

# Examiners' Report Summer 2008

GCSE

## GCSE Physical Education (1827/3827)

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## Factors Affecting Participation and Performance - 1827/01

### Q1

Questions presenting the least difficult amongst the first 10 multiple choice questions were: (a), (c), (g) and (j). These questions tested candidates' knowledge of:

- Definition of health
- Balanced diet
- Use of RICE
- Bone development.

The most challenging of these questions were:

(d), (f) and (h):

- Effects of smoking
- Identification of injury type
- Definition of cardiac output

### Q2

The format of this question varied compared to previous years. With hindsight the phrasing of the question in part (a) would have been clearer if 'and' had been stated on its own rather than and/or. To ensure candidates were not disadvantaged by the wording of the question candidate responses were scrutinised and the mark scheme adjusted. In effect it was felt that the change to the wording and mark scheme made part (a)(i) and (a)(ii) more accessible to candidates.

Provided candidates selected a minimum of one benefit of exercise from the list in (a)(i) they gained a mark. The requirement for (a)(ii) demanded that the candidate apply their knowledge. In previous years candidates have been asked to state a benefit of exercise, this year the benefits were given and candidates had to explain how the benefit they selected in (a)(i) was achieved. Clearly if candidates selected more than one benefit in (a)(i) this gave them greater scope on which to base their answers in (a)(ii). Most candidates clearly linked 'feeling better' as a mental benefit that could arise as a result of any of the physical benefits listed. Many candidates correctly explained that weight loss resulted from using up stored energy, although where candidates associated looking good with weight loss this was not credited. Other popular answers focused on improved fitness through increasing the demands made on the body. Candidates who failed to score on this question normally did so because they either repeated the benefits already given or failed to link their explanation to one of the benefits they selected in the first part of the question.

Part (b) was extremely well answered with the majority of candidates correctly identifying that the missing 'type' of benefit was social and that this was achieved through meeting friends.

Part (c) was not as accessible for candidates as (b). Co-operation was often associated with communication and socialising rather than the required response relating to team work. Competition was more accessible although some candidates failed to score as their answers were vague, simply repeating the question and writing 'compete against others' or 'want to win'. Many candidates did however gain a mark for this question, identifying the opportunity to be competitive by playing other teams, or trying to beat the opposition.

### Q3

Muscular strength was explained well, albeit in terms of how much weight one could lift rather than a more technical definition. This resulted in some repetition in (ii) and (iii) where candidates often referred to weight lifting and lifting weights. Although weight lifting was a popular response, rugby featured highly along with boxing. Candidates did not find this question difficult, however part (b) was more challenging. It is important that candidates differentiate clearly between muscular endurance and cardio vascular endurance when answering questions related to health-related exercise so that the examiner can be clear which type of endurance the candidate is referring to. Candidates often failed to score when their responses could be applied to cardiovascular fitness rather than muscular endurance. For example, the ability to work for long periods of time without tiring. The most common answer for (ii) was cardiovascular endurance (or an acceptable alternative term) although some candidates related their answer to body composition and flexibility. Where given the body composition responses tended to be good, although some of the flexibility answers in (iii) related to a previous question in terms of injury reduction rather than stride length required by this question. Incorrect responses tended to relate to skill-related aspects of fitness or training methods.

### Q4

Despite being given the components of fitness to choose from in the question some candidates offered alternative components in their responses. These alternatives were often health related and would not have gained credit. If asked to select from a list/box/table candidates will need to do so to ensure they gain available marks. Candidates who did select from the box gained a mark for explaining how this component was used by the swimmer, therefore those that only gave a definition rather than apply their knowledge did not gain a mark. Definitions of power and speed were reasonably well known (although there was some confusion between power and strength), although very few candidates were able to articulate the difference between the components, once again just giving definitions rather than thinking about the difference between them. This was set as a differential question and served this purpose. The use of power in sporting activity was answered extremely well with a variety of activities/techniques given, for example tennis serve, releasing the javelin, take off in high jump and sprint start. Very few answers were too vague to achieve the mark (eg football, running).

