

Physical Education

Advanced GCE **A2 7875**

Advanced Subsidiary GCE **AS 3875**

Mark Schemes for the Units

June 2006

3875/7875/MS/R/06

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CONTENTS

Advanced GCE Physical Education (7875)

Advanced Subsidiary GCE Physical Education (3875)

MARK SCHEMES FOR THE UNITS

Unit	Content	Page
2562	The Application of Physiological and Psychological Knowledge to Improve Performance	1
2653	Contemporary Studies In Physical Education	11
2565	Physical Education: Historical, Comparative, Biomechanical and Sport Psychology Options	21
2566	Exercise and Sport Physiology and the Integration of Knowledge of Principles and Concepts Across Different Areas of Physical Education	37
*	Grade Thresholds	65

Mark Scheme 2562
June 2006

Section A

Application of Anatomical and Physiological Knowledge to Improve Performance

1 (a) Fig. 1 shows an athlete during the take off phase of the long jump.

(i) Complete the joint analysis below. [5]

Knee joint

- 1 Type of joint – Hinge
- 2 Articulating bones – Tibia and Femur
- 3 Agonist – Rectus femoris/vastus medialis/vastus lateralis/vastus intermedius

Ankle joint

- 4 Type of joint – Hinge
- 5 Agonist – Gastrocnemius/soleus

(ii) The long jumper would use fast glycolytic fibre type (IIb) during the take off phase. Identify two reasons why this fibre type would be used. [2]

- 1 Fast contraction speed
- 2 High force output/explosive/high power output
- 3 Fast relaxation speed
- 4 High anaerobic capacity

(b) Complete the table below, giving an exercise which could be used to strengthen each of the muscles. [3]

- 1 Press up/bench press
- 2 Sit up/crunches
- 3 Bicep curl/pull ups

(c) Figure 2 below shows the position of the centre of mass whilst holding a balance. Describe how the position of the centre of mass can affect a balance. [3]

- 1 Centre of mass must be over base of support to hold a balance
- 2 If Centre of mass moves close to the edge of the base of support balance becomes less stable
- 3 If Centre of mass/line of gravity passes outside base of support balance is lost
- 4 The lower the centre of mass the more stable the balance
- 5 If more points of balance are held balance is more stable
- 6 Large area of support makes balance more stable

(d) One change to the vascular system during a warm up is the ability of the haemoglobin to release oxygen quicker. Identify two other changes to the vascular system during a warm up. [2]

- 1 Increases blood flow/cardiac output/stroke volume/oxygen delivery to working muscles/delays OBLA
- 2 Blood vessels/arterioles within the muscle dilate/vasodilatation/ vascular shunt
- 3 Pre capillary sphincters/capillaries dilate at muscle
- 4 Blood vessels/arterioles at non-essential organs constrict/vasoconstriction
- 5 Pre capillary sphincters/capillaries constrict at organs
- 6 Decreases blood viscosity
- 7 Blood transports heat to be released at skin/increased temperature
- 8 Increased hormonal/nutrient/enzyme transport/activity
- 9 Increase in venous return/blood pressure

[TOTAL: 15 MARKS]

2 (a) A long distance runner completes a 60 minute sub-maximal training run.

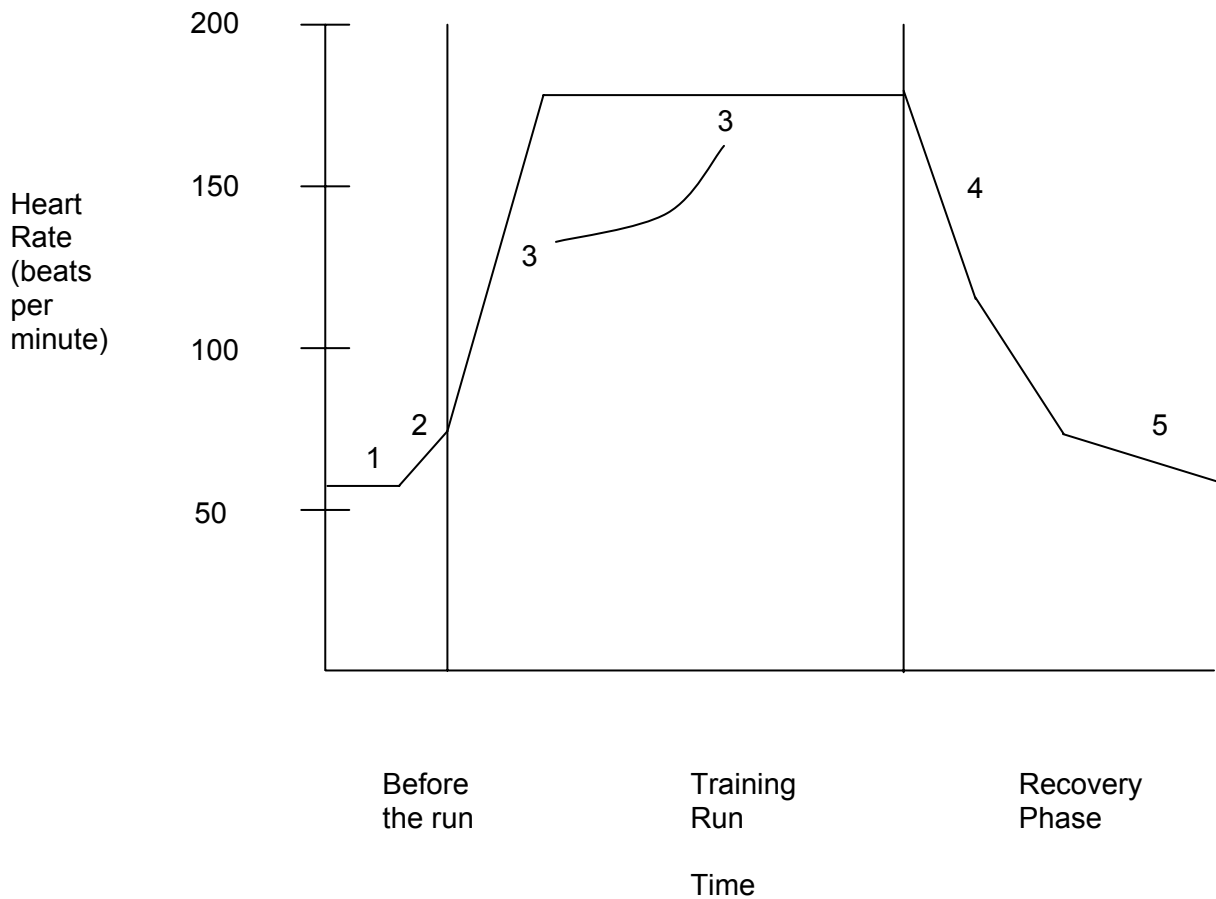
(i) Complete the graph below to show the changes in heart rate in the following three stages:

- Before the run
- During the run
- For a ten minute recovery phase.

[4]

4 marks max (must visit each section to gain max)

Before	1	Resting heart rate around 50/90 beats/minute
	2	Rise in heart rate prior to exercise/anticipatory rise
During	3	Steep rise at beginning of exercise Plateau during exercise (115 – 180 b/min range)
Recovery	4	Initial fast fall during recovery
	5	Followed by gradual decline to rest value



- (ii) **Explain how the cardiac control centre (neural control) increases the heart rate.** [3]

2 sub max (CCC stimulated by)

- 1 Proprioceptors detect movement
- 2 Baroreceptors monitor (blood) pressure
- 3 Chemoreceptors detect changes in pH/blood chemistry/oxygen tension
- 4 Thermoreceptors detect changes in temperature

(CCC responds by) no sub max

- 5 Sends information down cardiac accelerator nerve
- 6 Autonomic control
- 7 Sympathetic control
- 8 Acts on SA node

- (iii) **During the training run blood needs to be diverted away from non-essential organs to the working muscles. Explain how the vasomotor centre controls this distribution.** [3]

- 1 Vasodilation of arteries/arterioles/blood vessels/ leading to working muscles/vascular shunt
- 2 Opening/vasodilation of pre capillary sphincters leading to working muscles
- 3 Vasoconstriction of arteries/arterioles/blood vessels leading to non-essential organs
- 4 Closing of pre capillary sphincters leading to non-essential organs
- 5 Sympathetic stimulation/'reduction

- (iv) **Describe the mechanisms of breathing which allow the runner to breathe in (inspiration) greater volumes of oxygen during the run.** [3]

- 1 External Intercostals contract
- 2 Diaphragm contracts/lowers/flattens
- 3 More muscles involved/sternocleidomastoid/pectoralis minor/trapezius/scalenes
- 4 Lifting Thoracic cavity/ribs up **and** out further
- 5 Decreasing pressure in thoracic cavity
- 6 Volume of thoracic cavity increased

- (v) Explain how the respiratory centre uses neural control to produce changes in the mechanics of breathing. [2]

RCC stimulated by (submax 1):

- 1 Proprioceptors detect movement
- 2 Baroreceptors monitor (blood) pressure/ lung stretch receptors
- 3 Chemoreceptors detect changes in pH, blood chemistry/oxygen tension
- 4 Thermoreceptors detect changes in temperature

RCC responds by:

- 5 Regulated by inspiratory/expiratory (Apneustic/Pneumotaxic) centres
- 6 Which sends nerve impulses (via phrenic/intercostals nerves)
- 7 To the respiratory muscles
- 8 Increased rate **and** depth of breathing

[TOTAL: 15 MARKS]

Section B

Acquiring and Performing Movement Skills

3 (a) Movement skills can be classified in a number of ways.

(i) Use practical examples to explain each of the three points on the continuity continuum. [3]

Must use practical example – 1 mark max with no example

- 1 (Discrete) skills with an obvious start and finish e.g. tennis serve/cartwheel
- 2 (Continuous) skills with no obvious start and finish/interlinking sub-routines e.g. running/swimming
- 3 (Serial) a combination/sequence of discrete elements e.g. triple jump/basketball lay-up shot

(ii) Give two characteristics of an open skill. [2]

Mark first two only.

- 1 Constantly changing environment/unpredictable/affected by environment
- 2 Performer must adapt to changing environment/performer is reactive
- 3 Skill is externally paced
- 4 Skill is mainly perceptual/involves decision making

(b) Drive reduction is one method that can be used to motivate a performer in Physical Education or sport.

