

GCSE

Edexcel GCSE

Physical Education (1827)

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Examiners' Report

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Physical Education 1827

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June 2005 GCSE Physical Education - Examiners' Report

Paper 1 (1827/01 Full Course) - Factors Affecting Participation and Performance

General Comments

As with last year, the vast majority of candidates confined their answers to the allocated spaces (a practice to be encouraged due to the need to scan the papers prior to marking) thus making the electronic process of marking of the candidates work more straightforward. As in previous years candidates, within and across centres, achieved a range of marks. At the 'top end' candidates were obviously very well prepared and were able to give full and detailed answers, clearly demonstrating their ability to apply all areas of the subject content to the performer and training. Candidates achieving the lower marks resulted where answers were omitted, too brief or lacking the required application. To achieve the higher grades candidates would be expected to apply their knowledge of all specification areas fully to a variety of sports/sporting activities.

Candidates' responses to the questions

Q1a -j

The traditional multiple-choice questions at the beginning of the paper were answered well, with many candidates scoring at least 7/10. Question parts (d) to (g) presented the least amount of difficulty to candidates demonstrating a good knowledge of these aspects of the specification across the cohort. Question parts (h) to (j) however appeared to be the most testing, where candidates often confused the aorta as a vein rather than artery, mixed the percentages of oxygen and carbon dioxide in exhaled air with that of inhaled air and often gave fats as the aspect of a balanced diet that should be eaten to aid bone development.

Q2

This area of the specification is often tested, and generally candidates can adapt their knowledge to suit the particular emphasis of the question. The first part of the question was straight forward, looking for the answers social physical and mental. Despite the straightforward nature many candidates confused the physical and mental benefit stated. Part (b) required candidates to think of other reasons why people might join a sports club, answers were varied including teamwork, cooperation, challenge, stress relief and improving fitness, but unfortunately a significant number of candidates simply repeated the reasons that were given in part (a) and therefore did not gain the marks available. Candidates were not only awarded marks for giving an appropriate reason, but if this matched the category given in the table they were awarded a second mark, thus a candidates stating that a benefit would be to improve fitness as a physical reason would gain 2 marks.

Q3

Rather than simply ask for definitions of terms, as has been the custom previously, this question gave the candidates the definitions and asked them to demonstrate their understanding of the definitions by linking to performance. Part (a) required candidates to make the link between exercise and performance, and then fitness and performance. Initially they should have commented on exercise increasing fitness, which should result in an increased performance, and then moved on to justify why better fitness

would improve performance, for example through throwing further due to greater strength/power, or running faster, lasting longer and so on. Whilst some candidates were able to make these links many gave definitions of exercise or fitness or failed to note that the question asked them to explain how fitness and exercise affected performance, simply stating what the effect was.

Part (b) of the question looked at health and the positive and negative effects of activity on health. Many candidates had difficulty in correctly identifying a specific physical benefit, often giving vague answers such as helping you lose weight, or the heart becomes stronger rather than stating that possible there would be a reduction in chance of obesity or a reduction in the chance of suffering from coronary heart disease. Part (bii) however was well answered with the majority of candidates recognising that a possible negative effect on health could be injury

Whilst part (ci) did not require a definition of the term flexibility those candidates gaining the mark tended to be those that gave the definition. For the remaining parts of the question the candidates needed to state a component of health related exercise and apply its use to the footballer in the figure. Many candidates lost marks here because they gave examples of skill related fitness. Those that did give a component of health related exercise tended to be able to describe how it helped the footballer, although some did confuse cardiovascular endurance and muscular endurance.