### Q5

Overload is still confused with 'over-doing it' and consequently this type of response did not gain a mark, despite candidates being able to state how you could identify overload when looking at someone's personal exercise programme (PEP). Part (b) was surprisingly challenging for many candidates. Many candidates correctly identified specificity and progression but could not explain the principles without stating specific or progress. Specificity was the most used principle. Progression was often incorrectly related to performance rather than training. Some candidates repeated principles already given, whilst others listed methods of training instead. Popular incorrect answers were principles that are not stated on this specification (tedium). Some candidates stated reversibility, therefore not applying their knowledge as the question asked for principles that would be applied to improve muscular endurance; this principle would not be applied deliberately.

### **Q6**

Fartlek was reasonably well known by candidates and even where it was not, many candidates correctly identified the anaerobic part of the training session described in the question. Where there were issues this tended to relate to part (iii) as candidates wrote about interval training not Fartlek and so could not achieve the mark. Part (iv) was a differentiated part of the question. Candidates needed to recognise that both training methods provided opportunity for recovery which a number successfully did. There was some uncertainty regarding the type of muscle contraction, unsuccessful responses referred to antagonistic action; muscle fibre types or specific names of muscles involved in the action. Of those that realised the requirements of the questions very few stated isometric rather than the required answer isotonic. The final part of the question was well answered, the most popular answers being bigger and stronger muscles or increased muscular endurance. Where a list is required candidates should ensure they only place one answer per line.

### **Q7**

Apart from some minor confusion this question was well answered. The most common error was where candidates repeated the question word 'slim' in part (b).

### **Q8**

This question was well answered. The main three different responses related to: fun; fair and safety. It was pleasing to see so many candidates who were able to give a range of responses to gain maximum marks for this question.

### **Q9**

Again, a well answered question, candidates coped well with the style of the question, with the majority scoring 5 or 6 marks (out of a possible 6). Where there was an incorrect answer it tended (but not always) to be in part (iv) where a variety of preventative measures were given to stop grazes from slipping including ski jackets; helmets and umpires. Candidates followed the instructions in the question and only used preventative measures once.

### **Q10**

Most candidates identified red blood cells as the first required answer based on the information in the final column of the table. Another well answered aspect of the question was in relation to clotting the blood, although plasma was often stated as the component rather than platelets. Some answers were vague; for example oxygen is transported in the blood was not credited as the final column on the paper states oxygen transport. To gain credit here candidates needed to refer to the oxygen carrying capacity of the red blood cells/haemoglobin.

### **Q11**

Candidates were not familiar with the required terms for this question, a mixture of substitutes were used ranging from cardiac output to antagonistic. Some candidates tried to guarantee a mark by repeating the same term in all three sections of the question in the hope it would be correct on one occasion; others confused vital capacity and tidal volume. Of the three terms oxygen debt appeared most well known.

### **Q12**

Femur was well known but there is still confusion over the location (and or spelling) of the tibia and fibula. Whilst marks are not normally deducted for incorrect spelling (provided terms are clearly recognisable) in this instance tibia and fibula must be spelt correctly to demonstrate that the candidate has not confused one with the other, thus tibia is not an acceptable alternative for fibula. Part (a) (iv): long bones, was well answered although the importance of this bone type was not. Once again this was a differential question with some candidates giving very good answers in relation to leverage. Part (b) (i) proved problematic for those candidates who did not know the technical terms for the ranges of movement possible at hinge joints, therefore these candidates stated bend and straighten rather than flexion and extension and failed to gain credit.

### **Q13**

Although the terms to be used were provided candidates still had to place tendon/ligament in the correct space based on their qualities. Part (d) proved to be the most challenging with many candidates placing responses in the incorrect order.

### **Q14**

More candidates than expected found this question difficult. Although this area has proved difficult in the past by providing a series of options the question was designed to be more accessible, which it was for some candidates. A common error was the identification of the heart as an involuntary muscle rather than cardiac or to identify involuntary muscle as a muscle under conscious control.