Use a practical example to explain Drive Reduction Theory. [4]

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

- 1 Drive/need to solve a problem/learn a task
- 2 Action taken to satisfy the drive/skill is practised
- 3 Skill is successful/skill is learned/habit is formed/S-R bond strengthened
- 4 Drive is reduced
- 5 Too much practice/over-learning leads to inhibition (lack of drive)
- 6 New tasks/goals/rest intervals needed to re-motivate once initial drive satisfied/increase difficulty of task

- (c) **The transfer of learning can have a positive effect on the performance of skills in Physical Education or sport.**
- (i) **What is transfer of learning in Physical Education or sport?** [1]
- 1 The effect/influence that one skill has on the learning/performance of another skill
- (ii) **Use a practical example to explain bi-lateral transfer.** [2]
- 1 The transfer of learning/performance from one limb/side of the body to the other
 - 2 e.g. dribbling in right hand in basketball then doing same skill with left hand
- (iii) **How can a teacher/coach ensure that positive transfer occurs?** [3]
- 1 Emphasise the transferable elements
 - 2 Environmental conditions need to be similar
 - 3 Tactics/strategies/information processing elements need to be similar
 - 4 Identical elements theory (Thorndike)/ more similar the practice conditions the greater likelihood of transfer to the real situation
 - 5 Previous skill needs to be well learned
 - 6 The more similar S-R characteristics the greater chance of transfer
 - 7 Positive previous experiences/positive values assist transfer
 - 8 Reinforcement/praise/positive feedback (enhances chance of transfer)

[TOTAL: 15 MARKS]

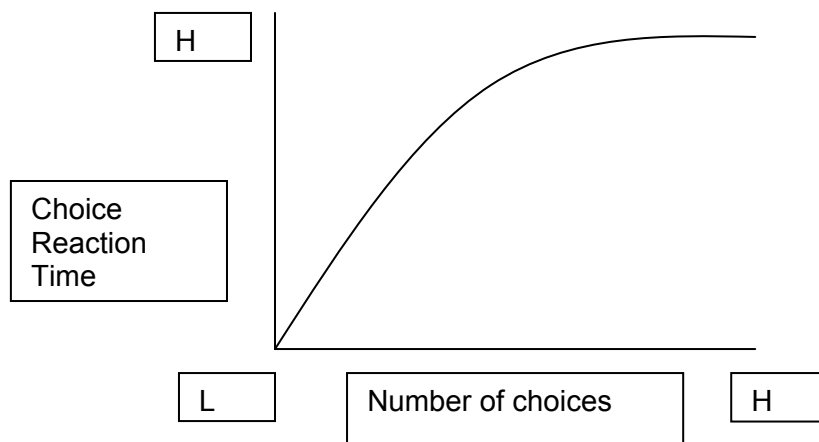
4 (a) Reaction time in sport can affect how efficiently a performer completes a physical task.

(i) Explain what is meant by simple reaction time and give a practical example of simple reaction time in sport. [2]

- 1 When there is only one stimulus and one response to make
- 2 Reacting to the starter in a swimming race

(ii) Choice reaction time (Hick's Law) can be explained through the use of a graph.

Sketch a graph to illustrate the effect of choice reaction time on physical performance. [3]



- 1 Correct labelling of axes
- 2 Units of measurement identified (low-high)
- 3 Correct shape of curve

(iii) Give an example of choice reaction time from Physical Education or sport. [1]

- 1 Basketball player making a choice between dribbling/passing/shooting

(b) The strength of the S-R bond can affect how well a movement skill is learned.

(i) Explain what is meant by the term 'S-R bond'. [1]

- 1 The connection made between the stimulus presented and the response given

- (ii) Thorndike suggested three methods (Thorndike's Laws) to strengthen the S-R bond. Use a practical example to explain each of these methods.

[3]

Max 1 with no example
Max 1 mark for each section

Must use practical examples

(Effect)

- 1 If response is followed by a 'satisfier' the S-R bond is strengthened
- 2 If response is followed by an 'annoyer' the S-R bond is weakened

(Exercise)

- 3 The S-R bond will be strengthened through practice
- 4 Lack of practice causes law of disuse as the bond is weakened

(Readiness)

- 5 The performer must be physically/mentally capable of attempting skill

- (c) **Practice can be massed or distributed.**

What is distributed practice, when might it be used and what are the advantages of this type of practice?

[5]

Sub max 1 (What)

- 1 Practice sessions with rest periods/breaks included

Sub max 1 (When)

- 2 Beginners/less experienced
- 3 Task is dangerous/complex/gross/continuous
- 4 Task is dangerous/physically demanding/unfit performers

Sub max 3 (Advantages)

- 5 Not as tiring/can help maintain motivation/allows for recovery/not as boring
- 6 Mental rehearsal can occur between sessions
- 7 Allows for sessions to be varied
- 8 Corrections/feedback can be made at each session/mistakes are not compounded
- 9 Allows sessions to be progressive/increasingly demanding
- 10 (Research suggests) distributed practice more effective than massed

[TOTAL: 15 MARKS]

**Mark Scheme 2563
June 2006**

- 1 (a) With reference to Fig 1 and to your own knowledge identify the main characteristics of sport.

[4]

4 marks of 4 of:

1	(structure)	rules / NGBs / organised / structured / officials
2	(Competitive)	competitive/leagues/cups/competitions
3	(Commitment)	Commitment / dedication / determination / effort / physical endeavour / training
4	(Skill)	skilfulness / physical prowess / fitness / international / high level / elite / tactics
5	(Time)	strict time limits / set time
6	(Intrinsic)	intrinsic rewards/satisfaction/personal fulfilment
7	(Extrinsic)	extrinsic rewards / winning important / for a job / professional / occupation / for money / serious / outcome
8	(behaviour)	sportsmanship / fair play / gamesmanship
9	(Chance)	with element of chance
10	(equipment)	specialist equipment or specialist kit
11	(space)	designated space or place / fixed boundaries / purpose built facilities
12	(△)	sponsorship / media coverage / commercialism / spectatorism

- (b) Effective coaches adopt many different roles.

- (i) Describe each of the following roles of a coach:

[3]

3 marks – one for each of:

1	Instructor	gives directions or commands / often related rules or safety / one way communication / no discussion or feedback between instructor and learner / eg you must not contact in netball or don't run on the poolside or other suitable example
2	Trainer	gives information re technique or improving performance or outcome or fitness / result is important / the higher the level of performer the more likely they are to be involved / can be a two-way relationship or two way communication / accept suitable examples
3	Motivator	inspires / encourages / sets goals / arousal /accept suitable example e.g. when things go wrong or at half time or when more effort is needed or other suitable example

- (ii) How does the organisation sportscoach UK help improve standards of coaching? [2]

2 marks for 2 of:

1	(training)	provides workshops or training or courses for coaches / provides specialist high performance workshops / runs <i>coaching for teachers</i> scheme
2	(resources)	produces resource or books or videos / <i>coachwise</i> Ltd sells resources / funds coaching research
3	(links)	works with other organisation to promote coach education / works with NGBs or key funding agencies to develop coaching
4	(coach development officers)	supports network of regional coach development officers
5	(coaching levels)	to standardise levels of coaching across sports / structures sports coaching / UKCC / aims to develop coaching system in UK in preparation for the 2012 Olympic Games / coaching task force
6	(award)	Coach of Year award

- (iii) Why are there so few coaches and managers from the ethnic minority groups in professional football in the UK? [3]

3 marks for 3 of:

1	(role models)	few role models
2	(discrimination)	discrimination / racism / unfair treatment
3	(stereotyping)	stereotyping / channelling of players from ethnic minority into certain sports / centrality / channelling of players from ethnic minorities into certain roles within sports and away from management / central or most important roles in sport held by those from the central or dominant group in society
4	(education)	lack of educational opportunity
5	(esteem)	lack of self-esteem or self-belief or self-confidence
6	(numbers)	there may have been fewer players from ethnic minorities in football / some ethnic groups might choose to play other sports such as cricket or hockey
7	(stacking)	stacking / the layering of society on a discriminatory basis

(c) **Elite performers need enormous support in order to achieve their potential and to achieve sporting excellence.**

(i) **What can schools do to help talented young people achieve their sporting potential?** [2]

2 marks for 2 of:

1	(provision)	provide <u>quality</u> coaching or <u>quality</u> equipment or <u>quality</u> facilities
2	(links)	encourage club membership / encourage school-club links or links with local sports colleges or with NGBs / PESSCL
3	(inform)	inform about: local centres of excellence or development squads or other opportunities
4	(sports colleges)	apply for sports college status
5	(profile)	give sport high profile in school / raise profile of elite sport in the school / celebrate success or give reward or recognition for success / focus sports / sporting champions
6	(trials)	enter performers for regional trials
7	(funding)	give advice about grants / link with Sport Aid / inform about World Class funding / give funding
8	(career advice)	advise on HE courses or sport related careers
9	(time)	be flexible re time off for competitions or training / Junior Athlete Education (JAE)
10	(school rep)	school representation / interschool fixtures

(ii) **What does the organisation UK Sport do to increase sporting excellence?** [2]

2 marks for 2 of:

1	(UKSI)	works with or oversees UKSI
2	(funding)	money to elite performers / provides funding for the World Class Programme / distributes lottery funding / TASS 2012
3	(attracts events)	bids for or attracts major events / improves international sporting profile of UK
4	(ethics)	promotes ethical sport or high standards of conduct or sportsmanship / runs the anti-doping programme / works to keep sport drugs free
5	(sharing)	shares best practice with other nations / runs an international programme to research best practise overseas
6	(advice)	Performance Lifestyle Advice (accept ACE UK)
7	(WCP)	runs World Class Programme

- (d) Explain the benefits of sponsorship to elite performers and why sponsors might choose to invest in sport. [5]

5 marks: levels mark scheme

Level 3: 5 marks

- A developed answer showing accurate knowledge and sound understanding.
- ...with explanations rather than brief descriptions.
- Both parts of the question are addressed.

Level 2: 3-4 marks

- At the top of this level some points are explained well.
- At the bottom of this level there may be an attempt at explanation but overall answers are descriptive.
-or the focus of explanation is narrow.
- Both parts of the question are addressed.

Level 1: 1-2 marks

- At the top of this level answers will be predominantly descriptive.
-or the focus of explanation is very narrow.
- At the bottom of this level candidates will show little knowledge or understanding of the issue of sport sponsorship,
- and answers will be simplistic and / or limited.
Perhaps only one part of the question has been addressed.

Answers are likely to include the following points:

Benefits of sponsorship to elite performers:

1. they don't have to work / it allows for more training or more extensive competing / they can concentrate fully on sport or training.
2. they get money for: living expenses or coaching or equipment or facilities or transport.
3. they are given free kit or equipment.
4. improved standard of living / quality of life
5. they can be financially secure especially after retirement.
6. their status or confidence is increased / .. especially if sponsor is well known / performer is promoted.