- Q4 This question related to the components of skill related fitness. Four components were given to the candidates; they had to select the most appropriate for the performers shown in the figure, during that part of their performance. Many candidates did well on this question, using the figure to help with their answers. The biggest problem for candidates tended to be in expressing their ideas so that their justifications were not vague. For example, stating that coordination was important in hurdles so that the hurdler could get both legs over the hurdle, or that speed was important in basketball so that you could dodge other players, (whilst speed is obviously important dodging would normally be associated with agility). Only a few candidates failed to use the components of skill related fitness given in the question.
- Q5 Part (a) of this question was generally poorly answered, partly due to an apparent lack of ability of many candidates to express their ideas. For example, trying to explain the principle of specificity without using the word specific. Also, examples of the application of these principles within a PEP elicited few actual examples in terms of figures or activities, with most candidates giving a description very similar to their original answer given as 'explanation' of the principles. Candidates were clearly familiar with the FITT principle and generally were able to answer the applied part of the question in part (b), giving sensible increments to the values already given, for example, increasing training from once a week to twice and so on. Part (b) was clearly known by many candidates, with fewer identifying tedium as the final 'T' of F.I.T.T. As with previous years knowledge of training effects seems to be a good differential question. For part (c) some candidates identified that stroke volume increases, or that the heart gets stronger, but there appeared to be little reference to any of the other training effects.

Knowledge of the muscular system (part (d)) however was better, with many candidates mentioning increased strength and endurance.

- Q6 Most candidates correctly identified that obese was potentially the most harmful condition, and many candidates had a good attempt at explaining why, relating weight gain to lack of opportunity to burn off calories eaten.
- Q7 This question was well answered. The majority of candidates recognised that by obeying the rules you decreased chance of injury, and a significant number of candidates also linked rules with fair play. Some candidates only gained one mark as they referred to preventing injury to themselves, and their second response was reducing injury to others.
- Q8 Most candidates gained some marks for this question indicating a good level of knowledge across this area of the specification. Although the correct order of the phases of the warm up was not required, many candidates logically identified the phases in the order they would be completed; this is 'good practice', as future questions may demand this knowledge. Stretching was the most well known phase, and although jogging was often given this was not accepted as this is not considered a 'phase' of the warm up, but an example of an activity that could be carried out in one of the phases. Injury prevention was a popular answer in part (b) with some candidates correctly relating the increase in heart rate as important in terms of oxygen delivery. Many candidates were also aware of the role of the warm up in psychological preparation for activity.
- Q9 This question was well answered, with most candidates scoring 5/7. Problem areas were parts (d) with few candidates stating the actual temperature, and part (f) with a poor choice of performer, for example, footballer rather than the more obvious choice of performers who work in the natural environment, e.g. skier, climber.
- Q10 This question proved to be surprisingly difficult for a number of candidates. Some confused the atria with ventricles, or atria with arteries, whilst others confused oxygenated with deoxygenated blood flow. Most knew that arteries take blood away from the heart, but not all candidates could state how arteries differ from veins.
- Q11 Once again this question proved to be surprisingly difficult for some candidates. Common errors were in part (a - c) describing the effects of expiration rather than inspiration, in part (d) stating that the air is cleaned, which although correct is already stated in the question (filtered) and part (f) where a lung volume was identified it was often vital capacity rather than tidal volume.
- Q12 This question was well answered, with most candidates listing the relevant functions of the skeleton. Protection in most cases was linked to a correct and clear explanation as was movement, although blood production was less well known with many candidates simply turning the statement around in their answer to say that blood is produced, more detail was required in the explanation than this to gain the marks. Some candidates used body shape as a function rather than movement, which did not link with the final column of the table, but these candidates were in the minority.

