

Physical Education

Advanced GCE A2 H554

Advanced Subsidiary GCE AS H154

Report on the Units

January 2010

H154/H554/R/10J

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This report on the Examination provides information on the performance of candidates which it is hoped will be useful to teachers in their preparation of candidates for future examinations. It is intended to be constructive and informative and to promote better understanding of the specification content, of the operation of the scheme of assessment and of the application of assessment criteria.

Reports should be read in conjunction with the published question papers and mark schemes for the Examination.

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Advanced Subsidiary GCE Physical Education (H154)

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Chief Examiner's Report

This was the third series in which the examining team have had to deal with both the new specification and the legacy specification.

The new specification saw the first G453 (A2) examination which was taken by a small cohort of candidates. Whilst providing a useful experience for examiners it was probably not a beneficial experience for the candidates. As was advised for the AS (G451) paper in January 2009 this unit, G453, does not lend itself easily for first time entry for candidates after effectively one term's study of an academic year's work. The Principal Examiner's comments support this view.

Candidates for G453 were generally found to be under prepared with knowledge that was superficial and lacking the depth and understanding required for examination at this level. Consequently performances were poor with few candidates in this small cohort accessing high marks. This further supports the view that there is normally insufficient time between the completion of AS and the January examination for candidates to gain the necessary depth of knowledge and understanding for the demands of this paper. To simply cover the knowledge aspects of the specification with candidates does not prepare them adequately in order that they can do justice to their capabilities.

There was a significant cohort of 5000 in the G451 examination with 80% of these re-sitting. It should be stated again that it is questionable whether the 1000 candidates sitting for the first time were adequately prepared after one term's study of an academic year's course. Whilst it may be possible to cover the knowledge content demanded candidates again failed to exhibit the necessary depth, understanding and practical application required at this level.

The Principal Examiners on both G451 and G453 indicate that candidates and centres need to be better prepared for the 10 and 20 mark questions. This is not to say that other questions are not equally as important as in G451 the 10 mark questions represent 33% of the total marks whilst in G453 they represent approximately 60% of the total marks.

Centres and candidates should be aware of the importance of the descriptors in the levels of response mark schemes which examiners use. These indicate that the criteria which examiners are using are:

- 1 Knowledge and understanding.
- 2 Analysis, critical evaluation, discussion, explanation, development (the actual question will direct them as to exactly what candidates are expected to do).
- 3 At AS- practical application of knowledge.
At A2 – independent opinion and judgement supported by relevant practical examples.
- 4 Technical specialist vocabulary.
- 5 Standard of written communication.

Candidates therefore need to ensure that they meet these criteria using the knowledge that the question directs them to. They also need to ensure that they spend some time planning and structuring their answers and this was a feature of the best candidates' responses in these questions.

G451: An Introduction to Physical Education (Written Examination)

General Comments

This was the third Unit G451 paper. The first (January 2009) was taken by a very small cohort and the second (Summer 2009) had an entry of approximately 16,000 candidates. This third paper had an entry of nearly 5,000 candidates - 4,000 of whom were re-taking from Summer 2009. So about a quarter of last summer's entry re-took this paper.

- Most scripts were fully completed
- There were relatively few NRs (Nil Responses to questions)
- Use of time during the two-hour exam seemed to be well managed
- There were few, if any, instances where the rubric was misinterpreted
- Candidates performed less well in question 2 than in the other two questions
- With some pleasing exceptions the cohort as a whole showed slightly disappointing knowledge, understanding and consideration of the three sections within the G451 specification.

General comments about the part e (10-mark) questions

Candidates are becoming more aware of the requirements of the 10-mark (part e) questions and made definite efforts to show:

- Knowledge and understanding
- Analysis/critical evaluation and/or discussion/explanation/development
- Clear and consistent practical application of knowledge
- Accurate use of technical and specialist vocabulary
- High standard of written communication.

Extended (part e) questions are marked with a 'levels of response' mark scheme as follows:

- **Level 3:** 8-10 marks for **comprehensive** answers (based on five descriptors above)
- **Level 2:** 5-7 marks for **competent** answers (based on five descriptors above)
- **Level 1:** 0-4 marks for **limited** answers (based on five descriptors above).