Reasons why sponsors invest in sport:

7. to gain publicity or exposure or sales or profit or media coverage / amount of sport on TV
8. healthy image / sport is a good 'product' to be associated with
9. to improve product or company image
10. because sponsoring can be a relatively inexpensive form of advertising.
11. to increase goodwill or to improve community or employee relations.
12. because they are passionate about sport
13. tax relief / because sponsorship is tax deductible.
14. tickets for or hospitality at major sporting events.

[TOTAL: 21 MARKS]

- 2 (a) (i) What are the characteristics of physical recreation? [4]

4 marks for 4 of:

1	(skill / fitness)	limited skill or fitness
2	(organisation)	limited organisation / no officials
3	(rules)	flexible rules / NGB rules don't need to be followed
4	(competition)	limited competition
5	(enjoyable)	enjoyable / taking part more important than winning / non-serious / low level of commitment
6	(equipment)	basic equipment / no specialist clothing / inexpensive
7	(everyone)	everyone / available to all
8	(time)	time flexible or decided by agreement / free time / spontaneous
9	(amateur)	amateur / voluntary / choice / pre-occupation / hobby
10	(space)	space or place flexible or decided by agreement

- (ii) What are the benefits of physical recreation? [3]

3 marks for 3 of:

1	(skill)	become more skilful or competent
2	(health & fitness)	improved health or fitness or well being
3	(relaxation)	relaxation / stress relief / escape from pressure
4	(appearance)	improve body shape or appearance
5	(social)	social element or to meet people / friendships
6	(self)	self-fulfilment / spiritual development / improved self esteem / self realisation / intrinsic reward

- (iii) How does public sector funding help to increase participation in physical recreation in the UK? [3]

3 marks for 3 of:

1	(community prov)	provide facilities or equipment
2	(school prov)	money for school facilities or equipment of staffing
3	(personnel)	Sports development officers / School Sport Co-ordinators (SSCos) / community sports coaches
4	(grant aid)	grants to local authorities or local clubs / discount schemes
5	(events)	advertising / promotional events / campaigns / holiday play schemes
6	(transport)	provide or subsidise transport

- (b) With reference to the study of sport and culture, what do each of the following phrases mean?

[6]

(Emergent societies)**2 marks for 2 of:**

1	(developing)	LEDCs / developing societies / developing from tribal status / developing in terms of economics or commerce or politics or technology or market forces or healthcare
2	(promotion)	a country that uses sport to promote itself / nation building
3	(example)	Kenya / or other suitable example e.g. Brazil, West Indies, Indonesia

(American Dream)**2 marks for 2 of:**

1	(success)	anyone can achieve success / wealth / status / social mobility / rags to riches
2	(equality)	everyone equal
3	(wealth)	happiness gained through wealth
4	(work)	hard work needed
5	(opportunity)	land of opportunity

(Shop window)**2 marks for 2 of:**

1	(promotion)	promotion of country / when a small number of highly talented performers is shown to world or put on world stage
2	(high profile)	high profile sports or events or Olympic sports chosen.
3	(sport & politics)	sporting success equates with political success / sport used as a political tool / govt controls sport
4	(appeasement)	appeasement / feel good factor
5	(inaccurate)	an inaccurate reflection of the real situation

- (c) Many ethnic sports such as that shown in Fig. 2 still occur in the UK today.

Give an example of a surviving ethnic sport other than the Highland Games. Identify characteristics of ethnic sports and give reasons for their survival.

[5]

5 marks for 5 of:

1 mark for example

1	(example)	accept any suitable example accepted e.g. Ashbourne football game, Hallaton bottle kicking game, Haxey Hood Game, (Gloucestershire) cheese rolling, Lewes fire festival, Cornish Hurling, Lakeland Games etc Do not accept Highland Games
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4 marks for 4 of:

(the following not separated because of overlap)

2	(tradition)	tradition / keen to re-create the past / continue customs / retain identity / generation to generation
3	(tourism)	attracts tourists / attracts money to area / commercial / economic / media attention
4	(local)	local events / unique to area / local pride
5	(social)	social / community reasons / festival
6	(occasional)	occasional / often annual / public holidays
7	(ritual)	often associated with ritual / ceremonial / religion / supernatural / costumes / singing / face painting / medieval customs
8	(rowdy)	rowdy celebrations / carnival atmosphere / pub often central focus
9	(isolation)	in relatively isolated locations / rural / natural / natural environment

[TOTAL: 21 MARKS]

Quality of Language

Three marks are available for the quality of Written Communication.

- 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.
Candidates express 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**

**Mark Scheme 2565
June 2006**

Section A

Historical Studies in Physical Education

1 (a) Pre-industrial Britain was associated with:

- Two-classes: upper and lower (or gentry and peasants)
- A harsh lifestyle
- Widespread illiteracy
- Free time on Saints' days and annual holidays.

How did each of these four factors influence the characteristics of popular recreation? [4]

Factors associated with pre-industrial Britain so popular recreations were ...
1 Two-class society: upper and lower class	Courtly & popular activities/some for the upper class and some for the lower class e.g. real tennis vs. mob football/different role within same activity e.g. pedestrian and patron
2 Harsh lifestyle	Cruel and/or violent
3 Widespread illiteracy	Rules were simple/unwritten/local/passed on by word of mouth NB: Do not accept 'NO RULES'
4 Free time on Saints' days and annual holidays	Occasional/seasonal

(b) (i) What were the aims of Dr Thomas Arnold (Headmaster of Rugby School 1828-1842) and how did he go about achieving them? [4]

4 marks for 4 of: sub max 3 from each section

Aims:	
1 (Reform)	To reform Rugby School
2 (Social control)	To achieve social control/change behaviour of boys/make school more civilised
3 (Values)	Reduce bullying/promote desirable values
4 (Christianity)	Spread of Christianity/to form Christian Gentlemen/ No to muscular Christianity
5 (Relationship)	Improve social relationships within school/with neighbours
6 (Curriculum)	To broaden the curriculum/increase variety of subjects taught
Methods:	
7 (6th Form)	He gave the 6th Form responsibility/raised status of 6th Form/prefects
8 (Games)	He used games as his vehicle for achieving social control/games afternoons
9 (Inter-House)	Set up Houses/House competition
10 (Chapel)	He made chapel the centre of school life
11 (Relationships 1)	(He fostered more cordial relationships) inviting 6th form to tea etc/punishing bullying/changed rules on corporal punishment/frowned on fighting
12 (Relationships 2)	He forbade trespass/poaching/kept boys on site

- (ii) By 1870 athleticism was thriving in boys' public schools. Why was there a delay in the development of athleticism in girls' public schools? [3]

3 marks of 3 of:

1	(Attitudes 1)	Traditional role of woman
2	(Attitudes 2)	Prevailing attitudes were that it was unladylike to be athletic
3	(Kit)	There was concern over the wearing of revealing clothing for games
4	(Medical)	It was believed to be unhealthy/medically dangerous for women to be too physically active eg. Child bearing
5	(Too strenuous)	Many believed that girls would not be able to cope with over exertion/physical activity/perceived physical inferiority
6	(Opportunity)	It was not thought necessary to give girls the same opportunities as boys/perceived lower status
7	(Alternatives)	Girls schools already concentrated on other things e.g. music/dancing
8	(Reformers)	Fewer leading female reformers than in boys' schools/lack of female role models

- (c) Discuss the impact of the industrial revolution on sport. [6]

Levels mark scheme

Level 3 : 5-6 marks

- To achieve this level candidates will fully develop at least two points from later in the century (9-19)
- A well developed answer that shows sound knowledge and understanding of the huge influence that the industrial revolution had on the development of sport.
- A number of different points of knowledge will have been made – some of which will have been expanded/developed.
- Candidates at this level may include both positive and negative outcomes.
- They may also explain that while in the first half of the century conditions were very poor, things did later improve.
- Answers will include **relevant examples**

Level 2 : 3-4 marks

- Here candidates will show some knowledge and understanding of the impact of the industrial revolution on sport.
- An answer at this level will include a number of different points, but detail may be lacking in some of them.
- Answers will have some structure.

Level 1 : 1-2 marks

- Candidates at this level will show limited knowledge or understanding of the impact of the industrial revolution on sport.
- Points will be made brief, with little development. An answer at this level is likely to lack depth, detail and/or structure.

Add 'D' when factor is related to effect on sport

Initial changes		
1	(Rural to urban)	Migration of lower classes from rural to urban areas/search for regular work
2	(Space)	Loss of space
3	(Lifestyle)	From seasonal time to machine time therefore more structured lifestyle
4	(Time 1)	Loss of time/12 hour days/no time to 'play'
5	(Money 1)	Poverty/low wages/working class as slaves to factory (1830s)/no money to play
6	(Working conditions)	Poor working conditions/pollution
7	(Living conditions)	Poor living conditions/cramped/lack of health and hygiene provision/disease – no energy to play
8	(Rights)	Loss of right to take part in previous activities: e.g. mob football/blood sports/increased law and order/effective police force by mid century
Developments later in the century:		
9	(Middle class)	The emergence of the new middle class in positions of authority/new middle class attitudes/new ways of behaving and playing/the civilising process/old ways of playing changed/refinement/manners/tastes all changing
10	(Transport)	The impact and influence of improved transport and communications on: <ul style="list-style-type: none"> • Distances travelled by players/spectators • Less time to get to places • Establishment of leagues/cups/competitions • Impact on regularity
11	(Time 2)	Increased free time/1870-1890/Saturday ½ day – influence on Spectatorism/by end of century a week paid holiday
12	(Money 2)	Broken time payments/professionalism
13	(Media/literacy)	Improved literacy levels/accessibility of media
14	(Factory Acts)	Factory Acts improved conditions and opportunities for sport
15	(Industrial patronage)	Industrial patronage/provision for sport by wealthy industrialists/factory teams
16	(Excursion trips)	Excursion trips provided by some factory owners
17	(Church involvement)	Increased involvement of Church – acceptance and encouragement of sports and games – e.g. Sunday school teams
18	(Purpose-built facilities/improved technology)	Provision of public baths/initially for hygiene and later for recreation e.g. swimming galas for middle class/stadia/equipment/provision of public parks
19	(Public school boys)	The influence of ex-public schoolboys in industry/the Church/local Government – new ways of and reasons for taking part/values of athleticism being spread to lower classes.

- (d) The 1933 syllabus was highly respected and generally well received by State Elementary Schools.

Describe a typical lesson based on the 1933 syllabus.