### **Q15 (a)**

Many candidates recognised aesthetic appreciation from the description, and gave word perfect definitions of fitness and performance. Where a question requires a definition it is important that candidates learn the definitions in the specification glossary to ensure credit.

### **Q15 (b)**

There were a range of responses for this question. Those candidates that read the question carefully noticed that it asked for an explanation of each component, therefore just stating 'Frequency', 'Intensity', 'Time', 'Type' was not credited as this is stating the component rather than explaining it. The required explanation was: how often/how hard/how long/training matching the needs of the activity. The second part of the question required application, although this requirement was often ignored and candidates gave very general statements about needing to do more training. Simple examples were required, such as increasing training sessions from two times per week to three.

### **Q15 (c)**

This section of the question was well answered. Candidates interpreted the graph well, recognising resting heart rate, increase in heart rate due to activity, and recovery. The explanation in part (vi) was largely thorough and accurate. There were some excellent answers to part (vii) although clearly this was the differential part of this question providing some creative answers from some of the candidates.

### **Q16 (a)**

Flexibility was the required answer for the first part of the question and was provided by the majority of candidates. A significant number of candidates also correctly identified the potential injury as a strain or muscle tear.



### **Q16 (b)**

The hamstrings were located by candidates in a number of places, the majority of which were placed in the leg. Some candidates used the diagram to draw where the muscle could be found, a good idea as there could be no misinterpretation. Some candidates mentioned the thigh but did not specify front or back of the thigh to pinpoint the location of the muscle.

### **Q16 (c)**

Candidates are still losing marks unnecessarily due to failing to give correct anatomical name for quadriceps, preferring instead to call them quads. Although a popular term, it should not be used in a P.E. examination. The term antagonistic had some superb answers with candidates' responses way in excess of that required for this specification. The basic answer of one muscle contracts whilst the other relaxes was sufficient for credit without going in to detail of the various roles of the muscle pair. Incorrect answers were varied, including reference to flexing and extending of muscles, eccentric muscle contraction and muscles working together in pairs.

### **Q16 (d)**

Whilst some candidates did not attempt this question, most candidates gained a minimum of 2 marks for this question by recognising the role of the skeleton in terms of protection of vital organs. Others also identified the role of the skeleton in blood production. The less accessible marks were where blood production took place (bone marrow) and a specific example of protection related to the activity in the question (badminton). Some candidates ignored the activity using other sports such as football, whilst others gave very vague answers that were not applied to the context of the question, stating for example, that the bones protected from injury if they fell.

### **Q16 (e)**

Most candidates gained some marks for this question, many by just naming two other sports that might be more dangerous than badminton. Generally, the choices of activities were well thought through and worthy of credit. To gain credit in the second part of the question candidates needed to explain an actual injury that could result or give a description of a situation within the activity that could lead to injury. For example, popular answers related to boxing and getting punched or rugby when the scrum collapses. The third column required a link to be made between the candidates' stated activity and badminton. Many candidates failed to make this link, instead continuing to explain the issues with the activity they had identified. Some candidates however produced very good comparisons for example stating that rugby had greater risk as it was a contact sport and badminton was not.

### **Q16 (f)**

This was a well answered question, particularly encouraging were the number of candidates who gave cheating and illegal as their answers. Once again candidates had to ensure they gave different 'types' of reasons to achieve 2 marks. The main two responses were related to making the injury worse and cheating.

### **Q16 (g)**

This question was correctly answered by a large number of candidates. The only issue was for those who failed to read the scenario and therefore ignored the statement "if they are taking another type of illegal drug?" This statement was designed to guide the candidates to talk about 'masking' or removing the other drug from the system rather than taking diuretics to lead to weight loss.

### Q17 (a)

The anatomical names associated with the heart and lungs were well known, although of the two systems the lungs were less well known. Candidates needed to be careful of their spelling of Bronchiole so as to avoid confusion with Bronchus.

### Q17 (b)

Movement of the ribs was well known, although occasionally candidates would just state 'up' or 'out' rather than 'up and out'. Diaphragm was slightly more confused, some stated that this relaxed and lowered for example. Many candidates understood why the ribs and diaphragm moved in this way during inspiration although occasionally related their answer to oxygen rather than air.