Despite evidence of increased awareness of part e requirements few level 3s were awarded. The quality of responses was often competent at best and in the main limited with the key problem being lack of knowledge of topics examined rather than lack of skills in complying with the criteria.

Candidates need to continue developing their skills at answering the extended answers, notably ensuring that they:

- make relevant **key points**;
- **develop** their points
- include **relevant practical examples** where possible.

Note the mark scheme format of knowledge points being numbered, developed points being bulleted and examples also being clearly identified.

Candidates should consider spending a couple of minutes thinking about and preparing a basic plan for their extended answers in order to eliminate repetition of points and a rambling style, which were both evident in many part e answers on this paper.

Report on the Units taken in January 2010

Questions (or part questions) that were answered quite well or well by a large number of candidates were:

- 1a – Movement analysis table and linked questions on muscles
- 1c – (first part) – mechanisms that maintain venous return during exercise
- 1e – The positive and negative effects on the skeletal system of young people performing - contact sports, high impact sports, activities involving repetitive actions
- 3ai - Reasons for sedentary lifestyles
- 3b – Comparison of Outdoor Recreation and Outdoor Education and explanation for limited regular participation in Outdoor Education by young people
- 3e – Discussion on socio-cultural factors that affect participation in physical activity in the UK.

Questions (or part questions) that were answered poorly or very poorly by a large number of candidates were:

- 1b – Newton's Laws of motion relating to the tennis serve
- 1c – (second part) – how increase in blood flow affects cardiac output
- 1d - Neural mechanisms which cause heart rate to change during exercise
- 2a - Justification of the classification of a named motor skill on the open closed continuum with an explanation of which practice methods would be most appropriate
- 2b – Explanation of **the role** of mental practice in the performance of movement skills (2/4 the most common score)
- 2c – Description of the multi-store memory **process**
- 2d – Inverted U theory – how levels of arousal can affect the performance of movement skills
- 2e – Observational learning – Bandura
- 3aii – Physical activity recommendations for active lifestyles
- 3 c – Description of work of home country organisation (e.g. Sport England) and British Olympic Association (BOA).

As always candidates should be reminded to:

- Obey the command word/s in questions. If candidates only identify key points when asked to explain they are likely to gain no marks
- Apply their knowledge to the exact question set
- So, in question 2b if candidates wrote about the **characteristics** of mental practice rather than its **role** they could not score. Similarly in question 2 c if candidates identified **characteristics** of the different aspects of the multi-store memory model (instead of describing the **process**) they could not score
- Learn scientific work, terms, graphs and models thoroughly. Responses that are **Too Vague** (marked TV on script) cannot score
- Remember that if the number of responses required is written as a word in the question (e.g. Qu 1c –'give **three** mechanisms which maintain venous return during exercise') – then candidates should think carefully before responding as only that number of responses will be considered/marked by examiners
- Give relevant practical examples when required
- Prepare short plans for 10-mark questions to organised thoughts
- **Develop** key points of knowledge and understanding in 10-mark questions and include **examples** wherever relevant.

Section A: Anatomy & Physiology

This section was answered competently by a large number of candidates.

- 1 (a) **Use your anatomical and physiological knowledge to complete the table below for the athlete's elbow during the upward phase of the bicep curl. What type of muscle contraction is occurring in the biceps brachii during the downward phase of the bicep curl? (5)**

Generally very well answered - particularly the table requiring joint type, movement and antagonist.

The type of muscular contraction was generally well known and most candidates managed to identify a muscle of the trunk linked with maintaining good core stability.

However – a significant number of candidates failed to write 'triceps brachii' as antagonist even though biceps **brachii** was identified as the agonist on the paper.

Re trunk muscles and good posture/core stability: this tended to be the only question where marks were lost in 1a. The majority went for 'rectus abdominus' (many **Too Vague** with 'abominals')

Few offered multifidus or transverse abdominis, which were perhaps the most obvious and few, if any, offered 'sacrospinalis' –

- (b) **Using a serve in tennis, explain Newton's three laws of motion. (5)**

Most candidates managed to show a reasonable knowledge of Newton's laws with Newton's third law being the most well known/explained.