[4]

4 marks for 4 of:

Content:	
1 (Skills)	Athletic/gymnastic/games skills taught
2 (Group work)	Group work
3 (Content)	Syllabus set out in 'tables'/teacher selects items from sets of tables
4 (Activity)	Very active/very varied
Method:	
5 (Method)	Still command/direct style for majority of lesson/in lines or 'ranks'
6 (Decentralised)	Some decentralisation/not all doing same thing at same time/corners
7 (Clothing)	Encouragement of special clothing/PE kit
8 (Time)	Lesson to last 20 minutes
Other:	
9 (Space)	In new schools gymnasias/out of doors/in playground
10 (Physical)	Good physique stressed/posture

Comparative Studies in Physical Education

2 (a) Government policy toward sport and Physical Education greatly influences mass participation in Australia, France and USA.

(i) Describe the strategies in the Australian schools Physical Education curriculum that encourage pupils to participate in sport throughout life.

[3]

3 marks from:

1	(SEPEP)	Sport Education and Physical Education Project/100 minutes per week for each of PE and sport/loose framework as a teaching guide
2	(Structure)	Large framework of Intra and Inter school games
3	(Electives)	A broad range of electives/options to cater for all interests/needs
4	(Fundamental Skills Programme)	Basic skills make up Primary programme/basic skills transfer to complex skills/a skilful child is more likely to continue participation
5	(PASE)	Physical and sport education/a professional development programme for teachers.
6	(Sport linkage)	Liaison between club and school/sharing facilities/talented children are passed on to clubs
7	(Exemplary Schools)	Schools with good programmes are funded to share good practice
8	(Sports/Talent Search)	Students select sports which suit the best by accessing database/use of sport/talent search
9	(Awards)	State awards/Blues/de Coubertin for excellence/participation/fair play
10	(ACE)	Athletes Career Education/star performers used as role models

- (ii) Describe how the Australian government has increased active sports participation amongst the adult population. [3]

3 marks from:

1	(Active Australia)	ASC have set up the sport for all policy/Active Australia
2	(Active Australia)	(Former sport for all policy) Educated the community about importance of physical activity and health
3	(More Active Australia)	(Present sport for all policy). Aims to increase membership of sports clubs/emphasis/support given to sports clubs to increase membership/More Active Australia
4	(Equality)	ASC address issues of equality
5	(Funding)	The ASC fund (and administer) sport on a national scale
6	(Sport Development Group)	The SDG established is the unit of the ASC with responsibility to increase sport participation
7	(Review body)	ASC reviews initiatives/trends/needs relating to participation/set up the review 'Backing Australia's Sporting Ability'
8	(Teacher games)	Teacher games/residential competitive sports experiences

- (b) Outline measures taken by the government in France to improve the quality of Sport and Physical Education in schools. [5]

5 marks from:

1	(Decentralisation)	Schools can now design their own PE curriculum/curriculum more suited to individual schools/needs
2	(Government initiatives 1)	UNSS/Le tier temps pedagogique/Le Classe Transplantee
3	(Government initiatives 2)	Sports section/primary sports schools
4	(Provision)	Improve provision and quality of equipment across the country
5	(Joint provision)	Joint use of facilities
6	(Teacher Training)	Upgraded teacher training/introduction of CAPEPS
7	(Secondary Review)	Curriculum review at ages 14 – 18
8	(Primary School)	Varied programme covering basic skills/five families of sport are taught
9	(Inspection)	Schools are inspected every two years
10	(Status)	Introduction of PE exam in Baccalaureate

- (c) (i) **Why is compulsory Physical Education being withdrawn from many USA High Schools?** [2]

2 marks from:

1	(Replacement)	Many States are replacing PE with other subjects
2	(Administration)	School Boards voting PE off curriculum
3	(Popularity)	PE is unpopular with many students
4	(Option)	PE is becoming an option in senior school/no longer compulsory in senior school
5	(Economy)	Withdrawing PE saves money

- (ii) **Explain why opportunities for mass participation in sport in the USA are limited.** [2]

2 marks from:

1	(Sports club)	Limited sports club provision
2	(Expense)	Membership to clubs/participation in sport is expensive
3	(Selection)	Selection by professional sport/scholarship causes drop out/elimination/person must be good to take part
4	(Media)	Heavy media coverage encourages spectatorism
5	(Finance)	Money can be made through spectators more easily than in active participation
6	(Spectator market)	Greater inclination to watch rather than to play

- (iii) **Explain how the nature of professional sports in the USA might deter people from taking part in sport.** [6]

Levels Marked

Level 3 : 5-6 marks

- Responses will fully explain the nature of professional sport and how this deters people from taking part.

Level 2 : 3-4 marks

- Responses will not be fully developed. Answers rely on description rather than explanation. At the top of this level some explanation is expected.

Level 1 : 1-2 marks

- Answers rely on description rather than explanation.

6 marks from:

1	(Lombardianism)	Win at all cost/highly competitive ethic intimidates people/puts people off
2	(Violence)	Violent/aggressive/confrontational nature of games does not suit mass participation
3	(Athletic image)	The majority of the population can not aspire/achieve the standard of athleticism required in these sports
4	(Sensational image)	Only the best/few performers can create/fulfil the sensational image
5	(Frontier image)	The majority of the population do not pursue the 'frontier' experience
6	(Media)	The 'big 4 sports' (sports like American football, baseball, ice hockey and basketball) command media focus at expense of minority sports/extra publicity attracts people to the big 4 sports
7	(Commercialism)	The commercial/business approach encourages spectatorism not participation
8	(Selection)	Only the best can play
9	(Opportunity)	There is little opportunity to pursue the big 4 sports in clubs/no opportunity as an amateur.
10	(Equality)	Big 4 sports are male orientated
11	(Equality)	Concept of stacking and centrality still exist-African-American domination of Basketball/White Flight in Basketball
12	(Equality)	Participation in the big 4 is open to young/fit/physical males only
13	(Franchise)	The voting rights of existing teams limit the numbers of teams who play in professional leagues

[TOTAL: 21 MARKS]**Quality of Language****Three marks are available for the quality of Written Communication.**

High: A well reasoned, well ordered developmental explanation.
In clear, concise and 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.
Candidates express 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 Analysis of Human Movement**

- 3 (a) What is meant by the term 'centre of mass' and how does a table tennis player use it to maintain balance? Explain how the player can improve stability during a rally. [4]

4 marks from:

- 1 (Centre of mass) is the point at which an object is balanced (in all directions)/the point from which weight appears to act
- 2 (To maintain balance) the CM needs to lie within/over the base of support
- 3 (Improve stability by) lowering CM by bending knees
- 4 (Improve stability by) increasing base of support by widening stance

- (b) Fig 1 represents the arm of the table tennis player in the ready position when receiving serve.

Identify the classification of lever used. Explain the principle of moments and calculate the force F needed by the biceps brachii for this system to remain balanced. Show all your calculations. [5]

1 mark for:

- 1 Class 3 lever

Sub max 4 of:

- 2 (For a balanced system) the principle of moments states the clockwise moments = anticlockwise moments
- 3 Moment of force/torque = Force \times (perpendicular) distance from fulcrum
- 4 (Clockwise moments) = $120(\text{N}) \times 0.3(\text{m})$
- 5 (Anticlockwise moments) = $F \times 0.04(\text{m})$
- 6 Force $F = (120 \times 0.3/0.04) = 900\text{N}$ (Units must be correct)

- (c) Many table tennis players use spin to control the flight path of the ball and to deceive opponents.

- (i) Explain how a player generates spin on a ball. [2]

2 marks from:

- 1 Applies an off centre/eccentric force
- 2 Force is applied outside the centre of mass of the ball
- 3 Moment of force/torque is created to generate spin

- (ii) Compare the flight path of a table tennis ball hit with backspin to that of a hard hit shuttle in badminton. Explain the reasons for the differences in their respective flight paths. [8]

8 marks from levels mark scheme

Level 3 : 7-8 marks

- Responses will cover both a similarity and a difference when comparing the two flight paths.
- Responses will contain a fully developed explanation of the differences between the flight paths
- Responses will demonstrate a good understanding of the Magnus effect

Level 2 : 4-6 marks

- At the top of this level The Magnus effect will be identified but not necessarily explained in a coherent way
- Responses will include a comparison between the two flight paths
- Responses will contain a coherent explanation of the differences between the flight paths but points will be missed

Level 1 : 1-3 marks

- Responses will show a limited understanding of the factors that affect the two flight paths

1 Both flight paths are asymmetric/non-parabolic

2 Shuttle flight path is shortened

3 Table tennis ball flight path is lengthened

(Shuttle)

At the beginning of flight

4 Air resistance is dominant force due to high speed of shuttle

5 Weight is negligible/low

6 Therefore flight path is asymmetric/non-parabolic

At end of flight

7 Air resistance decreases due to lower speed of shuttle

8 Air resistance and weight are similar

9 Therefore flight path become more parabolic

(Table tennis ball)

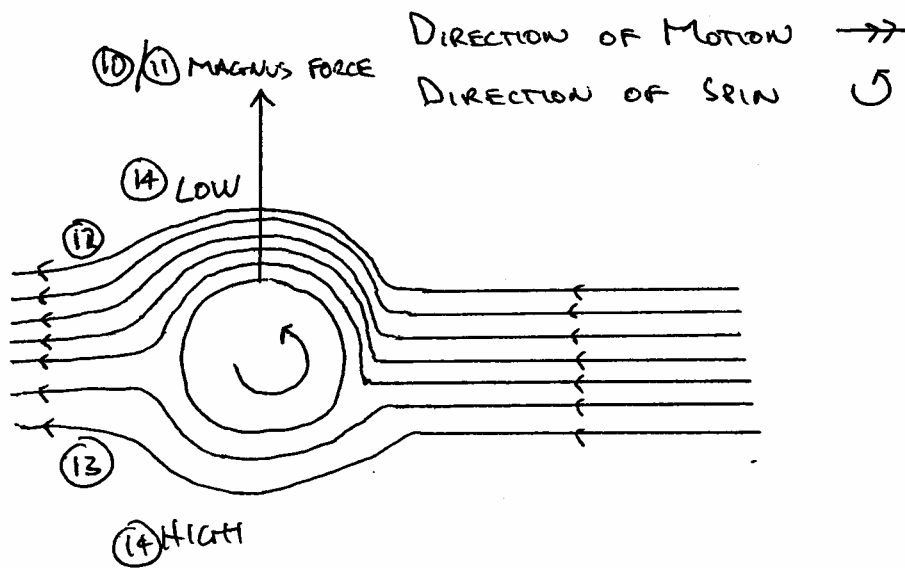
10 Backspin causes an upwards/lift force

11 Called the Magnus effect

12 Air travels further over the top of the ball **NB. opposites**

13 Air travels faster over the top of the ball

14 Low pressure on top of ball/high pressure below ball/pressure gradient going from below the ball to above the ball/equivalent diagram



