Centre No.						Paper Reference							Surname	Initial(s)
Candidate No.						1	8	2	7	/	0	1	Signature	

Paper Reference(s)

1827/01

Edexcel GCSE

Physical Education

Paper 1

Wednesday 25 May 2005 – Afternoon

Time: 1 hour 45 minutes

Examiner's use only

Team Leader's use only

Materials required for examination
Nil

Items included with question papers
Nil

Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initial(s) and signature.
Answer ALL questions in the space provided in this book.
For Section ONE: Do not use pencil. Use blue or black ink. For each question, choose an answer, A, B, C or D and put a cross in the box (☒). Mark only one answer for each question. If you change your mind about an answer, put a line through the box (~~☒~~) and then mark your new answer with a cross (☒).
Write your answers to Sections TWO and THREE in the spaces provided.

Information for Candidates

The marks for individual questions and the parts of questions are shown in round brackets: e.g. **(2)**.
There are 17 questions in this question paper. The total mark for this paper is 150.
There are 28 pages in this question paper. Any blank pages are indicated.

Advice to Candidates

You are reminded of the importance of clear English and orderly presentation in your answers.

Question Number	Leave Blank
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SECTION ONE

Answer ALL questions.
For each question, choose an answer A, B, C or D and put a cross in the box.
Mark only one answer for each question. If you change your mind about an answer, put a line through the box and then mark your new answer with a cross.

eg: Mark the box like this:

- ☒ **A**
- ☒ **B**
- ☒ **C** *This shows your answer*
- ☒ **D**

If you change your mind, mark the boxes like this:

- ☒ **A** *This shows your final answer*
- ☐ **B**
- ~~☒~~ **C** *First answer*
- ☒ **D**

1. (a) Which of the following statements describes a physical benefit of exercise?

- ☒ **A** Meeting new people
- ☒ **B** Gaining an aesthetic appreciation of movement
- ☒ **C** Feeling better about body shape
- ☒ **D** Improving body shape

(1)

(b) Fitness is:

- ☒ **A** A capability of the heart, blood vessels, lungs and muscles to function at optimal efficiency
- ☒ **B** A form of physical activity done primarily to improve one's health and physical fitness
- ☒ **C** The ability to meet the demands of the environment
- ☒ **D** The range of movement possible at a joint

(1)

(c) Co-ordination is:

- ☒ **A** How well a task is completed
- ☒ **B** The ability to use two or more body parts together
- ☒ **C** The ability to change position quickly and with control
- ☒ **D** Working together as a team

(1)

Leave blank

(d) Which of the following activities would be **most** suitable to include in a training programme designed to improve performance for a **long distance runner**?

☒ **A** Aerobic work on a track

☒ **B** Aerobic work on a bike

☒ **C** Aerobic work in a swimming pool

☒ **D** Anaerobic work using very heavy weights

(1)

(e) Which of the following methods of training would be **most** suitable to include in a training programme designed to improve performance for a **long distance runner**?

☒ **A** Weight training

☒ **B** Continuous training

☒ **C** Circuit training

☒ **D** Isotonic training

(1)

(f) Which of the following activities would present an unsupervised beginner with the **greatest** risk?

☒ **A** Dance

☒ **B** Archery

☒ **C** Badminton

☒ **D** Middle distance running

(1)

(g) The following statements all relate to sports situations resulting in injury. Which of the statements would result in the gymnast being placed in the **recovery position**?

☒ **A** The gymnast falls from the rings and fractures his arm

☒ **B** The gymnast lands awkwardly and sprains his ankle

☒ **C** The gymnast slips as he reaches the vault, hits his head and becomes unconscious

☒ **D** The gymnast completes a long training session on the pommel horse resulting in blisters on his hands

(1)

Leave blank

(h) The aorta is a blood vessel in the circulatory system. Which of the following statements about the aorta is correct?

☒ **A** The aorta carries oxygenated blood to the lungs

☒ **B** The aorta carries deoxygenated blood to the lungs

☒ **C** The aorta is a vein

☒ **D** The aorta is an artery

(1)

(i) The following statements all relate to the relative composition of air. Which of the statements is referring to the *typical* composition of oxygen and carbon dioxide in **exhaled** air?