Here, many candidates failed to score by failing to specify which law they were referring to. It should be noted that it is good practice and exam technique to **name a concept** before describing or explaining it –

Sporting examples were well applied by those who knew and understood the laws – but were vague, confused and /or rambling by others.

A fair number linked their application to the **return** of serve thus failing to answer the question. The commonest score was 3/5.

- (c) **Give three mechanisms which maintain venous return during exercise. Explain how the increase in blood flow affects cardiac output (6)**

The three mechanisms to aid venous return were generally well known. However, candidates must be encouraged to link gravity with the areas above the heart. 'Gravity' on its own was **Too Vague** (as, most of the time, during and after exercise, most blood is below the heart).

The second part of this question was less well answered and many candidates failed to see this as a question on **Starling's law of the heart**. Many responses were basic and simply covered the need for increased blood flow to the working muscles.

Most frequently accessed marks for second part of question were 6, 9, 10, 11 and (less often) 12.

- (d) **Describe the neural mechanisms which cause heart rate to change during exercise. (4)**

Those who did what the question asked generally scored well. Many responses are still **Too Vague** when describing the role of the receptors e.g. suggesting that chemoreceptors detect a **change** in pH or ppCO₂, when it is the **decrease** in pH or the **increase** in ppCO₂ that is required. Some candidates wrote irrelevantly about the change in HR before and after exercise while others described the graph (for not credit) rather than specifically answering the question. Few candidates included 'accelerator nerve' (Pt 7) in their answer.

- (e) **Discuss the positive and negative effects on the skeletal system of young people performing:**
- **Contact sports**
 - **High impact sports**
 - **Activities involving repetitive actions. (10)**

Most candidates made a competent attempt at this question, which proved to be an effective discriminator. Answers were generally well structured with a brief introduction and conclusion. The majority of marks were marked as level 2 with a limited amount of pleasing evidence at level 3.

Candidates who had revised and knew/understood this topic well brought in the specific conditions identified in the specification, namely osteoporosis, osteoarthritis (mainly) and joint stability (sometimes). However, many 'osteoporosis' references were out of context and lacked development. There was some confusion between osteoarthritis and osteoporosis. A significant number incorrectly suggested that exercise causes osteoporosis.

Candidates successfully used their knowledge of the anatomy of bones and synovial joints to link in with the effects of types of activity identified in the question.

Most candidates correctly focused on the **skeletal system** – though a small number wasted time and effort on other body systems notably the muscular system, while others included **irrelevant** information about psychological factors such as aggression. Answers would have been further enhanced by a greater depth of knowledge of the conditions and by including more examples.

Candidates who scored less well here relied on general knowledge. They failed to mention the specific conditions related to the effect of different types of physical activity on the skeletal system. There was much repetition of simple points such as "*making bones stronger*".

Section B: Acquiring movement skills

This section was answered poorly by a large number of candidates and was the least well answered of the three questions on the paper.

- 2(a) **Identify a motor skill in sport and justify its classification on the open closed continuum. Explain which practice methods would be most appropriate for this skill.(6)**

This question was poorly answered and while complex and demanding it is an excellent example of the need to look carefully at the command words. Here, candidates needed to '**justify**' the classification of a motor skill on the open-closed continuum and '**explain**' appropriate practice methods for their chosen motor skill.

Marks were available for the justification and explanation rather than for the identification of a motor skill or its placement on the continuum (which the vast majority did well). As a rule, answers were too brief in the areas where marks were available with explanations of reasons why certain practice methods should be used were vague and/or limited.

A small number were unclear of the topic being examined and wrote irrelevantly about open loop and closed loop control.

- (b) **Explain the role of mental practice in the performance of movement skills. (4)**

Most candidates failed to note that this question was about '**the role**' of mental practice. Most answers, therefore, comprised a description of mental practice rather than an explanation of its function. Marks were quite low with few achieving 4/4. Point 1, 8 & 9 most frequently awarded with other points rarely awarded.