### Q17 (c)

Many candidates had difficulty completing the table correctly. Very often the percentage for one gas would be known but not for both oxygen and carbon dioxide.

### Q17 (d)

The bones forming the elbow joint were well known, as was the muscle responsible for bending the arm at the elbow joint. The area of difficulty for candidates was the final section of the question which asked them to state the muscle responsible for adducting the upper arm at the shoulder. A variety of answers were given ranging from the trapezius to triceps although some candidates correctly stated the pectorals.

### Q17 (e)

This section was well answered. Many candidates correctly identified fast twitch muscle fibres and recognised that a disadvantage of this muscle fibre type is their lack of endurance. Given this, it was disappointing that not all candidates could then apply this knowledge to identify a suitable method of training to improve this muscle fibre type.

### General comments

1. Candidates should be encouraged not to repeat key question words in their answers eg they should not use specific when answering a question about specificity, or progress when describing progression.
2. If a question asks for application to an activity make sure this is addressed in the answer by referring to the activity eg Q16 (d) cranium protects the brain if the player is struck by the racket in the head. The addition of the underlined text makes the answer relate to the activity in the question so gains the mark.
3. If the question asks for a number of reasons/responses candidates should vary their answers to make sure their responses do not overlap, eg Q6 (iv) regarding effects of regular training on leg muscles and Q8 relating to the reasons for rules in sporting activities.
4. Students should make sure they are familiar with expressions such as:
  - Type of muscle contraction
  - Bone type
  - Range of movement
  - Class of drug

## 3827 Paper 01 - Short Course

### General Comments

Centres will be aware that the questioning format for this paper is entirely multiple choice, and similar in style to the first 10 questions on the full course (1827) paper. On the short course paper, candidates enter their answers on an optically mark record sheet which is fed directly into the Edexcel computers to mark and produce the candidates' results. Along with the results, the computer produces valuable statistical evidence on how each question has been answered by each candidate and determines the percentage of candidates who selected each of the four options (A, B, C or D) for each question. It was always planned that this multiple choice question paper is not 'stepped' in difficulty and therefore does not become harder towards the end of the paper as the senior examiners want candidates to answer all questions.

This year, 24,737 candidates sat this paper, an increase of over 3,000 on the 2007 examination cohort. This number has risen by 3000 candidates each year since 2005 when 15,191 candidates sat the Short Course examination.

Centres, and therefore candidates, appeared well prepared for the paper, especially at the 'top end' where some candidates scored maximum marks. There are still candidates, though, who fail to answer every question on the paper, and it might be worth while reminding candidates next year to guess if they do not know the answer instead of leaving a blank. A 25% possibility of getting an answer correct is far better odds than 0.

To achieve the higher grades, candidates are expected to apply their knowledge of all areas of the Short Course specification. Statistical evidence from the paper clearly shows areas of the specification that are well known and those that are not and as with the full course paper, this can also vary from centre to centre. The aim of Edexcel's Inset courses is for experienced examiners to guide teachers on how to approach the teaching of this paper to improve centres' examination results.

## Candidates' responses to the questions

Centres might be interested to know which questions were deemed to be the easiest, of medium difficulty and the hardest ones to answer on the 2008 multi-choice paper. This is an examination of candidates' knowledge and therefore questions have to be written of varying levels of difficulty so that when we Award we have a spread of results. The 14 questions that were answered correctly by 60% or more of all the candidates were questions 1, 3, 8, 9, 10, 13, 14, 17, 30, 31, 33, 35, 36, 39.

Questions 10 ("Which statement identifies two physical benefits of exercise?") and 35 (which asked about sports injuries and preventative measures that can reduce the chance of injury) were both answered correctly by 82% .

There were 7 questions answered correctly by between 50% and 59% of all candidates. These were questions 2, 4, 6, 22, 29, 34, and 37.

Those questions that were answered correctly by between 40% and 49% of candidates were questions 5, 7, 18, 23, 24, 26, 28, 32 and 40.