☒ **A** oxygen 21%, carbon dioxide 0.04%

☒ **B** oxygen 16%, carbon dioxide 0.04%

☒ **C** oxygen 16%, carbon dioxide 4%

☒ **D** oxygen 21%, carbon dioxide 4%

(1)

(j) Diet is an important factor in maintaining bone strength throughout life. Which of the following should be included in a balanced diet to aid bone development?

☒ **A** Minerals

☒ **B** Water

☒ **C** Fats

☒ **D** Fibre

(1)

TOTAL FOR SECTION ONE: 10 MARKS

Leave blank

SECTION TWO

Answer ALL questions

2. Year 11 students were asked why they took GCSE PE. Some of their answers are listed in the table below.

(a) Complete the table to categorise each of their answers, stating whether the answers given are a mental, physical or social benefit of exercise.

REASONS FOR TAKING GCSE PE	CATEGORY MENTAL, PHYSICAL OR SOCIAL BENEFIT?
I took it because lots of my friends opted for it	
I knew I had to complete a Personal Exercise Programme (PEP) and hoped this would help me to lose weight	
I enjoy physical education lessons	

(3)

(b) Complete the table below by stating **THREE** reasons other than those given in 2(a) why people might join a *sports club*. Make sure your reason matches the category given in the table.

	OTHER REASONS FOR JOINING A SPORTS CLUB	CATEGORY MENTAL, PHYSICAL OR SOCIAL BENEFIT?
1		SOCIAL
2		MENTAL
3		PHYSICAL

(6)

Q2

(Total 9 marks)

Leave blank

3. Performance is defined as 'how well a task is completed'. Explain how exercise and fitness can affect performance.

(a) (i) **Exercise**

.....

.....

(1)

(ii) **Fitness**

.....

.....

(1)

(b) Health is defined as a 'state of complete mental, physical and social well-being, and not merely the absence of disease or infirmity'

(i) How might physical activity have a positive effect on physical health?

.....

.....

(1)

(ii) How might physical activity have a negative effect on physical health?

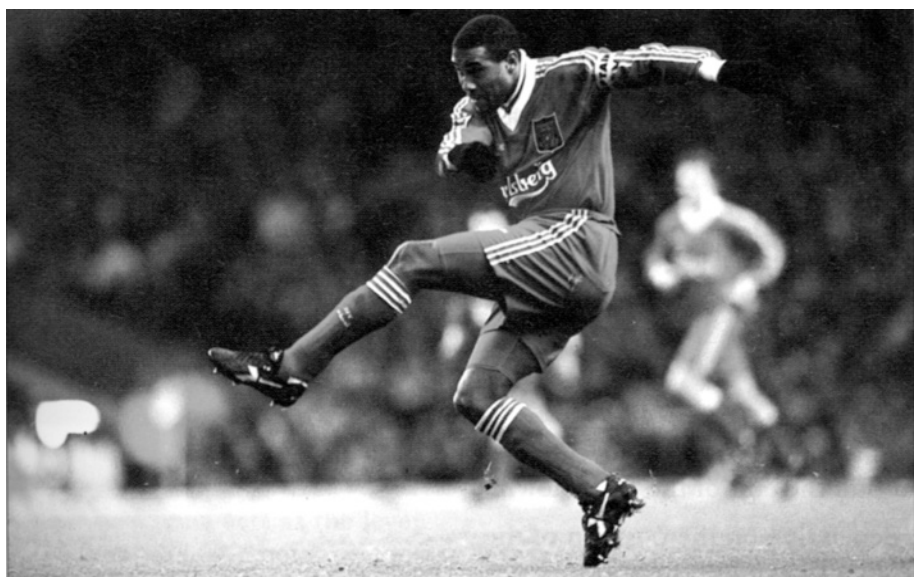
.....

.....

(1)

Leave blank

Figure 1 shows a footballer completing his shot at goal.



(Source: Allsport Ltd)

Figure 1

(c) The flexibility of the footballer helps him to achieve the required position to strike the ball.

(i) Explain the term flexibility

.....

.....

(1)

(ii) Name **ONE** other component of health related exercise that will be important to the footballer's success.

Component.....

(1)

(iii) Explain how the component of health related exercise you stated will help the footballer's performance.

How component helps performance.....