- (c) **Learning and performing movement skills often involves the use of the memory process. Describe the multi-store memory process when performing movement skills. (4)**

Strong answers from the best candidates included description of encoding, chunking and selective attention. However, this question was poorly answered by most. Candidates did not spot that the question was about the memory **process** and mainly offered answers involving **characteristics** of the STSS, STM and LTM which could not be credited. Marks were generally 1/4 (for identifying the three areas) or 2/4 (mostly gained for identifying that the LTM '*stored motor programmes indefinitely*'). Very few, if any candidates hit point 5.

- (d) **Using the Inverted U theory and a practical example explain how levels of arousal can affect the performance of movement skills. (6)**

The vast majority of candidates understood the inverted U and most were successful in their description and so scored 2/6 (points 3 & 4 were most commonly awarded). **However** - for a 6 mark question, candidates generally explained an insufficient number of different points. Those who sketched the graph often failed to gain credit (pt 2) due to inadequate labelling (notably lack of optimum point). Further, many did not relate their practical example to the performance of a **movement skill** (instead focusing on a sporting situation) and therefore examples were either vague or a repetition of the theory mark (point 3). Points 5-8 were rarely, if ever, awarded (i.e. explanations of how the theory is modified to take into account personality, skill level and type of skill). Few scored above 3/6.

- (e) **Using practical examples, explain the process of observational learning when it is used for acquiring movement skills and learning to follow an active and healthy lifestyle. Refer to Bandura's model in your answer. (10)**

This question proved to be the most challenging on the paper and was the most consistently poorly answered. Although most candidates had a general idea of observational learning, could identify demonstration (or watching a performance) and often referred to role models or significant others, they did not show specific knowledge/understanding of Bandura's model. Few, therefore scored above level 1. Those who did know the model were able to identify the stages but were rarely able to develop their points effectively. Those who did show some grasp of the four key aspects of the model often vaguely explained motor reproduction as 'having a go at' the skills rather than having the physical capability' of performing the skill. Few convincing examples relating to acquiring movement skills **and** learning to follow an active and healthy lifestyle were seen which restricted candidates to level 2 (see mark scheme discriminators). Links to active and healthy lifestyles are central to the whole Physical Education A Level specification and are likely to improve as familiarity with the need for their inclusion increases. There was no discussion on mark scheme points 11-14.

Section C: Socio-cultural Studies relating to participation in physical activity

In general this section was answered competently by a large number of candidates.

- 3(a) It is widely accepted that physical activity is part of a healthy lifestyle. However, people lead more sedentary lifestyles now than in the past. (i) Identify reasons for increasingly sedentary lifestyles in the UK today. (3)**

A straightforward, well answered question with a good range of points awarded. Most candidates achieved a minimum 2/3 marks.

- (ii) What are the physical activity recommendations for active lifestyles?(2)**

Poorly answered on the whole with a wide range of vague responses. Candidates needed to be exact and unambiguous here (see mark scheme).

- (b) Identify one difference between Outdoor Recreation and Outdoor Education and explain why there is limited regular participation in Outdoor Education by young people. (5)**

For the first mark on scheme candidates needed to make one direct comparison between OR and OE. To do this efficiently particular and relatively straightforward exam technique was needed and disappointingly most candidates did not adopt this. (it might be worth noting that this same comparative exam technique ie making comparative points systematically should be practised by A2 candidates for their comparative and/or historical option question).

In the main, the explanation for limited regular participation was thorough and accurate with all points (2-8) awarded.

On the negative side, some answers were Too Vague when explaining staffing and facilities – note the mark scheme requirement for **specialist** staff (pt2) and **specialist** or appropriate facilities / equipment (pt 7). Further, weaker candidates should be reminded that outdoor education activities are those that take place in the natural environment, not (as some continue to state) those such as football that happen to occur 'outside'.

- (c) In the UK various organisations are involved with physical activity. Describe the work of both: Home country organisations (such as Sport England) The British Olympic Association (BOA) (5)**

This question was poorly answered –with slightly better scores awarded for the Home Country organisations than for the BOA. Most answers showed a lack of recall knowledge for both organisations and were either inaccurate or Too Vague. Even so, most managed Point 1 (the promotion of mass participation as the work of home countries) and some achieved Point 4 (distribution of National Lottery funding). Other marks were rarely awarded.

