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

Friday 16 May 2008 – Morning

Time: 1 hour 45 minutes

Examiner's use only

Team Leader's use only

Question Number	Leave Blank
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Total	

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, initials and signature.
Check that you have the correct question paper. Answer ALL the questions.
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.

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SECTION ONE

Answer ALL the 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) Health is:

☒ **A** the ability to meet the demands of the environment

☒ **B** a state of mental well being and not merely the absence of disease and infirmity

☒ **C** the absence of disease

☒ **D** a state of complete mental, physical and social well being and not merely the absence of disease and infirmity.

(1)

(b) An increase in breathing rate is an example of:

☒ **A** a long term benefit of exercise

☒ **B** a poor level of fitness

☒ **C** an immediate effect of exercise

☒ **D** an effect of regular training.

(1)

(c) Which of the following gives a balanced diet to maintain body requirements when undertaking an exercise programme?

☒ **A** Carbohydrates, fibre, vitamins, minerals, water, protein.

☒ **B** Water, carbohydrates, protein.

☒ **C** Fats, carbohydrates, fibre, vitamins, minerals, water, protein.

☒ **D** Carbohydrates, proteins, water, vitamins, minerals.

(1)

Leave blank

(d) Which of the following statements correctly identifies the effects of smoking on sports performers?

☒ **A** Carbon dioxide in cigarette smoke reduces oxygen available to the muscles.

☒ **B** Haemoglobin prefers carbon monoxide so more oxygen is carried out of the lungs.

☒ **C** Cardiovascular endurance is not affected by smoking, but speed is, so the sprinter cannot run as fast.

☒ **D** Recovery in endurance athletes is slower as a reduced amount of oxygen gets to the muscles due to carbon monoxide in cigarette smoke.

(1)

(e) Which of the following is used to balance competition?

☒ **A** Same body type.

☒ **B** Same sex.

☒ **C** Same task.

☒ **D** Same day.

(1)

(f) Figure 1 shows an image of a twisted ankle.

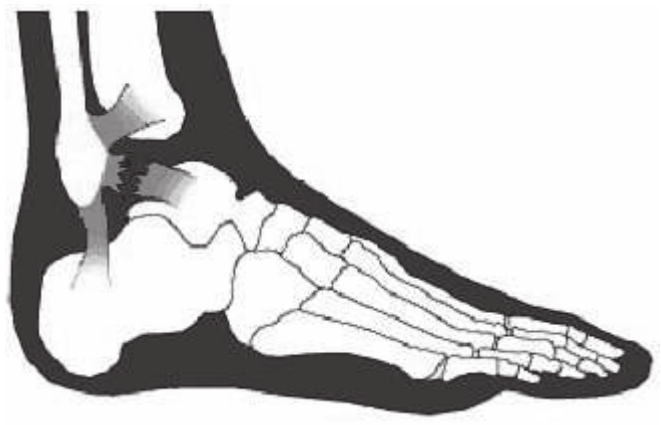

Figure 1

What type of injury is a twisted ankle?

☒ **A** Fracture.

☒ **B** Deep bruising.

☒ **C** Strain.

☒ **D** Sprain.

(1)

Leave blank

(g) Which of the following sports injuries would be treated using RICE?

☒ **A** Fracture.

☒ **B** Concussion.

☒ **C** Sprain.

☒ **D** Hypothermia.

(1)

(h) Which of the following is the correct definition of cardiac output?

☒ **A** The number of times the heart beats per minute.

☒ **B** The amount of blood pumped around the body during exercise.

☒ **C** The amount of blood pumped out of the heart per minute.

☒ **D** The amount of blood pumped out of the heart per beat.

(1)

(i) Which of the following statements is correct?

☒ **A** Carbon dioxide is produced as a result of aerobic exercise.

☒ **B** Carbon dioxide is not produced when we work aerobically.

☒ **C** Oxygen is not needed during aerobic work.

☒ **D** The more physical work we do the less oxygen we need.

(1)

(j) Which of the following is the correct term for the process of bone development?

☒ **A** Ossification.

☒ **B** Epiphysis.

☒ **C** Cartilaginous.

☒ **D** Periosteum.

(1)

Q1

(Total 10 marks)

TOTAL FOR SECTION ONE: 10 MARKS

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Turn over for Section Two

Leave blank

SECTION TWO

Answer ALL the questions. Write your answers in the spaces provided.

2. (a) The numbered statements in the box below are all examples of physical and/or mental benefits of exercise.

(i) Put a cross in the box next to a statement that provides a mental **and/or** physical benefit of exercise.