.....

.....

(1)

Q3

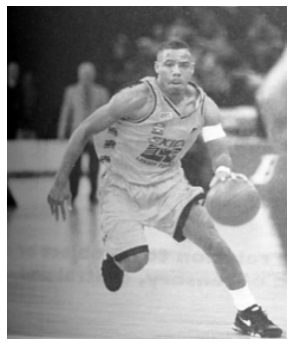
(Total 7 marks)

Leave blank

4. **Figure 2** shows performers participating in three different activities, **A**, **B** and **C**.

A

B



C

(Source: Sporting Pictures (UK) Ltd)

Figure 2

The terms in the box are all components of skill related fitness.

Agility	Reaction time	Speed	Co-ordination

Complete the table below.

(a) From the terms above, select the **most** important component of skill related fitness for the performers shown in **A**, **B** and **C** in **Figure 2**. You **must** use a different component for each type of performer.

(b) Explain why each of the components you have selected is important for the performance.

PERFORMER	(a) COMPONENT OF SKILL RELATED FITNESS	(b) HOW COMPONENT IS IMPORTANT FOR PERFORMANCE
A: HURDLER		
B: SWIMMER		
C: BASKETBALL PLAYER		

Q4

(Total 6 marks)

Leave blank

5. Ali plays badminton for the school team but is frightened of losing his place due to his lack of fitness. He has decided to plan a Personal Exercise Programme (PEP) to help him improve his fitness for badminton.

(a) **Overload** and **specificity** are two important principles of training. Complete the table below to give an explanation of these two principles **and** specific examples of how Ali might apply them in his PEP.

PRINCIPLE OF TRAINING	EXPLANATION OF PRINCIPLE	APPLICATION OF PRINCIPLE WITHIN ALI'S PEP
OVERLOAD		
SPECIFICITY		

(4)

(b) **FITT** is another principle of training.

(i) What do the letters FITT stand for?

F .....

I .....

T .....

T .....

(1)

(ii) How could the FITT principle be used to create **overload** in a training programme?

.....

.....

.....

(1)

Leave blank

(c) State **TWO** long term benefits you would expect Ali's training to have on his **cardiovascular** system.

1. .....

.....

(1)

2. .....

.....

(1)

(d) State **TWO** long term benefits you would expect Ali's training to have on his **muscular** system.

1. .....

.....

(1)

2. .....

.....

(1)

(Total 10 marks)

Q5

6. (a) Obese, overweight and overfat are all terms relating to body composition. Which of these three conditions is potentially the most harmful?

.....

(1)

(b) Explain why an injured athlete's weight will increase if he maintains the same diet during injury as he did while training.

.....

.....

(1)

(Total 2 marks)

Q6

Leave blank

7. State **TWO** reasons why it is important to obey the laws or rules of any practical activity.

1. .....

.....

(1)

2. .....

.....

(1)

Q7

(Total 2 marks)

8. A warm up is a very important part of preparation before competition.

(a) State **THREE** phases of a warm up.

1. .....

(1)

2. .....

(1)

3. .....

(1)

(b) State **THREE** reasons why a warm up is thought to be good preparation before a competition.

1. .....

.....

(1)

2. .....

.....

(1)

3. .....

.....

(1)

Q8

(Total 6 marks)

Leave blank

9. Dehydration and hypothermia can both occur during practical activity. Complete the following:

(a) Dehydration is due to .....

.....

(1)

(b) What type of athlete is most likely to become dehydrated?

.....

.....

(1)

(c) Dehydration is treated by giving the athlete .....

.....

(1)

(d) Hypothermia is .....

.....

(1)

(e) Hypothermia is due to prolonged exposure to .....

(1)

(f) What type of sports performer is most likely to suffer from hypothermia?

.....

.....

(1)

(g) If a sports performer is suffering from hypothermia it is important to stop them from losing.....

(1)

Q9

(Total 7 marks)

Leave blank

10. **Figure 3** is a diagram of the heart.