- (d) The game of American Football is extremely popular in the USA Give reasons for the violence and commercialism associated with American Football. (5)**

Generally well answered. Many knew and understood both concepts (violence and commercialism) and scored appropriately. The first part was answered better overall than the second.

Candidates hit a wide range of points. Points 2 (rules) 4 (Lombardian influence) and 5 (nature of protective armour) were most common as was 12 (game designed for TV) and 13 (teams run as franchises)

Candidates wrote frequently, generally and fairly extensively about the Super Bowl but

often failed to link the Super Bowl to commercialism or the worldwide coverage that it attracts so missed out on Point 14.

On the negative side some answers lacked balanced coverage of the two parts of the question which restricted their overall scores (there being a sub max of 3 from one section).

(e) Discuss social and cultural factors that affect participation in physical activity in the UK. (10)

This proved to be the most accessible of the three extended questions on the paper and seemed to give candidates something to get their teeth into. It differentiated quite well with candidates hitting all three levels – most falling within level 2 (5-7 marks). Better answers were structured around a simple, effective plan which helped with organisation. Most were able to identify a wide range of points on the mark scheme which related to opportunity, provision and esteem and many were able to identify various minority groups. Points 17-23 were less frequently accessed, though the impact and influence of London 2012 did feature in several answers.

Weaker responses showed lack of knowledge, organisation, development and relevant examples which limited access to the higher levels. Many L1 answers were repetitive often of point 18.

G453: Principles and concepts across different areas of Physical Education (Written Examination)

General Comments

This first examined session of the new specification for the A2 was sat by relatively few candidates. The majority of candidates who sat this examination were under-prepared; not surprising given that many had only studied the examined topics for just over one term. This paper is wide-ranging with three different topic questions having to be chosen from five on the paper. There were few rubric infringements with one or two candidates answering more than the three questions required. Very few ran out of time but some of the weaker, less well prepared candidates left out one or more of the extended (20 mark) questions.

This A2 paper is designed to test not only the knowledge and understanding related to Physical Education theory but also applied knowledge, including the ability to critically analyse and evaluate Physical Education material from the studied topic areas. The vast majority of candidates chose the questions on Historical Studies, Sports Psychology and Exercise and Sport Physiology. Only a few candidates attempted the Comparative Studies question and even fewer the Biomechanics question.

Although many of the candidates showed a fairly broad range of knowledge and understanding, this often lacked depth, especially in the extended (20 mark) questions where depth of analysis is expected as well as a broad knowledge and understanding. The quality of written communication was adequate overall, although in the extended responses candidates often showed little planning and their answers often became incoherent and lacked structure. The use of technical vocabulary by the most able candidates was good but often candidates did not use the appropriate vocabulary for describing and explaining underlying concepts and theories. Some of the most able candidates, who had clearly practised responding to examination questions, timed their responses well and wrote shorter sentences that were then briefly but accurately expanded, often with relevant practical examples.

The 20 mark questions set at the end of each topic area were largely poorly answered with candidates often only responding superficially and not developing their answers sufficiently. This 20 mark question is marked using a levels mark scheme, similar to those that have been used for the A2 papers from the legacy specification. This means that candidates' responses are not judged only by their number and relevance but also by their depth and development. Centres should re-visit the mark schemes used in this examination and in the specimen examination materials to review the descriptors used for candidates to access the top bands. Very few candidates scored the highest marks in the extended question because they often did not have enough knowledge drawn from the specification but also they could not apply it sufficiently. These questions often contain two or more strands and unless the candidate visits all of these strands in their answer they are unlikely to score the higher level marks. A few candidates scored very well and they were the ones who would make a point and then develop it using appropriate technical terminology and if required relevant practical examples. These candidates often wrote a short plan before their response and they visited all aspects of the question.

Candidates should be made more aware of the meanings of command words used in questions because many candidates described rather than explained and gave an outline rather than a critical evaluation. Some candidates scored few marks when responding to questions asking for practical examples as they simply wrote a brief and under-developed practical example or gave no example at all. Others thought about their examples and made sure that the points they were making were exemplified.