	A mental **and/or** physical benefit of exercise
1. I enjoy the competition	☒
2. It can lead to weight loss	☒
3. It can improve fitness	☒
4. It makes me feel less tense	☒
5. It gives me greater muscle definition	☒
6. It gives me something to do	☒
7. It can improve my health	☒

(1)

(ii) Explain how this mental and physical benefit is achieved.

Physical benefit .....

.....

Mental benefit .....

.....

(2)

(b) (i) Other than physical and mental, name the third type of benefit that can be gained from participation in physical activity.

.....

(1)

(ii) Give an example of this type of benefit.

.....

.....

(1)

Leave blank

(c) Membership of a sporting club is said to stimulate co-operation and competition. Explain how being a member of the local cricket club gives Khriston the opportunity to be:

(i) Co-operative; .....

.....

(1)

(ii) Competitive. .....

.....

(1)

Q2

(Total 7 marks)

3. Muscular strength and muscular endurance are two components of health-related exercise.

(a) (i) Explain the term **muscular strength**.

.....

.....

(1)

Complete the table below by:

(ii) naming an activity where muscular strength would be beneficial to a performer;

(iii) giving an example of how a sports performer in this activity would use muscular strength to their advantage.

(ii) Activity requiring muscular strength	(iii) Example of the use of muscular strength in this activity

(2)

Leave blank

(b) Long distance runners need high levels of muscular endurance for their event.

(i) Explain the term **muscular endurance**.

.....

.....

(1)

Complete the table below by:

(ii) naming another component of health-related exercise that would be helpful to a long distance runner;

(iii) explaining how this component aids the performance of the runner.

(ii) Component of health-related exercise beneficial to a long distance runner	(iii) Explanation of how this component aids the performance of the runner

(2)

Q3

(Total 6 marks)

Leave blank

4. The swimmer shown in Figure 2 relies on skill-related components of fitness in order to perform well. Some components of skill-related fitness are given in the box below.

Co-ordination Reaction time Agility

Figure 2

(a) (i) Select **two** components of skill-related fitness from the box above and complete the table by explaining how a swimmer would use these components in his/her performance.

Component of skill-related fitness		How component of skill-related fitness is used by a swimmer
1.		
2.		

(2)

(ii) Select the component of skill-related fitness from the box above that is **least** relevant to a sprint swimmer who swims one length of the pool. Explain why you have selected this component.

Component .....

Explanation .....

.....

(2)

Leave blank

(b) Power and speed are two other components of skill-related fitness.

(i) Explain the difference between power and speed.

.....

.....

.....

.....

(2)

(ii) Give a specific example when power is used during a sporting activity.

.....

.....

(1)

Q4

(Total 7 marks)

5. In order to improve aspects of her fitness Anneka is designing a personal exercise programme (PEP). She wants to improve her muscular endurance to help in her event.

(a) Overload is an important principle of training.

(i) Explain the training principle of overload.

.....

.....

.....

(1)

(ii) How could you tell from Anneka's PEP if she was applying the principle of overload?

.....

.....

.....

.....

(1)

Leave blank

(b) Complete the table below by:

(i) naming **four** of the principles of training Anneka would apply in her PEP to improve her muscular endurance;

(ii) giving an explanation of each principle.

You may NOT use overload or the FITT principle in your answers.

(i)	Principle of Training	(ii)	Explanation of Principle
1.			
2.			
3.			
4.			

(8)

(Total 10 marks)

Q5

Leave blank

6. (i) Which training method is being described in the box below?

I include five short sprints every 3 or 4 minutes over a 30-minute run, and include sprinting up hills. It is important that I vary my pace throughout the run, allowing time for recovery during the run as well as afterwards.

.....

(1)

(ii) The athlete works anaerobically for some of the training session. Look at the description in the box above and state when the athlete will be working anaerobically.

.....

.....

(1)

(iii) How does this type of training differ from interval training?

.....

.....

(1)

(iv) How is this type of training similar to interval training?

.....

.....

(1)

(v) During the training session the leg muscles of the athlete are constantly contracting and relaxing. What type of muscle contraction is taking place in the legs whilst running?

.....

.....

.....

(1)

Leave blank

(vi) Give two effects of this type of **regular** training on the leg muscles of the athlete.

Effect 1 .....

.....

Effect 2 .....

.....

(2)

Q6

(Total 7 marks)

7. Complete the statements below about different body types and the effect these body types might have on sporting performance.

(a) ..... tend to be very muscular.

(1)

(b) Ectomorphs have a very slim build, they tend to be tall and

..... . Ectomorphs have a suitable body type for

.....

(2)

(c) The third body type is ..... . This body type is not normally associated with activities requiring speed due to the performers additional .....