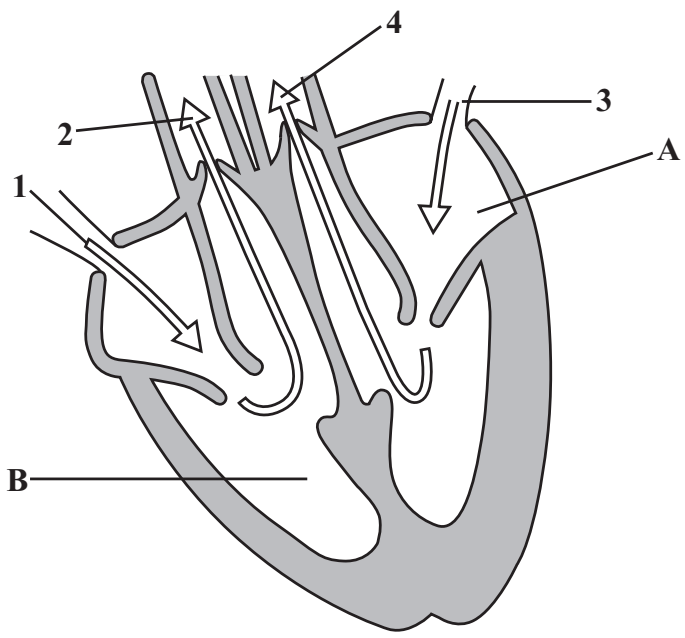


Figure 3

(a) Name the parts labelled **A** and **B**.

A .....

(1)

B.....

(1)

(b) Numbered arrows have been added to the diagram to indicate the flow of blood through the heart.

(i) Which arrows indicate the flow of deoxygenated blood?

.....and .....

(2)

(ii) What type of blood vessel carries blood away from the heart?

.....

(1)

(iii) State **ONE** way in which this type of vessel will differ from the type of vessel that returns blood to the heart.

.....

.....

(1)

(Total 6 marks)

Q10

Leave blank

11. The respiratory system plays an important part in aiding an athlete's performance. Complete the following statements about the lungs and breathing:

(a) During inspiration the intercostal muscles contract to ..... the ribs.
(1)

(b) The diaphragm contracts, moving it ..... .
(1)

(c) Both of these movements ..... the volume of the lungs.
(1)

(d) The air flows in through the nose, where it is filtered, ... and moistened.
(1)

(e) The air continues to flow through the respiratory system until it reaches the alveoli.

..... occurs at the alveoli.
(1)

(f) The amount of air breathed in or out of the lungs in one breath is known as

.....
(1)

(Total 6 marks)

Q11

Leave blank

12. The skeleton plays an important role in physical activity. **Figure 4** shows a netball player reaching for the ball.

(Source: Hodder & Stoughton)

Figure 4

Complete the table below to:

(a) state the missing functions of the skeleton

(b) give an explanation of the functions

(c) explain how the missing function relates to participation in physical activity

(a) **FUNCTION**	**(b)** **EXPLANATION**	**(c)** **HOW THIS FUNCTION AIDS PERFORMANCE**
		By reducing chances of injury players can continue to play
		Players need to be able to move in order to 'play the game'
Blood production		

Q12

(Total 6 marks)

Leave blank

13. Figure 5 is a picture of a triple jumper.

(Source: Allsport Ltd)

Figure 5

(a) Name the **type** of synovial joint at **A**, **B** and **C**.

(i) **A** (shoulder) .....
(1)

(ii) **B** (elbow) .....
(1)

(iii) **C** (knee) .....
(1)

(b) Name one of the joints, **A**, **B** or **C**, which only allows flexion and extension.

.....
(1)

(c) Name the type of movement currently shown at joint **C** (knee).

.....
(1)

Leave blank

(d) What types of movement are possible at joint **D** (hip)?

..... and .....
(1)

..... and .....
(1)

.....
(1)

Q13

(Total 8 marks)

14. (a) Explain the term **muscle tone**.

.....

.....
(1)

(b) There are three types of muscle tissue. Complete each of the statements by naming the muscle tissue type being described.

(i) ..... muscle tissue is only found in the heart.
(1)

(ii) ..... muscle tissue can be found in the walls of blood vessels.
(1)

(iii) The bicep is an example of ..... muscle tissue.
(1)

(iv) During exercise we use ..... muscle tissue to help us move.
(1)

Q14

(Total 5 marks)

TOTAL FOR SECTION TWO: 80 MARKS

Leave blank

SECTION THREE

Answer ALL questions

15. Marvin is a 200m sprinter. He understands the importance of maintaining a balanced diet to improve performance and the need for an appropriate training programme.