- Q13 Many candidates correctly identified the different types of joints shown in the figure with fewer candidates this year naming the joints indicating a greater understanding of the terminology of the questions. Part (b) was also well answered with many candidates giving the knee as the example of a hinge joint. Not all candidates correctly identified the type of movement at joint C as flexion; the most common incorrect answer was extension. Most candidates used the layout of the answer spaces to correctly pair the movement possibilities in part (d), placing rotation at the end of the list on its own, rather than stating it as a paired movement with either flexion/extension or abduction/adduction
- Q14 (a) The vast majority of candidates did not know the meaning of the term muscle tone, most associated it with hypertrophy/training. In part (b) some candidates are confused voluntary with involuntary muscles thus lost marks here. Cardiac was the most well known of the muscle tissue types.
- Q15 Most candidates gave carbohydrates in part (ai) and correctly identified fats and proteins in parts (aii & b). Some candidates lost marks in part (c) as they gave two examples of the same type of injury, for example, pulled hamstring, pulled quadriceps, or injuries not likely to link with the 200m, for example, golfers elbow or dislocation. Some candidates simply referred to sprains and strains and were not credited with marks, as these answers were considered to be too vague in relation to the 200m runner. R.I.C.E. was well known. In part (e) candidates confused the role of the quadriceps and hamstrings, often placing them in the wrong order. In part (f) although candidates often knew the muscle fibre type they did not give a good reason for their answer, often giving vague answers, for example, fast twitch fibres help you run faster. Specific reference to the powerful nature of these fibre types was required. Candidates were aware that fast twitch fibres tire quickly for the final part of (f). Candidates should be advised when answering questions of this type not to abbreviate the names of the fibres. I.e. they should not state F.T.M.F. as answer to part (fi), but write the fibre type in full. In part (g) most candidates identified that interval training included a 'rest' period, and many identified or inferred that the workload was 'intense'. Very few candidates gained the third mark for mentioning that the rest period was to allow recovery to maintain the high intensity work rate. In part (h), where candidates knew the terms isometric and isotonic they tended to correctly identify isometric with the stationary position and isotonic with movement.
- Q16 Whilst some candidates clearly knew the meaning of the term aesthetic appreciation the majority did not, with many of the incorrect answers relating to 'looking good'. Many candidates did not attempt this part of the question. In part (b) some candidates once more had difficulty in distinguishing between health and skill related components of exercise/fitness. Marks were also lost where candidates selected inappropriate components in relation to the gymnast in the figure, for example, muscular endurance, power and reaction time. Where candidates had correctly identified balance in (b) they normally linked this to allowing the gymnast to maintain their position in part (c). The candidates did not link co-ordination as well as balance, although some did relate to the movement of the hands into position and then the legs into the splits. In part (e) candidates often made the question more difficult than

intended in that rather than simply naming the joint (as requested in the question) they attempted to name the type of joint, this would have proved particularly difficult as this type of joint is not on this specification. Candidates who did not misread the question still did not necessarily give the correct answer, with many candidates identifying the shoulder or elbow as the joint supporting the weight rather than the wrist. Failure to achieve this part of the question made it impossible to achieve the rest of part (d). Some candidates correctly identified the wrist as a short bone and its strength as the reason it is suited to supporting the body weight. In part (e) a pleasing number of candidates correctly identified the different functions of tendons and ligaments, although relatively few correctly identified the atlas and axis pivot joint. Most candidates identified friction as a relevant reason for the use of chalk in part (f) and gave varied correct answers to state how else the gymnast could protect themselves from injury including warm ups, use of crash mats and using the correct technique. The final part of the question asked about body types. Most candidates correctly identified an ectomorph body type for female gymnasts and gave a good explanation for their answer. Those candidates giving mesomorph as their answer were also credited provided they could justify their response in terms of strength/power for the moves in their routine.

Q17 Many candidates correctly identified the bones in the figure, with patella being the most well known. Part (bi) was well answered with good responses often linking to changes of intensity, but candidates had difficulty explaining the term cardiac output. There were some good answers to part (biii), those that were incorrect often related to blood, neglecting the role of oxygen, or were left blank. Part (c) was well answered, with the explanation of oxygen debt proving the most difficult. Part (di) was very well answered, candidates clearly understood this concept, but there was confusion over progression in (dii) with a variety of incorrect answers given. The more popular incorrect answers were overload; train regularly, specificity and continuous training. Reversibility was better known than progression but still not known by the majority of candidates, often being confused with the other principles of progression, specificity and overload. Candidate answers to part (e) were often vague in terms of the description and the area of fitness improved with a significant number of candidates failing to state an area of fitness such as strength, cardiovascular endurance. Explanations of continuous training and Fartlek training were clearest, but the explanation of circuit training often lacked reference to keywords such as 'stations', similarly weight training lacked reference to 'sets' or 'repetitions'