Comments on Individual Questions

Historical Studies

1.
 - a. The better candidates recognised that this question demanded that each characteristic of popular recreation needed to be linked to socio-cultural factor/factors. Many, for example, linked the often violent activities with the harshness of the lifestyle experienced by many at that time. The better candidates also linked the different activities to the feudal system at that time. The weaker candidates simply wrote a list of popular characteristics and did not link these to any socio-cultural factors. The last part of this question asked the candidates to state the impact of one of these socio-cultural factors on participation and performance. Some candidates completely ignored or missed this part of the question. Candidates are reminded to answer all parts of each question and to read through each question carefully so that there are no aspects missed out. The better candidates could relate factors such as the availability of money, class and education to participation and performance, for example linking wealth with affording club or gym membership.
 - b. The better candidates gave an explanation rather than a description and gave a good account of how fee paying, non-local and boarding characteristics affected the development of games in nineteenth century public schools. Once again the last part of the question asked for a comment on how one of these characteristics impacts on young people in schools today. Some of the better candidates made relevant comments such as fee paying can reflect the facilities and opportunities available for young people. Others linked boarding with positive aspects such as more opportunities for sports experiences or negative aspects such as isolation and lack of family contact.
 - c. This was generally poorly done. Hare and Hounds proved to be the most popular example of a form of athletics but many did not develop this point into similarities and/or differences with athletics experienced by young people today. Consequently these candidates could not score many marks. Some of the better candidates wrote about sports days as a festival occasion and linked this with sports days being 'big events' today.
 - d. This was again generally poorly answered. Very few candidates had a grasp of the development of public baths and many took a different route and explained well the importance of spas for the wealthy and the development of seaside bathing but of course these do not answer the question set and so few marks were scored. The better candidates gave a broad range of factors linked to the development of baths and made clear reference to contemporary factors as required by the second part of the question. The best that scored marks associated with the top level of the mark scheme showed detail knowledge and analysis with well-argued comments giving clear and relevant practical examples. The best had a sound structure to their response and answered both parts of the question. (See general comments about responses to the extended questions).

Comparative Studies

2.
 - a. The few candidates who answered form this section scored well in this first part and showed a good understanding of the dominant values in the UK and the USA. The best candidates gave several points regarding the UK and then several points about the USA, thus balancing their answer and accessing all the marks available.
 - b. Once again candidates showed a reasonable grasp of physical activities in the USA and were able to give a number of valid points. The least able gave answers more relevant to elitist sport in the USA rather than answering the question set and referring to mass participation. The second part of the question compares the USA with the UK but many candidates either left this out or gave superficial or wholly inaccurate responses.
 - c. Many candidates showed a good understanding of the development of association football in the UK with relevant references to the mob games and public school development. There were only a few candidates who were able to explain the growth from the early days of Australian colonisation to more recent developments.
 - d. This theme of lack of depth in knowledge of PE and sport in Australia is evident in the responses to this extended question. A comparison was required along with the requirement to comment on relevant cultural factors. Too many candidates commented on geographical aspects rather than socio-cultural influences. Many candidates wrote generally accurate information about PE and sport in the UK but had very little knowledge of how either is provided for in Australia. Some candidates recognised the importance of SEPEP in Australia but did not develop such points.

Sports Psychology

3.
 - a. Many candidates attempted this section and scored quite well in comparison to some other sections. The zone of optimal functioning was well understood by some candidates who showed a good depth of understanding of this concept and referred to affective influences as well as the concept of cue utilisation. The least able linked the zone with feeling fulfilled and being an elite athlete. The best recognised the individual influences that affect each athlete and that different levels of arousal are needed by different athletes to enter the zone.
 - b. Many candidates ignored the command to use practical examples and consequently scored few marks in this question, even though they showed some knowledge related to goal setting. A typical example of this is a candidate who explains the SMART concept for goal-setting but does not give one single practical example or who gives a **vague** reference to one aspect of goal setting. Those candidates who had been prepared well gave lots of practical examples and were able to give a good explanation of how goal setting can improve participation. Some candidates concentrated too heavily on performance rather than to try to relate their answer to participation. Some were able to explain that there are links between performance and participation but many were unable to make this link and therefore scored few marks.

