descriptions of the physiological benefits of an active cool down and the best related these to relevant practical examples. The weakest candidates described how lactic acid is removed by such a cool down but did not give any more detail of the physiological benefits such as the prevention of blood pooling and enhancing venous return. The very best candidates made very good points related to the cool down maintaining the respiratory and muscle pumps.

There was a significant increase in the use of the correct technical terminology by candidates in this section.

**(b) Acquiring and Performing Movement Skills**

There was a general lack of appropriate technical language in this question, with many candidates relying on superficial and much generalised information that lacked the required depth of analysis. Many candidates identified the main types of guidance but

there was insufficient information to warrant many marks. Some candidates decided to go on a journey around the acquiring and performing movement skills part of the specification and tried to make links where relevant links could not really be made. This has become a feature of the weaker candidates' responses – some will simply write all they know about a topic regardless of the requirements of the question. This results in a rambling and often incomprehensible answer that does not address the material needed for a good response. The best candidates however, showed a good awareness of optimising the use of guidance when teaching skills to a novice. Overall, there was a good understanding of when part practice should be used. There were some very good responses that took into account the type of task to be taught and the nature of the learner. There was also recognition that the learner could gain in motivation and could experience success when practising a skill in parts.

## **Part Two**

### **(c) Exercise and Sport Physiology**

This physiological question was the most popular and many linked their answers well with the material given in the anatomy and physiology question in part 1. Weaker candidates had only superficial physiological knowledge and were unable to make links within, or between, topic areas and did not give practical examples.

The question asked candidates to describe the remaining stages, after stage 1, which use oxygen to complete the breakdown of glycogen. The well-prepared candidates responded with a comprehensive description, which included details of the Krebs's cycle and also stage 3, including the electron transport system. The best candidates had learned these processes well and went into considerable detail, as well as giving relevant practical examples scoring high synoptic marks. The weakest candidates gave a sketchy response or completely left out this high scoring section. Many candidates gave a good discussion regarding dietary manipulation and the use of carbo-loading to enable a greater storage of glycogen. These candidates also gave the negative effects such as water retention and feelings of weakness during the glycogen depletion stage. Centres should remind candidates that when a discussion is asked for, both sides of the argument need to be explored. This should be the case even when one side heavily outweighs the other. The weakest candidates went completely off the point and discussed the use of illegal ergogenic aids and did not refer to the requirements of the question. The best synoptic marks were given to those candidates who used relevant practical examples throughout and included links with material already identified in part 1 of their answers. For example, linking the use of ergogenic aids and recovery.

### **(d) Biomechanical Analysis of Human Movement**

Very few candidates answered this question. The most successful candidates gave full explanations of the factors affecting the size of fluid friction acting on a moving body. These candidates included the information that the greater the frontal cross sectional area then the greater the fluid friction. The best candidates also gave practical examples of streamlining leading to less fluid friction. The best candidates gave very good descriptions of how fluid friction can be reduced, for example the dolphin action in the water to reduce turbulence. The weakest candidates gave very superficial answers and did not make their practical examples relevant to the reduction of fluid friction. The Bernoulli effect was well explained by the well-prepared candidates with centres obviously encouraging candidates to use diagrams in their learning. The best candidates

gave a full explanation with clear unambiguous diagrams to explain how the Bernoulli effect changes the normal flight path of a projectile in sport.

**(e) Psychology of Sports Performance**

The majority of candidates who answered this question had answered the acquisition of skill question in part one. This enabled candidates to score synoptic marks more easily, whereas those who had completed the anatomy and physiology part one question had fewer opportunities to show links between topic areas. Most candidates gave a good account of the qualities of a leader in sport with the best giving practical examples of why certain highly prominent leaders in sport are successful. The weakest candidates simply included the names of football or rugby managers as a practical example without giving any more information about why they felt that they made such good leaders. Generally, candidates gave superficial and at times inaccurate explanations of the circumstances that would demand different leadership styles. There were many responses that were based too much on personal opinion rather than through an in-depth study of relevant research. The best candidates linked task leadership with the works of Fiedler and social leadership with the need in certain circumstances for greater participation by group members in the decision-making process. The candidates who scored high synoptic marks gave additional psychological material to back up their answer that was relevant to the question. For example linking leadership style with building confidence or linking with part one material such as giving effective demonstrations or using different styles for different stages of learning.

**Question 3 (socio-cultural focus)**

**Part One**

**(a) Contemporary Studies in Physical Education**

The vast majority of candidates who chose the socio-cultural route completed the contemporary issues and history questions. Once again, very few candidates answered the comparative question. There were still a few candidates who offended the rubric and completed this section as well as the scientific route.

Many candidates, when outlining the characteristics of surviving ethnic sports in Britain, simply gave the characteristics of popular recreation. There are many shared characteristics but the points related to ritual and the drive to continue customs were often omitted. There were many candidates who summarised the development of sports and pastimes in tribal societies without using the framework given in the question. The weakest candidates tended to give responses which suggested a misunderstanding of such cultures. The best candidates used the framework to show how the development of sport was at first linked to survival and functional motives and later, how the influences of others had undermined many tribal activities.

**Part Two**

**(b) Historical Studies in Physical Education**

This was a popular question and many candidates scored well by giving good descriptions of football as a popular recreation in public schools and as a rational recreation. Candidates had been well prepared for this but there are a growing number of candidates who have learned off by heart stock answers related to popular recreation, public school features and rational recreation that bear little resemblance to the

requirements of the question. The explanations of the changes in football from popular recreation to the rational form often ignored the framework provided by the question and referred instead to working conditions, rural expansion and transport. The better-prepared candidates recognised the importance of the reduction of the working week, the limited space due to urban expansion and that trains, trams and buses enabled the development of football as a spectator sport.

**(c) Comparative Studies in Physical Education**

As in previous examination sessions, very few candidates attempted this question. The most successful candidates ensured that they made comparative points within their discussion comparing the USA professional games directly with the UK professional game. The weakest candidates simply wrote about the position in the USA but made no direct comparisons with the UK position. Many highlighted appropriate commercial developments that both countries shared, for example the large spectator following and the role of the media. The best candidates also included detailed information of sponsorship with relevant practical examples. The discussion on the characteristics of the sports in their respective societies was not as well done. Many candidates either failed to comment on these aspects or made a superficial response related to USA sport being more violent. The best candidates gave more detail, for example some identified the regular breaks and substitutions in USA sport.

**Advanced GCE Physical Education (7875/3875)**

**January 2005 Assessment Session**

**Unit Threshold Marks**

Unit		Maximum Mark	a	b	c	d	e	u
<b>2562</b>	Raw	60	42	37	32	27	23	0
	UMS	120	96	84	72	60	48	0
<b>2563</b>	Raw	45	36	32	29	26	23	0
	UMS	90	72	63	54	45	36	0
<b>2565</b>	Raw	45	33	29	26	23	20	0
	UMS	90	72	63	54	45	36	0
<b>2566</b>	Raw	60	47	42	37	32	27	0
	UMS	120	96	84	72	60	48	0

**Specification Aggregation Results**

Overall threshold marks in UMS (i.e. after conversion of raw marks to uniform marks)

	Maximum Mark	A	B	C	D	E	U
<b>3875</b>	300	240	210	180	150	120	0

The cumulative percentage of candidates awarded each grade was as follows:

	Maximum Mark	A	B	C	D	E	U
<b>7875</b>	600	480	420	360	300	240	0



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