A large number of candidates had problems answering the remaining questions. Less than 40% of candidates answered the following questions correctly.

Q11: 68% of candidates gave option A (Muscular endurance, cardiovascular endurance, agility and reaction time) as their answer as the fitness components required by "a long distance runner" and only 14% gave the correct answer (B).

Q12: The four answer options were answered equally by the candidates. 28% gave the correct answer (A) with 31% giving D as their response.

Q15: 59% of candidates thought that "cardiovascular endurance" was a skill-related component. 22% chose the correct (D) option.

Q16: 68% thought that "co-ordination" was a component of health-related exercise. Again, 22% selected the correct (D) option.

Q19, Q20, Q21 and Q25, Q27: These were part of grids with three variables in each grid. Candidates had to read the stem (Principle and effect/benefit) then answer with one of the four options. Candidates would have found it beneficial to answer this type of question (and any other question with a grid) by witting on or marking their answer on the question paper first. A simple tick/cross or Yes/No in each box on the question paper, would help them to summarise their decisions and opt for one of the 4 answers.

Q38: Only 265 of candidates answered this question correctly. 52% answered “C” without reading the “Second part of statement” thoroughly enough to understand that it was incorrect, too.

In preparing candidates for this examination, as with the full course, short course candidates should:

- Read the questions carefully and thoroughly to ascertain what the Principal Examiner is asking; look for any obviously wrong answers in the 4 options. Work through the question groups and match the most obvious first.
- Learn the 5 Health-related exercise, the 6 Skill related fitness components, and the 8 Principles of Training through their application in the candidates’ Personal Exercise Programmes.
- When revising for their examination, candidates should try to apply their knowledge to sporting activity as questions will require some application of knowledge.
- Finally, advise you to use Edexcel’s ResultsPlus service. It is free and will give your centre a breakdown of how each question was answered by your own students (both in the 1827 and 3827 examinations). It is available from the results day onwards and you can use it to plan your future teaching.

ResultsPlus is available on [www.resultsplus.org.uk](http://www.resultsplus.org.uk) and we can assure you that it will really help you analyse your 2008 GCSE PE examination results.



## **1827/3827 Practical Assessment (Components 2A, 2B & 2C)**

GCSE Physical Education 1827/3827 Practical Activities 2a, 2c and Analysis of Performance 2b.

Performances have been maintained at the level of previous years.

### **Performance of Candidates:**

Comments from moderators were very similar to the 2007 report and many commented that the candidates were well prepared and highly motivated for the practical assessment day. In many schools the teachers had organised a practice moderation day and in some cases had practiced the Analysis of Performance question and answer session to give the candidates the experience of answering questions under pressure, but the same questions should not be asked on the actual Moderation Day it is a “new” analysis of a new performance to “justify” the coursework mark.

### **Analysis of Performance**

The Analysis of Performance places a responsibility on the teachers and some have been criticised by moderators for asking too many questions on the rules and not enough on the more testing parts such as the observation, analysis and evaluation and bringing about improvement in performance. Some teachers were criticised for leading the candidates and asking some questions which were too similar and from a bank of rehearsed questions which is obvious to the moderator on the day. Moderators commented that it is evident that in schools where teachers actually teach the Analysis of Performance candidates do better. Some moderators commented that the Analysis of Performance is now organised much better for the moderation day.

### **Practical activities**

Practices continue to improve to allow candidates to show their ability at their level of performance and this has been encouraged. It was commented that the higher level candidates often do less well on the static drills as they seem to feel that they are too easy and unrealistic and they score better on testing practices in game type situations.

Certain activities continue to be mentioned by examiners in their reports, such as boys offering netball but having little playing and competitive experience but because they play in a mixed game they often score high marks simply because they are stronger than the girls, but they lack the technical knowledge and experience. Rounders was again often mentioned as an activity that continues to be over marked by Teacher Examiners.