Summary

As with last year the paper required application of knowledge on the part of the candidates, who, in the main, as with last year, responded well to the challenge. Basic, factual questions were obviously a part of the paper but the extensions to the questions tended to ask for application to allow the candidate to demonstrate their understanding. Centres should be pleased with the way that they have prepared their candidates for this examination and the way in which the candidates responded overall.

In order to further help prepare candidates in future, centres could remind candidates of the follow points:

1. Where examples have been requested candidates should try to make these specific and obvious choices, rather than general.
2. Read the questions carefully, look for key words such as **explain**, **why** and **describe**, these types of questions are likely to require some application of the candidate's knowledge.
3. When revising for their examination candidates should try to apply their knowledge to sporting activity.

Sue Hartigan

Principal Examiner

Examination Paper 3827/ 01 (Short Course)

General Comments

Nearly 15, 000 candidates sat this paper this year which is a slight increase on the number of candidates sitting the paper last year. At the 'top end', candidates were obviously very well prepared, with some candidates scoring nearly maximum marks. In contrast to the full course paper, the format for this paper is entirely multiple choice, similar in style to the first 10 questions on the full course paper.

To achieve the higher grades candidates would be expected to apply their knowledge of all short course specification areas fully to a variety of sports/sporting activities. Statistical evidence from the paper clearly shows areas of the specification that are well known and those that are not. Areas of knowledge clearly understood by the vast majority of candidates included identification of some mental and social benefits of exercise (2,3,4); definitions of performance and fitness, although fitness was more well known of the two (5, 6); application of the components of fitness to performance, in this case a shot on goal in football, (7 - 10); and understanding of the application of skill related fitness to a hurdler (11 - 14). Interestingly the questions on application of knowledge of the skill related components of fitness appeared to be more straightforward for candidates than those for the components of health related exercise. Some areas of the principles of training were clearly understood as indicated by candidates' response for questions 16, 17 and 19 (Progression, Reversibility and Specificity). The majority of candidates answered questions 22, 23 and 26 on training methods correctly. The definition of obese was well known (30). Question 36 was well answered, although a significant number of candidates opted for middle distance running as being the most hazardous activity rather than archery. Question 37 was the easiest question on the paper for the candidates; with the vast majority correctly identifying that water was required to prevent dehydration. Questions 38 and 39 were also well answered.

Areas of difficulty for candidates were reflected in responses to the following questions, 1, 15, 18, 20, 24, 25, 27, 28, 29, 31, 32, 33, 34, 35 and 40. Of these, question 1 was surprisingly difficult, with an equal split of correct and incorrect answers for option A and option B, thus a significant number of students considered enjoyment to be a physical benefit of exercise. Questions 15 and 18 related to the principle of overload which a significant number of students confusing this with progression, being unable to distinguish between the examples given. Question 20 was also demanding for a significant number of candidates, who were unable to decide between the correct option 'aerobic work on the track' from one of the incorrect options 'anaerobic work on the track'. Question 21 also proved difficult for the same reasons but this time for the options related to pool training. Question 24 proved difficult for a significant number of candidates, who selected option C, Fartlek, rather than looking carefully at the question which indicated, (through reference to skill development), that option D, circuit training, was required. This made it surprising that a significant number of candidates failed to select the hockey player in question 25, opting for the cyclist instead. Questions 27 and 28 dealt with the effects of exercise on selected body systems. Traditionally, only the strongest candidates gain credit for these questions, and this year was no different. There was an even split of incorrect answers for question 29 (obese as potentially the most harmful). The questions on diet proved difficult for candidates (31-33) with question 33 proving to be the most demanding, with the majority of candidates opting for option D 'protein' rather than the correct option B 'minerals'. Body types still present difficulty to candidates. Ectomorph for the high jumper was marginally better known, but a significant number of candidates identified either an endomorph

or ectomorph body type for a sprinter. Surprisingly a significant number of candidates had difficulty with question 40, suggesting that R.I.C.E. should be given to the gymnast who has fractured their arm.