(iii) Describe the effects of spin on the bounce of a table tennis ball. [2]

2 marks from:

- 1 Backspin causes the ball to sit up/bounce at a greater angle from the ground/equivalent diagram
- 2 Topspin causes the ball to shoot forward/bounce at a smaller angle from the ground/equivalent diagram
- 3 Sidespin causes little or no effect on the bounce of a ball (although it affects the flight path of the ball before and after the bounce)

[TOTAL: 21 MARKS]

- 4 (a) Explain the personality characteristics and situational factors, which would encourage a 'need to achieve' personality. [5]

5 marks for 5 of:

(Personality sub max 3)

- 1 Innate personality characteristics/natural traits/enduring
- 2 Drive to achieve success/high achievers
- 3 Outcome orientated/approach behaviour/nb opposites
- 4 Want a challenge/excitement/takes risks
- 5 Persistent on task/sticks to the job in hand/determined
- 6 Take responsibility for actions/does not fear failure
- 7 Likes feedback/likes evaluation/sees failure as a step to success

(Situational factors sub max 3)

- 8 (Competition) likes competitive situations
- 9 (Probability of success) challenging yet achievable eg 50/50
- 10 (Incentive value of success) needs high incentive value of success
- 11 Home/Away effects/familiarity/hostility/new situations/unexpected
- 12 Level of danger (perceived)
- 13 Presence of others/encouragement/praise from others

(b) (i) **What does social loafing mean and how is it caused?** [4]

4 marks for 4 of:

1 (SL) is loss of personal responsibility

2 Withdraws effort/motivation

Sub max 3 from

3 Lack of accountability

4 No identifiable role/individuals not valued

5 Lack of (self) confidence

6 High level of anxiety (trait and/or state)

7 Injury/illness

8 'Off the pitch' problems/psychological/emotional/social issues

9 Incorrect strategies/tactics by coach

10 Effects of the crowd

11 Perceived/actual low ability/learned helplessness/attribute to internal stable factors/negative past experience

12 Situational stressors/weather/unfamiliar surroundings (Equivalent)

13 Perception others are not trying

- (ii) **As a coach of a sports team explain how you would limit the effects of social loafing and improve the cohesiveness of your team.**

5 marks for 5 of:

- 1 Select those who are less likely to SL from past experience/'team players'
- 2 Give credit for personal success/highlight individual performance/reward assists
- 3 Set/emphasise appropriate goals
- 4 Clarify/give individual responsibility/roles
- 5 Punish social loafing/non cohesive play/drop from team
- 6 Co-ordination practice/set plays
- 7 Encouragement/social support/encourage friendship/team building exercises
- 8 Reinforce/praise/reward teamwork/cohesive behaviour
- 9 Encourage group identity/belonging
- 10 Good leadership (with qualification)

- (c) **Both cognitive and somatic anxiety can affect a performer in sport. Identify what causes anxiety in sport. As a performer, explain what strategies you would use to manage your cognitive and somatic anxiety in a sports setting.** [7]

Levels Marked

(Causes)

- 1 Competition/evaluation/importance/situational factors
- 2 Conflict
- 3 Frustration
- 4 Perceived low ability/poor play/(perceived) poor officials' decisions
- 5 Injury/illness
- 6 Climate
- 7 Perceived danger
- 8 Trait anxiety (A-Trait) – natural tendency for anxiety/genetic
- 9 State anxiety (A-State)/over-arousal in specific situation
- 10 Lack of (self) confidence
- 11 (Cognitive) – psychological/mental anxiety/irritability/irrational/moody/worrying (Equivalent)
- 12 (Somatic) – physiological/bodily reactions/raising heart rate/blood pressure/adrenaline (Equivalent)

(Strategies)

- 13 Relaxation/Progressive relaxation techniques (PRT)
- 14 Biofeedback
- 15 Positive thinking/negative thought stopping/self talk/rational thinking
- 16 Imagery/visualisation/mental rehearsal
- 17 Selective attention
- 18 Setting SMARTER goals
- 19 Reinforce/recognise personal success/positive reinforcement/past experiences
- 20 Practice to build motor programmes/become more physically proficient/ over learning

Level 3 : 6-7 marks

- **Explanation goes beyond recall.**
- **Both causes and strategies are developed**

Level 2 : 3, 4, 5 marks

- **Explanation will concentrate on recall and will cover causes and strategies. An attempt at development will be made.**

Level 1 : 1-2 marks

- **Explanation will be mostly recall that is underdeveloped and vague.**

[TOTAL: 21 MARKS]

**Mark Scheme 2566
June 2006**

Section A

Sport and Exercise Physiology

- 1 (a) Figure 1 shows the changes in ATP and PC during a 100 m sprint.

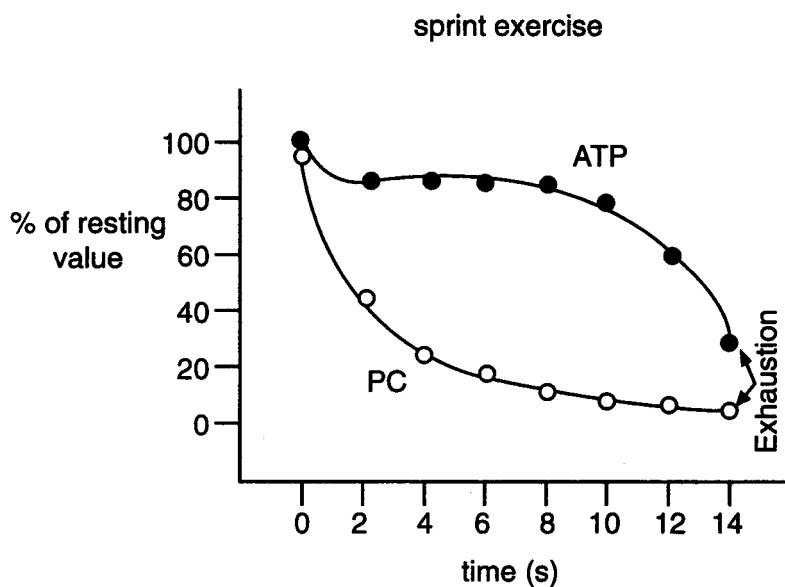


Fig. 1

(Taken from Wilmore and Costill, *Physiology of Sport and Exercise*)

- (i) The table below describes the predominant energy system being used in the 100 m sprint.

Identify the missing information X and Y.

Type of reaction	Fuel used	Site of reaction	Controlling Enzyme
Anaerobic	PC	X	Y

[2]

2 marks

- 1: X = sarcoplasm/cytoplasm of the muscle cell
 2: Y = creatine kinase

- (ii) Using the graph above, explain the relationship between ATP and PC levels during the 100 m sprint. [4]

4 marks

- 1 (during the first few seconds) of the sprint PC levels decline/ATP levels are maintained
- 2 this is because PC is being broken down (to release energy) to replenish ATP
- 3 via a coupled reaction (principle)
- 4 $PC \longrightarrow P + C + ENERGY$
- 5 (reaction 1) is exothermic
- 6 $(Energy) + ADP + P \longrightarrow ATP$
- 7 (reaction 2) is endothermic
- 8 this pattern continues until the PC levels are exhausted
- 9 the ATP/PC – lactic acid threshold is reached/alactacid threshold reached
- 10 creatine kinase responds to increase in ADP
- 11 (energy yield) for every molecule of PC one ATP is re-synthesised/1:1 ratio

- (b) At the end of the race, the performer's body enters EPOC (excess post exercise oxygen consumption).

Describe the alactacid component of EPOC.

[3]

3 marks

- 1 involves restoration of muscle phosphagens/ATP/PC
- 2 oxygen consumption remains high to allow elevated rates of aerobic respiration
- 3 energy released continues production of ATP
- 4 (this ATP) enables PC stores to reform
- 5 uses up to 4 litres of oxygen
- 6 takes 2/3 minutes for complete phosphogen restoration
- 7 50% of stores are replaced in 30 seconds
- 8 restoration of myoglobin with oxygen/stores

(c) Identify and define the type of strength most relevant to a 100 m sprinter.

Design a weight training programme to improve this type of strength. [6]

6 marks

Identification (1 mark)

1 dynamic/elastic/explosive strength/power

Definition (1 mark)

2 the ability of neuromuscular system to overcome resistance with high speed of contraction/a combination of strength and speed/rate at which energy is produced

Weight training programme

4 marks

3 (specificity) exercise the muscle groups relevant to a 100 m sprinter/use leg press/leg curl/leg extensions/biceps curl/bench press/movement patterns/FT fibres/ATP-PC system

4 (overload/progression) increase number of sets/reps/decrease rest time/increase intensity/weight/frequency

5 (moderation) do not do too much too soon

6 (frequency) 3-7 times week (but ensure muscle groups are not exercised on consecutive days)

7 (intensity) 75% - 85% of 1RM

8 (sets) 3-6

9 (reps) 5-10

10 (rest) 3-5 minutes between sets/work : relief ratio 1 : 3+

Section B

Question 2 (A & P – Ex Phys)

- 2 (a) Most positions and techniques in sport require a large range of movement around a joint.

List the balances in order of stability and identify the principles that make a body stable.

Use examples from sports of your choice, explain occasions when a performer needs to be stable and when they need to be unstable.