- c. This was generally well answered by many candidates, although again some failed to give practical examples. The positive and negative effects were well explained and the best candidates gave some accurate psychological evidence to back up their points. This is a 6 mark question and therefore requires more than a cursory description. The better candidates for example not only recognised the importance of raised arousal as a response to an audience but also linked this with personality types and types of tasks undertaken.
- d. Many candidates were unable to apply psychological theories to a situation – in this case a disaffected young person. The most able drew from attitude theories, attribution theories to answer all parts of the question. This question has different strands to it and the better candidates were able to identify these strands and ensured that they responded to each. For example the triadic model for attitudes was applied; Weiner's model of attribution applied and reattribution applied in the last part of the question as well as the use of positive reinforcement, raising confidence and cognitive dissonance. This question was an excellent opportunity for candidates to draw from at least two aspects of the specification, but unfortunately many had not the depth of knowledge required to apply theory to practice.

Biomechanics

- 4. a. Very few candidates answered the Biomechanics question. Many could identify the axes of rotation accurately but some did not give the required sporting example to score maximum marks.
- b. Most gave an appropriate definition of the centre of mass and some were then able to explain why the Fosbury Flop is a preferred technique in the high jump. Those candidates who gave a full explanation that included the position of the centre of mass in relation to the body gained the better marks. The candidates scoring low marks gave a description of the body shape using this technique but did not give the reasons why.
- c. Those candidates well prepared to answer this question at this early stage of the academic year were able to complete the calculation. The majority showed their calculations well but some did not and therefore did not access the higher marks. Very few candidates were able to give a good explanation of why the lever system is more efficient.
- e. Some candidates did not attempt this extended question. Those that did sketched an appropriate free body diagram but some did not indicate the forces acting on the ball. The best candidates answered all parts of this question and were able to evaluate the different types of spin in sport. The better candidates also gave relevant and fully explained practical examples.

Exercise and Sport Physiology

- 5. a. Most candidates attempted this section. Some candidates were able to describe well the main processes involved in the alactacid component of recovery including the amount of oxygen used and the time the process takes place. The weaker candidates gave irrelevant material or simply missed this question out. There were five marks available for this part of the question so it is expected that the candidate should give a full description to score the full five marks.

- b.** Very few candidates could explain what is meant by the term metabolic equivalent (MET). Some recognised that knowledge of METs could be used to adjust the diet and a few wrote that METs can be used to calculate the overall energy cost of a training session.
- c.** Most candidates scored some marks in this section but many were not able to give enough information to achieve high marks. Too often very superficial answers were given simply stating the value of carbohydrates, rather than answering the question set and stating why it is important to have adequate supplies. Most candidates scored a mark for describing the use of carbo-loading but few scored the maximum marks available.
- d.** Some candidates devised an appropriate six month training programme to develop aerobic capacity but too many did not answer the question set and gave only a brief account with some vague references to principles of training and only occasional references to periodisation. The better candidates created a detailed and progressive programme with the training aims of each cycle stated. These candidates justified their programme with training principles using sound examples from their programme. Points that are well made and developed with sound examples score well, especially if the writing is fluid and contain good technical vocabulary. Too many candidates seemed under-prepared for this question.

Grade Thresholds

Advanced GCE Physical Education H154 H554
January 2010 Examination Series

Unit Threshold Marks

Unit		Maximum Mark	A*	A	B	C	D	E	U
G451	Raw	90	n/a	53	47	41	35	29	0
	UMS	120	n/a	96	84	72	60	48	0
G452	Raw	105	84	75	66	57	48	39	0
	UMS	140	126	112	98	84	70	56	0

Specification Aggregation Results

Overall threshold marks in UMS (ie after conversion of raw marks to uniform marks)

	Maximum Mark	A	B	C	D	E	U
H154	200	160	140	120	100	80	0

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

	A	B	C	D	E	U	Total Number of Candidates
H154	4.95	15.64	39.11	72.67	95.74	100	1010

1010 candidates aggregated this series

For a description of how UMS marks are calculated see:

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