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

- Read the questions carefully; look for any obviously wrong answers. Work through the question groups and match the most obvious first.
- Questions will require some application of the candidate's knowledge. Therefore, when revising for their examination, candidates should try to apply their knowledge to sporting activity.

Sue Hartigan
Principal Examiner

GCSE PE Moderators' Report

1827 (Full Course) and 3827 (Short Course)

Practical Assessment (Components 2A, 2B & 2C)

Performance of Candidates

On the whole comments on the performance of the candidates was much the same as last year with most students well prepared by their teachers and up for the examination. Some comments suggested, "there was a high level of commitment from staff and candidates," there were comparatively few comments to the contrary.

Some very positive comments about student identification regarding the wearing of numbered bibs as opposed to small card numbers and safety pins. This pleased the moderators a lot.

Some schools had a mock practical day (and some also had a mock Analysis of Performance) and reports from moderators suggested that this had been very helpful.

On the whole the standard was good and still slightly improving at both the top and the bottom end.

Difficulties Relating to Assessment

Practical Activities

The most common comment from moderators regarding the practical activities concerned the use (or none use) of differentiated practices. Candidates at the top end need to be extended and where they were they performed to their best, enabling them to maximise their potential.

In some cases moderators were concerned with group sizes on the moderation day, and suggested that some schools had too many candidates to moderate at one time. Moderators were also concerned that in some cases where there were a lot of candidates for an activity that a suitable range of candidates were not shown in the activity.

Mostly schools had two members of staff, one to run the session and the other to mark the candidates. This is good practice.

Moderators felt that schools that show more than four activities on the day often do not do justice to candidates who get very little rest between activities. Only four activities need to be shown on the day.

Staff should note that this is a moderation not a lesson and teaching and coaching should not be taking place during this time.

Moderators reported that in some schools the staff were not using the assessment criteria when grading their candidates on the moderation day.

Moderators need to be informed of the programme in sufficient time for them to agree to it, which will help to make sure that the type of problems illustrated above do not occur again.

Personal Exercise Programmes

Some comments related to the unavailability of the Personal Exercise Programmes (so candidates are marked down in the Analysis of Performance and in fitness training if they are offering this activity) but on the other side many more comments were made regarding the excellent quality of many of the programmes, which candidates had produced. Once again these would prove to be an excellent source of revision material for the paper 01.

Some students presented their PEP in their own style while others used prepared templates to help them through the process. Both are acceptable.

Exercise Activities

Most schools that show this activity perform it very well demonstrating taking candidates Resting Heart Rate, Working Heart Rate and Recovery Rates and performing the activity in a very organised way, but some do not. Circuit Training, for example, requires the candidates to perform at six exercise stations (and one would expect them to perform three circuits) but it is reported that some schools perform at ten stations and do only one circuit. Not the best way to show it.

Students should also be prepared to answer questions on their Personal Exercise Programme and will be marked down if they do not produce one. The higher-grade students should also be given the opportunity to lead the warm up and cool down, demonstrating their leadership skills, but it is reported that the teacher sometimes does this.

Analysis of Performance

By far the majority of centres are clear that they have to run this part of the assessment to justify the coursework grades, and that the Moderator may ask questions if they see fit. However a few schools apparently expected the Moderator to take responsibility for this, which is not the case. It should also be noted that students need to perform the Analysis of Performance in one of their chosen four practical activities not in a separate activity, which they are not offering for practical assessment.

The Analysis of Performance is the area where the contribution of the staff is most important in showing the candidates at their correct level to justify their coursework grade. There is no doubt that some staff do this much better than others and it was

reported by one Assistant Principle Moderator that one school had a teacher who did this particularly well and did all the Analysis of Performance, even though he was not marking the practical activity.