(submax 10)

[IMPORTANT NOTE: BOTH AREAS OF THE QUESTION MUST BE VISITED TO SCORE IN THE TOP BAND OF THE SYNOPTIC MARKS]

Balances (1 mark)

- 1 bridge headstand handstand/handstand headstand bridge

(Principles) (submax 9)

- 2 the lower centre of mass/gravity the more stable the body
 3 the wider the base of support the more stable the body/the greater the number of points of contact, the more stable the body
 4 the closer the line of gravity to the centre of the base of support the more stable the body
 5 the larger the mass of the body the more stable the body
 6 where the line of gravity falls within the base area/the centre of mass lies above the base of support e.g. headstand, handstand, lunge, serve in badminton, vertical jump take off position

Stable positions in sport

- 7 tend for preparation/need for balance situations
 8 tend to be defensive positions e.g. standing tackle in rugby/defensive positioning in basketball/netball/combat sports
 9 the performer will try to make their base of support as large as possible/increase/high number of points of contact
 10 the performer will lower/have low centre of mass
 11 the performer will lean into the incoming force so that a larger force is required to move the line of gravity outside the base of support

Unstable positions in sport

- 12 unstable positions are where the line of gravity falls outside the base area/the centre of mass lies outside the base of support e.g. take off position for somersaults/rotations/swerve/sidestep in team games
 13 tend to be movements when the performer needs to change their state of motion/overbalance e.g. swerving in rugby/dodging in netball/take offs in long/high jump/gymnastics
 14 the performer will decrease/have narrow base of support/decrease/low number of points of contact
 15 the performer will raise their centre of mass
 16 an unstable position is required to produce an eccentric force/generate rotation e.g. initiation of the back somersault in trampolining

Efficient respiration is an important factor for effective performance in sport. Describe in detail the process of gaseous exchange either at site A or at site B. Explain why gaseous exchange increases at both of these sites during exercise. (submax 10)

Description [NB credit one only] (sub submax 4)

At site A (Lungs)

- 17 external respiration/alveolar-capillary membrane/exchange of gases between air and blood/via diffusion
- 18 the movement (through a semi-permeable membrane) from areas of high pressure to areas of low pressure
- 19 the partial pressure of the oxygen in the blood is less than that in the alveoli
- 20 oxygen travels from the alveoli to the blood
- 21 carbon dioxide travels from the blood to the alveoli
- 22 the partial pressure of carbon dioxide in the blood is greater than that in the alveoli

OR

At site B (Tissues)

- 23 internal respiration/tissue-capillary membrane/exchange of gases between blood and tissues/via diffusion
- 24 the movement (through a semi-permeable membrane) from areas of high pressure to areas of low pressure
- 25 oxygen travels from the blood to the tissues
- 26 the partial pressure of oxygen in the blood is greater than that in the tissues
- 27 carbon dioxide travels from the tissues to the blood
- 28 the partial pressure of carbon dioxide in the blood is less than that in the tissues

Explanation of increased gaseous exchange with exercise (sub submax 8)

At site A (Lungs)

- 29 partial pressure of carbon dioxide in the blood has increased due to more by-products being produced
- 30 partial pressure of oxygen in blood has decreased due to increase uptake of working muscles
- 31 partial pressure of oxygen in the alveoli has increased due to increased rate and depth of breathing
- 32 produces a steeper diffusion gradient
- 33 ensures haemoglobin is fully saturated with oxygen

AND

At site B (Tissues)

- 34 oxygen dissociation curve shifts to the right/greater dissociation of oxygen from haemoglobin in the blood to the tissues
- due to:
- 35 increase in body temperature
 - 36 decrease in partial pressure of oxygen within the muscle as more oxygen used
 - 37 increase in partial pressure of carbon dioxide in the muscle
 - 38 produces steeper diffusion gradient
 - 39 the Bohr effect/increase in acidity/decrease in pH in the muscles

[TOTAL KNOWLEDGE MARKS = 13]

APPENDIX : Possible links within (not intended to be exhaustive)**A & P****T1**

- Newton's Laws of motion
- Types of motion
- Effect of position of application of force
- Type and range of movement that can occur at a joint
- Type of muscular contraction
- Control of blood supply during exercise
- Mechanics of breathing at rest
- Mechanics of breathing during exercise
- Efficiency of gaseous exchange
- Chemoreceptors picking up CO₂

T2

- Energy system used when performing balances/floor routines
- Fuels used when performing balances/floor routines
- Balance – definition/testing
- Efficiency of gaseous exchange to aid recovery
- Physiological adaptations to training that aid gaseous exchange
- Ergogenic aids

(b) (Acquiring and Performing Movement Skills)

Effective motor control of skills is a feature of a skilled performer.

Using examples from physical education and sport, explain what is meant by open loop and closed loop control.

(Open loop) (submax 4)

- 1 sometimes called a motor programme
- 2 generalised series of movements stored in the LTM
- 3 one decision/command can bring about action that has been learned/autonomous/automatic movement (not reflex)/not under conscious control
- 4 diagram showing open loop model/information processing model without feedback – (give one mark for a flow diagram but commentary needed for additional marks)
- 5 more likely with closed skills (more on this give t1)
- 6 associated with quick/dynamic/ballistic actions
- 7 there is no time to act on feedback/no feedback (comment on level 1 = T1)
- 8 open loop control brought about by repetitive practice/experience

(Closed loop) (submax 4)

- 9 involves feedback/information processing diagram which includes feedback
- 10 internal control/feedback is mainly intrinsic/internal/information from proprioceptors/kinaesthesia
- 11 this information used to detect/correct errors/adapts to environment
- 12 information can also be used to reinforce correct actions
- 13 movements initiated by a memory trace (Adams' theory)/memory trace triggers response stored in the LTM (comment on level 2/3 = T1)
- 14 memory trace triggers the perceptual trace
- 15 performer continuously matches memory trace with perceptual trace (to reinforce or correct actions)

Identify the source of information needed for schema to modify motor programmes.

(Schema modifying programmes) (submax 4)

- 16 knowledge of initial conditions/paying attention to the environment
- 17 response specifications/movements needed to be used/responses needed
- 18 sensory consequences/kinaesthesia/closed loop/intrinsic feedback
- 19 movement outcomes/knowledge of results/performance

How would a teacher or coach encourage schema to be formed in training?

(Formation of schema) (submax 4)

- 20 variety in training/fun and enjoyment in training
- 21 to give memorable experiences that can then be stored in the LTM for future use
- 22 use training tasks that enable transfer/ensure activities are relevant/can be used in the 'real game' situation
- 23 encourages awareness of position in environment
- 24 (information) give feedback about performance/concurrent feedback in training
- 25 awareness of body movement/position/mechanical/manual guidance
- 26 give feedback about results/video actions
- 27 (motivation) give reinforcement/praise/incentives/reward
- 28 encourage self-analysis of performance
- 29 thoroughly learn/groove skills/overlearn

APPENDIX: Possible links within (not intended to be exhaustive)**T1**

- motor programme/OLC/CLC – level 1, 2, 3
- schema – recall, recognition

T2

- motor programme/OLC/CLC – confidence/stress/anxiety/social facilitation
- schema – confidence/motivation/goal-setting

(c) (Exercise and Sport Physiology)

During a match, a games player will work at different intensities and produce energy from both aerobic and anaerobic pathways. This will affect the energy system and the fuel used. For example, when a basketball player slam-dunks the ball into the basket, they are using the ATP/PC system and the chemical fuel, phosphocreatine.

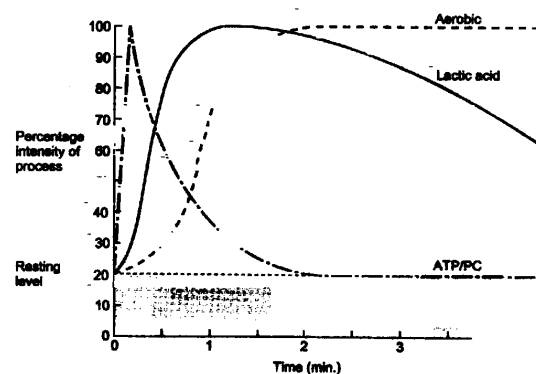
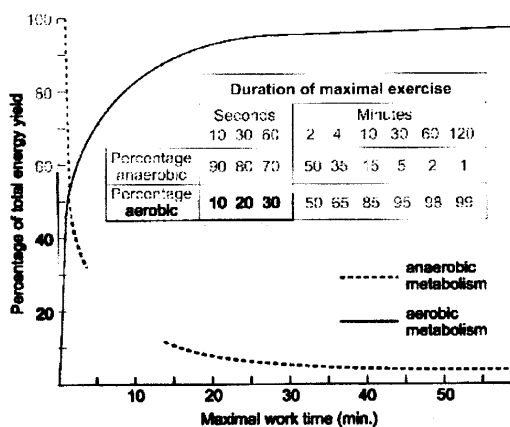
Using examples from a sport of your choice, explain when and why a performer uses the lactic acid and the aerobic energy systems and fuels during a competitive match.

Discuss the effects of level of aerobic fitness, availability of oxygen and food fuels on the efficiency of the aerobic energy system.

Physiological demands on performer during competitive match (submax 8 marks)

(ATP production/energy continuum)

- 1 during match performer will be using a mix of all three energy systems
- 2 at any one point, one system will be predominant/one system takes over from another
- 3 depending on the intensity and duration of the exercise at that point
- 4 for high intensity (short duration) (10 seconds – 2 minutes) activity, lactic acid system is predominant e.g. in a game of hockey: sprinting down the wing with the ball/defender running after a fast break from attack to defence
- 5 for medium/low intensity (long duration) (over 2/3 minutes) activity, aerobic system is predominant e.g. in a game of hockey: a midfield player who is constantly following play around the pitch
- 6 this is the energy continuum/the relative contribution of each energy system to ATP resynthesis determined by the intensity and duration of the exercise
- 7 relevant graph



(Fuels used)

- 8 duration **and** intensity also play a major role in the type of fuel used
 9 for high intensity/short duration/LA/anaerobic activity carbohydrates are broken down for energy/glycogen is used e.g. in the game of hockey: player will use carbohydrates/glycogen when sprinting
 10 for low intensity/long duration/aerobic activity fats/carbohydrates are broken down for energy e.g. in a game of hockey: player will use fats to last the duration of the game

Discuss the effects of level of aerobic fitness, availability of oxygen and food fuels on the efficiency of the aerobic energy system.

(submax 10 marks)

(level of aerobic fitness)

the higher the aerobic fitness of the performer ...

- 11 the higher the intensity of exercise they can perform using the aerobic system
 12 this means they can exercise (harder) for longer periods of time
 13 because they can perform at a higher percentage of their VO_2 max before reaching OBLA/onset of blood lactate accumulation

(availability of oxygen)

the higher the aerobic fitness of the performer ...

- 14 the greater the efficiency of the respiratory system/larger lungs or equivalent
 15 the greater the efficiency of the cardiovascular system/larger heart or equivalent
 16 therefore the greater the supply of oxygen to the working muscles
 17 and the more efficient the removal of waste products from the body
 18 therefore the more efficient their aerobic energy system

(availability of food fuels)

- 19 glycogen is the major fuel for the first 20 minutes of exercise
 20 because oxygen supplies are limited
 21 fats are a major fuel after 20 minutes of exercise
 22 the greater stores of glycogen in the muscle/liver (the longer) the performer can work aerobically
 23 when glycogen stores are depleted fats can be used for aerobic energy production
 24 the fitter the performer the earlier they can start to use fats during submaximal exercise
 25 fat is a more efficient fuel than glycogen/fats produce more energy/ATP
 26 fat requires 15% more oxygen for its breakdown
 27 and means the athlete can only work at lower intensities
 28 once OBLA has been reached the body has insufficient oxygen available to burn fats
 29 only carbohydrates can be broken down anaerobically

[TOTAL KNOWLEDGE MARKS = 13]

APPENDIX : Possible links within (not intended to be exhaustive)**Ex Phys****T1**

- ATP resynthesis
- Recovery process
- Aerobic capacity
- Principles of training/altitude training
- carboloading

T2

- Newton's Laws
- Resting heart rate
- muscular system/higher % of slow twitch fibres
- vascular system
- respiratory system

- (d) Describe how a skater uses reaction forces at take off to produce a jump with spin.