(a) (i) What type of food group **should** he eat to provide energy?

.....

(1)

(ii) What other food group can provide energy?

.....

(1)

(b) Sprinters can suffer injuries. A balanced diet can help recovery after injury.

What food group aids growth and repair of tissues?

.....

(1)

(c) State **TWO** potential soft tissue injuries associated with the 200m.

1. .....

(1)

2. .....

(1)

(d) How should these injuries be treated?

.....

(1)

Leave blank

(e) When sprinting, Marvin's muscles work **antagonistically**. Complete the following statements to explain what is happening when he is sprinting.

(i) When muscles work antagonistically, one muscle .....

and the other muscle ..... .

(2)

(ii) As the muscles work they change the shape of the leg at the knee. When the leg straightens it is called ..... and when it bends it is called

..... .

(2)

(iii) The muscles responsible for straightening the leg at the knee are the

..... . The ..... bend the leg at the knee.

(2)

(f) Marvin's muscles will be made up of different types of muscle fibre.

(i) What muscle fibre type would be most suited to Marvin's event?

.....

(1)

(ii) Give a reason for your answer.

.....

.....

(1)

(iii) Why would these fibre types be unsuitable for long distance events?

.....

.....

(1)

Leave blank

(g) In order to improve his performance in his event Marvin needs to increase his speed. His coach has suggested an interval training programme. Describe what is meant by **interval training**.

.....

.....

.....

.....

(3)

(h) What type of muscle contraction is taking place:

(i) Whilst Marvin is stationary in the sprint start position?

.....

(1)

(ii) As Marvin moves forward once the race has started?

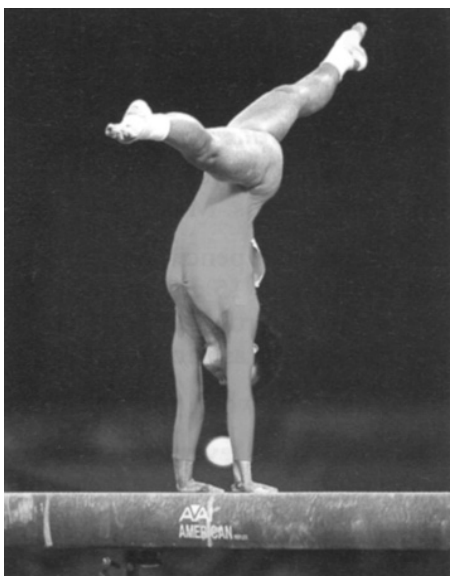
.....

(1)

(Total 20 marks)

Q15

16. Fiona is offering gymnastics as one of her practical activities for assessment. Her PE teacher suggested she watched a gymnastic competition at a local gym club to develop her understanding of the sport. **Figure 6** shows one of the gymnasts in a held position.



(Source: Colorsport)

Figure 6

Leave blank

(a) Gymnastics is said to stimulate **aesthetic appreciation**. What does this mean?

.....

.....

(1)

(b) Complete the table to identify **TWO health related exercise** and **TWO skill related fitness** components that are important to the gymnast whilst performing the part of her routine shown in **Figure 6**.

	COMPONENT 1	**COMPONENT 2**
HEALTH RELATED EXERCISE		
SKILL RELATED FITNESS		

(4)

(c) Explain how the **skill related fitness** components you identified are being used in the photograph of the gymnast, in **Figure 6**.

1. .....

.....

(1)

2. .....

.....

(1)

(d) (i) The gymnast in **Figure 6** is supporting her body weight whilst upside down.

What joint is she using to support her weight?

.....

(1)

(1)

(ii) What **type** of bones make up this joint, **and** why are they suited to supporting body weight?

Type of bone: .....

(1)

Why are they suited to supporting body weight? .....

.....

(1)

Leave blank

(e) Complete the following statements to describe the gymnast's movements, in **Figure 6**, in her routine.

The gymnast relaxes the …… muscle in the upper arm to allow the arm to ..... The head pivots about the ..... and ..... joint. One leg flexes at the ……, whilst the other extends. The body is able to move through the use of ..... which join bone to bone and ..... which join bone to muscle.