Another criticism that comes up again and again regarding the Analysis of Performance is that it takes too long and too many questions are asked on the rules, and students are not given an opportunity to lead an activity.

Other schools had pre-prepared questions and used the same questions for every candidate regardless of their ability. Questions should be demanding for candidates at the top end to show their ability and allow them to justify their coursework grade.

Time should be allowed for this to take place on the basis of ten minutes per candidate. If all the candidates are offering the Analysis of Performance in the same practical activity, or just two activities, then time must be added to these sessions.

Video Moderation

This was an added complication and many schools that were new to this found it very difficult. As a result the moderators also found it difficult, with the problem of identification of the candidates and poor quality video.

The number of 20 candidates may be reviewed again this year and perhaps fewer schools will be required to do this exercise next year.

To overcome this problem some schools joined with another centre for the Moderation. This is quite acceptable but must be done in collaboration with the Moderator and each school must still mark their own candidates on the moderation day.

Administration

There were a lot of problems regarding administration though the use of email has helped in many cases and the suggestion that all moderators should be emailed the PE34 and PE34 AP forms is a good one. Moderators suggest that schools that use electronic forms tend to have less administration problems. It is also suggested that many more schools are using the Edexcel website.

Schools want their forms earlier especially the OPTEMS. This is understood and the earlier the moderators are allocated the earlier they can make contact with their schools.

Many schools appear not to read the ICE document and they complete their forms incorrectly. Many Moderators reported that schools had not completed the PE34 forms in the same order as the OPTEMS this is most important for the Moderators to help them to cross check, especially in large centres.

Some Moderators mentioned that a number of schools fail to get the post moderation paperwork to the Moderator within ten days of the moderation day. If all the paperwork from the moderators' allocated schools arrives on the final day it becomes an impossible task for them to check each individual school's paperwork, and to get their own paperwork done in the time they have available. Please comply with this as it does help the moderation process to run more smoothly.

Of course many centres run their Moderation days to perfection and the comments noted above are meant to help those centres that have had difficulties, to overcome these problems in the future.

Tony Scott
Chief Examiner

Paper 2 Components	Weighting
2A – Practical assessment during the course	25%
2B – Analysis of performance	10%
2C – Final practical assessment	25%

GRADE BOUNDARIES - SUMMER 2005

GCSE Physical Education – Full Course (1827)											
Grade	A*	A	B	C	D	E	F	G			
Max Mark = 200	170	154	138	123	100	78	56	34			
Cumulative %	3.9	16.8	37.9	59.7	84.4	95.3	98.8	99.8			
Candidates											
Component	Max Mark	Mean	SD	A		C		F		Weighting	% Contribution
				Mark	%	Mark	%	Mark	%		
01	150	76.6	26.4	118	4.1	98	25.2	37	92.1	0.533	40
2A	40	29.4	5.2	34	22.6	24	87.4	12	99.8	1.250	25
2B	20	14.2	3.7	17	29.1	13	68.3	6	98.4	1.000	10
2C	40	29.4	5.8	34	25.0	24	86.2	12	99.0	1.250	25

GCSE Physical Education – Short Course (3827)											
Grade	A*	A	B	C	D	E	F	G			
Max Mark = 100	90	82	74	66	55	44	34	24			
Cumulative %	2.1	9.6	25.7	49.4	78.0	91.5	96.5	98.4			
Candidates											
Component	Max Mark	Mean	SD	A		C		F		Weighting	% Contribution
				Mark	%	Mark	%	Mark	%		
01	40	28.4	6.2	36	10.5	30	48.5	14	97.8	1.00	40
2A	20	12.6	3.0	17	9.6	13	51.3	7	97.3	1.25	25
2B	20	11.5	3.8	17	9.7	13	39.0	6	93.6	0.50	10
2C	20	12.5	3.5	17	10.8	13	53.1	7	95.0	1.25	25

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

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