Explain the concept of Moment of Inertia and describe how the skater controls angular velocity at take off, during flight and at landing. [13]

Reaction forces

Submax of 10

(Description)

- 1 reaction force occurs when skater pushes downwards into the ice and the ice pushes upwards on the skater/or explanation of Newton 3
- 2 to leave the ground the upwards/reaction force must be greater than weight
- 3 the harder the skater pushes into the ground the higher they will jump/or explanation of Newton 2
- 4 if reaction force goes through the centre of mass (CM) then there is no rotation during jump
- 5 for rotation to occur, reaction force passes outside CM
- 6 this creates moment of force/torque
- 7 about axis of rotation/longitudinal axis

Moment of Inertia

(Explanation)

- 8 this is the rotational equivalent of inertia
- 9 it is the body's **resistance** to rotate/change angular motion/or eg.
- 10 it depends on the mass of the body
- 11 the larger the mass, the greater the Moment of Inertia
- 12 it depends on the distribution of mass from the axis of rotation
- 13 the further the distribution of mass (from the axis of rotation) the greater the Moment of Inertia/or opposite
- 14 $I = \sum mr^2$

Spinning skater

Submax of 10

(Control at take off)

- 15 generate angular momentum
- 16 larger moment of inertia (arms and a leg wide)
- 17 smaller angular velocity/rate of spin (not angular momentum)

(Control during flight)

- 18 reduce moment of inertia (bring arms and legs in straight)
- 19 increases angular velocity/rate of spin (not angular momentum)
- 20 due to law of conservation of angular momentum/angular momentum = $I\omega$ /moment of inertia x angular velocity

(Control of landing)

- 21 increase moment of inertia/(widen arms and legs)
- 22 reduce angular velocity/rate of spin (not angular momentum)
- 23 therefore, more control on landing
- 24 forces/friction/reaction from ice stop spin (Newton's Laws)
- 25

[TOTAL: 13 MARKS]

Theoretical links (T1)**1st part**

- CM and changing its position
- CM and maintaining balance/stability
- Levers and the effect of the length of the lever arm (legs)

2nd part

- Projectiles' flight paths
- Forces acting on skater during flight
- CM and maintaining balance/stability on landing
- Definitions and rotational measurements
- Analogue of Newtons Law

Theoretical links (T2) with A&P

- Movement analysis involving legs/arms
- Types of motion

(e) (Psychology of Sport Performance)

The effect of an audience on a sports' performer can either help or hinder performance depending on a number of factors. Using examples from sport, identify and explain these factors.

(Factors which affect performance when an audience is present)

(Submax 9)

(Max of 4 for identifications * alone)

- 1 ***competition** factors/level of competition/importance of the event/friendly v league (or equivalent)
- 2 the other competitors/the nature of the opponents/close rivals/local derby/co-action effects
- 3 social reinforcement/crowd getting behind you/supporting/encouraging
- 4 ***hostile**/away game may hinder/home/away effect/homefield advantage
- 5 evaluation apprehension/perception that the audience are judging/talent scout/selector (may cause worry and hinder or help depending on ability)/crowd's knowledge/peers
- 6 ***noise** of crowd/physical proximity/size of crowd
- 7 arousal level is increased/optimal arousal/peak flow/ZOF (inverted U = T2)
- 8 therefore dominant response more likely (Zajonc) (link with drive theory give T2)
- 9 * **perception** of skill/ability level
- 10 if performer is well skilled this can help (link with motor programme give T2)/autonomous phase
- 11 if performer is a novice this can hinder/cognitive phase
- 12 *the **nature** of the task/the skill
- 13 if task is gross/simple/dynamic more likely to help
- 14 if task is fine/complex more likely to hinder (more links to classification give T2)
- 15 ***personality** factors
- 16 Type A/high anxiety personalities/high A-trait/high trait anxiety/ NAF inhibits performance/TAF
- 17 Type B/low anxiety/low A-trait/NACH enhances performance/TAS
- 18 extroverts seek situations with high arousal so may do better with audience/introverts do not seek external stimulation therefore may do less well
- 19 caused by Reticular activating system/RAS/extroverts have low level of internal arousal/introverts have high levels of internal arousal
- 20 attentional control changes/narrow or broad which may affect performance/can be distracted/can be more focussed/distraction – conflict theory

Confidence is important to an accomplished sports' performer. How would a teacher or coach raise the confidence level of a novice in sport?

(raising confidence of novice)

(submax 6)

- 21 performance accomplishments/give success/give achievable goals
- 22 vicarious experiences/show others performing well/use of role models/demonstrations
- 23 verbal persuasion/encouragement/positive reinforcement/praise/positive feedback/encourage satisfaction
- 24 control of arousal/calm them down/cognitive/somatic relaxation
- 25 mental rehearsal/mental practice/self belief
- 26 level of sport-specific state confidence should be raised/increase/enhance trait sport confidence (Vealey)
- 27 positive attribution/re-attribution/attribute failure to unstable factors/attribute success to stable factors
- 28 be non-competitive with skill learning/process/performance goals

Total 13 knowledge marks

Appendix

Examples of possible links A/S and A2

A/S >A/S (T1)	A2 >AS (T2)
Social facilitation – facilitation inhibition/evaluation apprehension	Audience-motor programmes/schema
Confidence – goal setting/ evaluation apprehension	Audience – observational learning/operant conditioning
	Evaluation apprehension – arousal theories/inverted U/drive
	Audience – skill classification
	Confidence – motor programmes/schema Confidence – obs learning/operant conditioning Confidence – skill classification/practice/guidance

Question 3 (Socio-cultural Focus)**Part one****(a) (Contemporary Studies in Physical Education)**

Discuss the issue of sport sponsorship. Your answer should include explanation of different types of sponsorship and the advantages and disadvantages of sponsorship to performers and sponsors.

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

Submax 3

Different types of sponsorship

1. Individuals
2. Teams
3. Events
4. Leagues
5. Facilities

Submax 10

Marks from the following FOUR areas must be gained to get into the top synoptic

		Performer Advantages
6	(full time)	Sponsorship sometimes allows athletes to stop full-time work and to concentrate on sport/enables full-time training
7	(costs)	It can cover all costs/living/travelling/clothing/equipment
8	(security)	Financial security/for retirement/life
9	(stress relief)	Reduce stress/worry about money/the money/performance balance
10	(quality)	If a team is sponsored it may attract more/better players, thus raising the quality of the team/environment/opportunity for individual performers.
11	(organisation)	If an event is sponsored it is likely to be better organised and may be able to expand to allow more teams/players to take part
12	(coaching)	Sponsorship often means a team or athlete can receive higher quality coaching
13	(status)	Being sponsored increases status. If a company is prepared to invest then people will think that the performer/s must be good/raises self-esteem
		Performer Disadvantages
14	(unpredictable)	It can be unpredictable/for limited time/lack of security
15	(bad image)	Can give bad image to sport eg alcohol, tobacco sponsorship
16	(control)	Control/manipulation of individuals/exploitation/pressure
17	(uneven)	Big money only available to relatively small number of performers.
18	(lack of consultation)	Lack of consultation/performers may have to wear or use sponsors' equipment even if they don't approve of/like it.
19	(unfair distribution/discrimination)	Gender/race/disability/age
		Sponsors Advantages
20	(media)	Media coverage
21	(profit)	Increase sales/profit/brand/corporate awareness
22	(image)	corporate image/creates positive image of company/product/brand
23	(relatively inexpensive)	Relatively inexpensive form of advertising
24	(hospitality)	Access to corporate hospitality/tickets to big events/chance to meet and do business with clients
25	(tax deductible)	Sponsorship payments are tax deductible

26	(endorsement)	Can be a powerful endorsement of the brand by an independent third party.
27	(employee relations)	Employee relations can be improved/company pride and loyalty increased/staff can be attracted and retained
28	(community relations)	Community relations can improve/shows that a company cares about the community and is prepared to invest in it/goodwill
Sponsors Disadvantages		
29	(poor publicity)	If performer behaves/performs badly it can reflect on the company/product
30	(uncertainty)	It is uncertain – success of performer cannot be guaranteed
31	(poor value for money)	Poor value for money e.g. if bad weather disrupts an event, media coverage is lost.
Other points that could be raised:		
32	(huge industry)	Sponsorship is an increasingly major part of sport.
33	(agencies/agents)	Sponsorship agencies bringing sponsors and sports bodies together to organise events/agents promote particular performers for their mutual financial benefit.
34	(tobacco)	The issue of tobacco sponsorship – The tobacco industry uses sport sponsorship to get round national restrictions on tobacco advertising.
35	(big companies)	Big companies e.g. Coca Cola support grass roots sport as well as the biggest events involving gold medals/world records etc./reinforce global message
36	(gap)	The difference between the heavily sponsored major sports (e.g. Football, Cricket, Motor Racing, etc.) and minor sports which attract little/no sponsorship, has grown enormously in the last 20-30 years. This over-emphasis on a few big sports is arguably bad overall.
37	(ISS)	Institute of Sports Sponsorship is 'the voice' of the sports sponsorship industry.
38	(Sportsmatch)	Sportsmatch – the government funded sports sponsorship initiative administered by ISS. It matches pound for pound commercial business sponsorship for grass roots sport.
39	(lifestyles)	Reinforces certain lifestyles eg. Alcohol, betting, junk food

Alternative valid/relative points should be accepted.

Total 13 knowledge marks

(b) (Historical Studies in Physical Education)

Mob football and real tennis were both played in pre-Industrial Britain, yet they were very different.

Compare mob football and real tennis, as they existed in pre-industrial Britain.

Account for the growth of lawn tennis as a rational recreation.