(6)

(f) The gymnast in **Figure 6** is wearing tape around her feet and has chalk on her hands.

(i) How might these protect her from injury?

.....

(1)

(ii) How else might the gymnast try to protect herself from injury?

.....

(1)

(g) (i) What body type would you expect a successful female gymnast to have?

.....

(1)

(ii) Explain your answer.

.....

.....

(1)

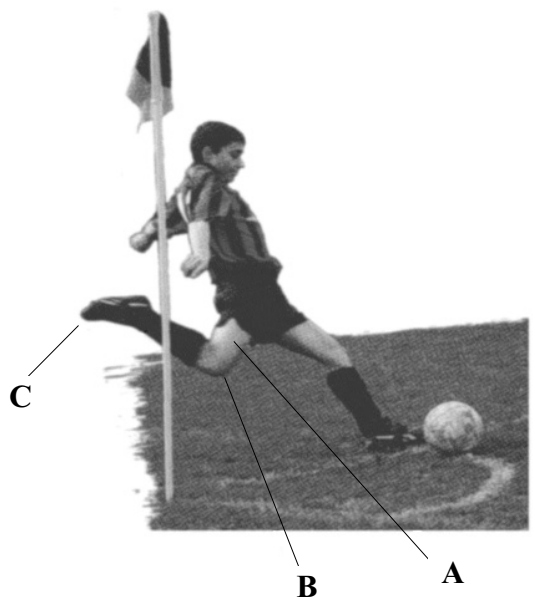
Q16

(Total 20 marks)

Leave blank

17. Ros, Emma, Belinda and Will are all GCSE PE students. They all play football and want to improve their analysis of performance and practical performance before their final assessment. They asked each other questions about their performance as well as devising their own Personal Exercise Programme (PEP).

(a) **Figure 7** shows a footballer about to take a corner kick.



(Source: Feltham Press Ltd)

Figure 7

Name the bones involved in the kicking action, labelled **A**, **B** and **C** in **Figure 7**.

(i) **A** .....

(1)

(ii) **B**.....

(1)

(iii) **C** .....

(1)

Leave blank

(b) During a game, players will work at varying intensities. Sometimes they will be walking or jogging, at other times they will need to sprint.

(i) What happens to the players' heart rates as they change workload?

.....

(1)

(ii) This change in activity would have a similar effect on **cardiac output**.

What is cardiac output?

.....

.....

(1)

(iii) Why is it important to a performer that cardiac output changes when exercising at varying intensities?

.....

(1)

(c) (i) During a match a player is likely to build up an **oxygen debt**.

What is an oxygen debt?

.....

(1)

(ii) If a player has built up an oxygen debt will she have been working aerobically or anaerobically?

.....

(1)

(iii) What by-product is associated with an oxygen debt?

.....

(1)

(iv) State **TWO** ways in which the performer could help remove this bi-product.

1. .....

(1)

2. .....

(1)

Leave blank

(d) Ros, Emma, Belinda and Will are all developing their **own** Personal Exercise Programme (PEP).

(i) As they all need to improve fitness for football, what is the reason for not using the same PEP?

.....

(1)

(ii) What training principle should they apply on a regular basis to ensure that they improve their fitness, but without getting injured?

.....

(1)

(iii) Belinda sustained an injury in a match and could not train for 6 weeks. What principle of training will have affected her fitness levels during this time?

.....

(1)

Question 17 continues overleaf.

Leave blank

(e) Each of the players decided to base their PEP on a different method of training. Ros used **continuous training**, Emma used **weight training**, Belinda used **circuit training** and Will used **fartlek training**.

Choose **THREE** of these training methods and complete the table below. Write a brief statement to explain each type of training **and** the area of fitness each player is trying to improve. You **MUST** name the method of training you have selected.

	METHOD OF TRAINING	**BRIEF EXPLANATION OF TRAINING METHOD**	**AREA OF FITNESS TO BE IMPROVED THROUGH TRAINING METHOD**
(i)			
(ii)			
(iii)			

(6)

(Total 20 marks)

Q17

TOTAL FOR SECTION THREE: 60 MARKS

TOTAL FOR PAPER: 150 MARKS

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