## **Exercise Activities**

Fitness Training is now a well established activity and continues to grow because it allows the opportunity for the teacher to teach and apply the theory as well as for the candidate to take part in a very worthwhile practical activity. Teachers should note that a good level of intensity is important to the mark awarded to the candidate especially mentioned this year in this regard was circuit training and weight training. Good leading by candidates was often noted by moderators in this activity especially in aerobics.

Once again moderators have mentioned that on the administration side the schools often do not produce the Moderator Information Sheet, page 93 of the Coursework Guide, and this is a requirement in this activity.

## **Personal Exercise Programmes (PEP)**

Personal Exercise Programmes (PEP) once again ranges from the outstanding to the unavailable but they are a requirement both for the Analysis of Performance interview and for the fitness training. Candidates will be marked down if they do not have their PEP available on the moderation day.

## **Difficulties Relating to Assessment**

Some centres did not download the ICE document and this lead to problems with their organisation. Centres need to be reminded to do this in future.

## **Administration**

Centres that use the electronic forms of documentation are more accurate than those that do not but marks are sometimes not carried across accurately to the OPTEMS. Some centres do not put the candidates in the correct order on the PE34 and PE34AP. Paperwork still arrives less than 7 days before moderation day but in general centres improve year on year.

Moderators commented on the accuracy of centre marking and most centres standardise within departments and this is very important especially in centres with large staff numbers teaching the subject.

There is still some criticism of centres not using the criteria and not knowing that they have to “justify” the coursework mark for the Analysis of Performance not mark it on the moderation day.

Identification was mostly very good with many schools using numbered bibs but some still use the small numbers pinned on and these make it very difficult especially for video moderations.



## Video Assessment

**Video Moderation:** Many of the same comments apply as for last year but although this is a comparatively small number of centres it has to be done properly. It is very important to include a selection of Personal Exercise Programmes with the videos and this includes the Fitness Training unit if offered. If the Cooper's Run is used for continuous training then an accurate measurement of the course and number of laps completed needs to be confirmed and resting, working and recovery heart rates of the candidates noted for the moderator.

In athletics, times and distances are important as the final mark is based upon a combination of technique and performance in the events. This can be shown on the video with a close up shot of the stopwatch or tape.

In Personal Survival, students should not stop and rest between tasks, eg the 25 metre swim and the HELP position, nor should they touch the end of the pool during the 100m swim and they must be in the correct clothing. Many schools, both those doing video and live assessment were criticised for trying to "work around" this rule again this year.

Commentaries are very important and most helpful on the videos.

In the Analysis of Performance a performance needs to be shown for the candidate to analyse and to have props available where necessary for the candidate to use to demonstrate.



## GRADE BOUNDARIES - SUMMER 2008

### Paper 1: Factors affecting participation and performance (1827)

Grade	A*	A	B	C	D	E	F	G
Raw mark	175	161	147	133	110	87	64	41

Component	A	C	F	Weighting	% Contribution
	Mark	Mark	Mark		
01	125	110	52	0.533	40
2A	34	24	12	1.250	25
2B	17	13	6	1.000	10
2C	34	24	12	1.250	25

### Paper 1: Factors affecting participation and performance - Short Course (3827)

Grade	A*	A	B	C	D	E	F	G
Raw mark	84	76	68	61	51	41	31	21

Component	A	C	F	Weighting	% Contribution
	Mark	Mark	Mark		
01	29	22	10	1.00	40
2A	17	13	7	1.25	25
2B	17	13	6	0.50	10
2C	17	13	7	1.25	25

1827 Example	3827 Example
$01 = 135 \times 0.533 = 71.955$ $2A = 38 \times 1.250 = 47.5$ $2B = 19 \times 1.000 = 19.0$ $2C = 37 \times 1.250 = 46.25$ $71.955 + 47.5 + 19.0 + 46.25 = 184.705 = 185 = A^*$	$01 = 24 \times 1.00 = 24.0$ $2A = 14 \times 1.25 = 17.5$ $2B = 16 \times 0.50 = 8.0$ $2C = 14 \times 1.25 = 17.5$ $24.0 + 17.5 + 8.0 + 17.5 = 67 = C$

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