Submax 8

Mob football		Real Tennis
1 violent	(Violence/uncivilised)	non-violent/non contact
2 very dangerous/many injuries/some deaths	(Danger)	few injuries
3 invasion game	(Type of game)	net/court game
4 occasional /annual/on feast days/holidays	(Regularity)	regular
5 simple/unwritten rules/passed on by word of mouth	(Rules)	written rules/complex rules
6 no set number of players/large number of players	(Numbers)	two or four players/set number
7 played in streets/fields	(Facilities)	special facilities/elaborate venue/purpose built
8 no special clothing	(Dress)	playing outfit
9 no clear boundary between players and spectators/everyone involved	(Demarcation)	clear demarcation/viewing area for spectators
10 lower class/low culture	(Exclusivity)	exclusive/for elite/high culture/upper class
11 excess drinking/rowdy	(Respectability)	respectable
12 force v skill/no division of labour	(Skill v force)	skill v force/tactics and strategies

Account for the growth of lawn tennis as a rational recreation.**Submax 8**

13	(substitute for real tennis)	Substitute for upper class game of real tennis/middle class did not have the status for facilities to play real tennis.
14	(fashion)	Invented became fashionable/sold to middle class/influence of Major Wingfield
15	(privacy)	Could be played in upper middle class gardens/privacy/high walls and hedges to keep out prying eyes.
16	(female participation)	Suitable for females/did not have to be too strenuous/helped to remove some stereotypes of earlier Victorian times.
17	(dress)	Did not initially require women to wear special dress/they could stay covered.
18	(social)	Became a social occasion/place for young men and women to meet/socialise
19	(clubs)	Clubs formed
20	(exclusivity)	Clubs kept exclusive so that middle class didn't have to 'mix' below themselves.
21	(Wimbledon)	Fashion encouraged by start of Wimbledon championships.
22	(schools 1)	Adopted by exclusive girls' schools
23	(schools 2)	Played as informal/low status/house/social games in boys public schools
24	(family)	Whole family could play together

Links – possible linking comments**T1 links within AS Contemporary studies**

- Heavily sponsored 'starts' become role models
- Triangular link between sport, sponsorship and media
- Importance of lottery funding as well as private sector sponsorship
- Role of sport aid in funding performers below World Class standard
- Discrimination – minor sports/women's sports fail to attract equal sponsorship
- Funding important at all levels of performance pyramid
- Pressure on sports stars in these days of professional sport/intrusion on private life etc.
- Disproportionate inadequate funding for elite sport

T1 links within A2 historical studies

- Real tennis does not follow the normal accepted pattern of popular recreation activities
- Both of the examined activities reflected 2-class society in which they existed
- Mob football as reflection of pre-industrial culture (e.g. lack of transport and communications, literacy, police force)
- Mob game taken into public schools and rationalised
- Real tennis not taken in to public schools – but racquets, squash and fives played in them

- Neither football nor tennis were adopted in State Elementary Schools (at beg of C19)
- Unlike football and cricket, lawn tennis did not rely on improved transport and communications for its growth/development
- Tennis clubs formed by middle class as the athletics, cricket, swimming
- As a 'rational' activity, lawn tennis reflected changing social conditions

T2 links between AS (contemporary) and A2 (historical)

- Top level tennis today is heavily sponsored
- Premiership football heavily sponsored
- Division in contemporary sport between football and tennis (cf mob football and real tennis)

Comparative studies in Physical Education

- (c) The approach to developing sporting excellence is different in all countries.

Describe how the USA college sports scene develops sports excellence.

Compare the strategies to develop sports excellence in the UK with those of Australia or France.

Describe how the USA college sports scene develops sports excellence.

8 marks max from:

1	(scholarship)	award of a sports scholarship to outstanding High School players
2	(contract)	scholarship is a binding contract/student must play for College team
3	(commitment)	students devote 50 hours per week to their sport/Students devote more time to their sport than to study
4	(qualification)	special admit programmes for outstanding players who are academically under qualified
5	(centres of excellence)	colleges are recognised as centres of excellence
6	(ideology)	the ethos of Lombardianism is instilled/perpetuated/reflects professional ethos
7	(coach)	specialist coach is employed
8	(incentives/ accountability)	athletic directors/coaches given high incentives to win/hire and fire
9	(commercialism)	college sport is organised as a commercial business/college sport is big business
10	(facilities)	equivalent to professional standards
11	(competition)	competitions/matches replicate professional standards
12	(progression)	outstanding College players progress through the pro-draft system

Compare the strategies to develop sports excellence in the UK with those of Australia or France.

10 marks max from:

	UK	Australia	France
13 (political)	the government has traditionally left the development of excellence to the governing bodies	the government has controlled policy since 1970s	the government has historical association with sport/controlled policy since 1950s
14 (political)	little involvement from government	government involvement	direct involvement from Government
15 (funding)	government grant to UK Sport/school bursaries/lottery	Australian Sports Commission (ASC) fund sport	government funding/Government directed Economic Plan/National Sports Fund directed by the government
16 (responsibility)	UK Sport are responsible for the elite sports development/world class programme	ASC have overall responsibility/development of excellence overseen by National Elite Sports Council	Ministry of Youth and Sport are responsible for development of excellence
17 (centres of excellence)	UKSI is a centre of excellence	AIS is a centre of sports excellence	INSEP is a centre of sports excellence
18 (organisation)	UK Sport oversees the United Kingdom Sports Institutes (UKSI)	Australian Sports Commission (ASC) oversees the Australian Institute of Sports (AIS)	Ministry of Youth and Sport oversees The National Institute of Sport and Physical Educational (INSEP)
19 (infrastructure)	UKSI have Home Country Institutes (English Institute or e.g.)	AIS has been developed in each State/Victoria Institute of Sport is an AIS in Melbourne or e.g.	specialist centres in specific locations/Font Romeu is a specialist centre or e.g.
20 (infrastructure)	Network of English Institute of Sport		Regional Sports Centres/22 Centres of Sport and Physical Education/CREPS in all regions
21 (scientific provision)	centre provides sport science and medical support	centre provides sport science and medical support	centre provides sport science and medical support
22 (education provision)	Athletic Career Education (ACE) programme/opportunity for continued education	Athletic Career Education (ACE) programme/opportunity for continued education	delivers academic and professional training/education centre is part of the provision

	UK	Australia	France
23 (coach development)	UK sports coach aims to develop high level coaches/aims to develop sports research projects	AIS develops coaching expertise/coaching education as part of ACE	INSEP develops coaching expertise/coaching education part of education centre
24 (equality gender)	Women's Sport Foundation raises profile of British sports women	focus on female role models in schools/Sports Person on Schools Project strong commitment to gender equality	equality opportunity given to women
25 (equality ability)	Disability Sport England/identifies talent/stages competitions	AIS acknowledges/honours disabled athletes/award ceremony/disabled athletes high profile in Sports Person in Schools Project/disabled focus in Pacific School Games	Federation Francaise Handisport (FFH) develop sports excellence
26 (equality racial)	Sport Action Zones/Active Communities Development Fund/initiatives to address racial inequalities/develop talent amongst ethnic groups	end of White Australian Policy gateway to develop talent of ethnic groups/Multi-Cultural Policy gateway to develop talent of ethnic groups	tradition of inclusivity/assimilation/integration to boost representation in national teams
27 (school links)	English Institute of Sport works with talented students from sports colleges	AIS implemented Sports Person in Schools Project/established sports performers work with children in schools	sport science qualification part of PE teacher education
28 (national governing bodies or eq.)	governing bodies in all sports e.g. UK Athletics/governing bodies select/prepare/organise/co-ordinate athletes	governing bodies in all sports e.g. Aussie Rule AFL/have infrastructure/pathway to develop excellence/pathways to excellence may bypass AIS clubs may have Academies e.g. Rugby League ARFL	sports federations responsible for sports development/clubs affiliate to federations who are responsible for sports development/sports federations answerable to Ministry of Youth and Sport

Links

Describe how the USA college sports scene develops sports excellence.

T1 Links (Links within Comparative)**USA**

- College is progression from High School Sports scene
- Little League first stage in progression
- High drop out rates because of elitist focus
- Nature of elitist progression has negative effect on USA mass participation
- Three ethics of inter and intra mural sport e.g. Radical, Lombardianism and Counter-culture
- Exploitation of Scholarship athletes
- Equality (gender) e.g. Title IX (9)
- Equality (racial) e.g. Centrality and Stacking
- American ideologies e.g. American Dream

France

- Talent developed through INSEP
- Specialist regional centres of excellence
- Centres of Sporting Excellence in the regions CREPS
- Centralised Government involvement
- Federations and sports development
- School initiatives to ensure progression of excellence e.g. UNSS, Sporting Sections and Primary Sport Schools
- Amateur/professional sport and French nationalism

Australia

- Talent developed through AIS
- Governing Bodies develop their own 'Pathways' to develop sports excellence
- School initiatives e.g. SEPEP, Intra Inter – school Competition, Pacific school Games
- Sport Linkage programmes
- Sports excellence and Australian culture/ideologies

T2 links across to U.K Contemporary Studies

- Development of talent via USKI
- Governing Body initiatives and tradition of autonomy
- Specialist Sports Colleges
- Work of School Sport Co-ordinators and Development Officers
- Coach Development schemes
- Lottery funding and Government commitment
- Traditional UK ideologies

Compare the strategies to develop sports excellence in the UK with those of Australia or France.

T1 Links within Comparative could include the factors listed above.

Consider the following examples of additional links

Link	USA	Australia	France
mass participation underpins excellence	limited opportunity for adults	More Active Australia	Sport Pours Tous
cultural background	increasing racial equality Hegemonic v pluralistic views history/climate	multi-culturalism ethnics included also to utilise numbers of a small population history/climate	tradition of inclusivity land of asylum use of Empire to develop excellence history/climate
PE in schools	formal screening for sport now in crisis strong Inter-Scholastic Athletic Programme	strong and inclusive initiatives like FMS Programme and SEPEP	status change in PE strong school sport UNSS initiatives

T2 links across the UK Contemporary Studies are identified in the mark scheme as points of comparison

Banded criteria for synoptic assessment

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

**Advanced GCE (Physical Education) (3875/7875)
June 2006 Assessment Series**

Unit Threshold Marks

Unit		Maximum Mark	a	b	c	d	e	u
2562	Raw	60	40	35	30	25	20	0
	UMS	120	96	84	72	60	48	0
2563	Raw	45	33	30	27	24	22	0
	UMS	90	72	63	54	45	36	0
2564	Raw	90	69	62	55	48	41	0
	UMS	90	72	63	54	45	36	0
2565	Raw	45	32	29	26	23	20	0
	UMS	90	72	63	54	45	36	0
2566	Raw	60	44	40	36	32	28	0
	UMS	120	96	84	72	60	48	0
2567	Raw	90	70	63	57	51	45	0
	UMS	90	72	63	54	45	36	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
3875	300	240	210	180	150	120	0
7875	600	480	420	360	300	240	0

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

	A	B	C	D	E	U	Total Number of Candidates
3875	12.25	27.50	48.37	69.55	87.24	100	14041
7875	13.55	33.56	58.77	82.05	96.28	100	10676

For a description of how UMS marks are calculated see;
www.ocr.org.uk/OCR/WebSite/docroot/understand/ums.jsp

Statistics are correct at the time of publication

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