(2)

Q7

(Total 5 marks)

8. All sporting activities have clearly stated rules. State **three** reasons why we have rules in sport.

1 .....

2 .....

3 .....

Q8

(Total 3 marks)

Leave blank

9.

	Potential Sports Injury/Condition	Preventative Measure
(i)	Fracture	
(ii)	Concussion	
(iii)	Soft tissue injury	
(iv)	Grazes (from slipping)	
(v)	Dehydration	
(vi)	Hypothermia	

The table above lists a number of potential sports injuries/conditions.

Complete the table by matching each potential sports injury/condition with the correct preventative measure from Figure 3.

You may NOT use any preventative measure more than once.

			
Survival blanket	**Helmet**	**Warm up**	**Referee/Umpire**
			
Studs	**Ski jacket**	**Shin Guards**	**Water**

Figure 3

Q9

(Total 6 marks)

Leave blank

10. (a) (i) Blood is circulated around the body. Name the type of blood vessel that returns blood to the heart.

.....

(1)

(ii) This type of blood vessel contains valves. What is the function of these valves?

.....

.....

(1)

(b) Blood is made up of different components. Complete the table below by identifying the:

(i) components;
(ii) function of each component;
(iii) importance to the sports performer.

(i) Component of blood	(ii) Function of each component	(iii) Importance to sports performer
		Oxygen delivery for activity
White blood cells		
		Stops blood loss so the performer can continue to play

(6)

(Total 8 marks)

Q10

Leave blank

11. Name the term being described in each of the following statements.

(a) The amount of air breathed in or out of the lungs in one breath.

.....

(1)

(b) The maximum amount of air that can be forcibly exhaled after breathing in as much as possible.

.....

(1)

(c) The amount of oxygen consumed during recovery above that which would have ordinarily been consumed in the same time at rest.

.....

(1)

Q11

(Total 3 marks)

12. (a) Figure 4 shows a performer at the start of a race. Name the bones labelled A, B and C and classify the bone type, explaining the importance of this type of bone to the performer.

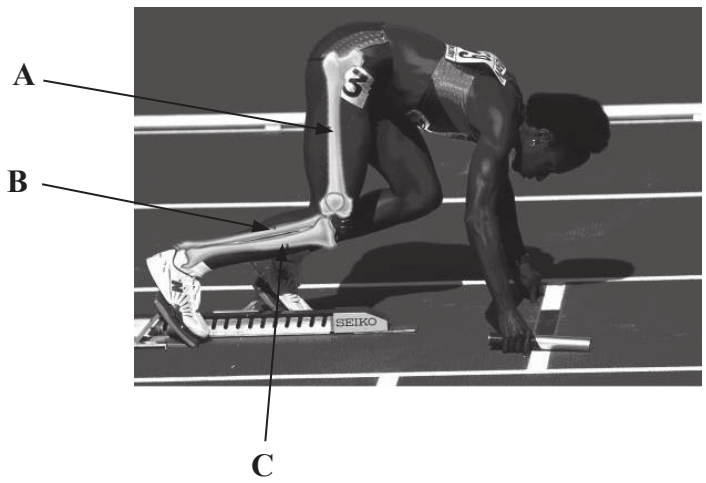

Figure 4

(i) A .....

(1)

(ii) B .....

(1)

(iii) C .....

(1)

(iv) Bone type .....

(1)

Leave blank

(v) Importance of bone type to the performer.

.....

.....

(1)

(b) The sprinter in Figure 4 is using her joints to achieve the body shape shown. Complete the following statements about types of joint and joint movement.

(i) Which type of synovial joint is the knee?

.....

This means that the range of movement possible at the knee is

..... and ..... .

(3)

(ii) The shoulder and ..... are examples of a

..... synovial joint.

(2)

(Total 10 marks)

Q12

13. Using the words tendons and ligaments complete the following statements.

(a) ..... join bone to muscle.

(1)

(b) ..... join bone to bone.

(1)

(c) ..... help to stabilise the joint.

(1)

(d) (i) ..... need to be more elastic than

(ii) ..... .

(1)

(Total 4 marks)

Q13

Leave blank

14. The box below contains words and phrases associated with the muscular system.

cardiac	muscles in the gut wall	voluntary
involuntary	heart	biceps

Complete the table by selecting a word or phrase from the box above to:

(i) name the muscle type;

(ii) give an example of where it is found in the body.

(i) Muscle Type	Explanation of type	(ii) Example of where it is found in the body.
	Not under conscious control, and does not tire	
	Under conscious control	

Q14

(Total 4 marks)

TOTAL FOR SECTION TWO: 80 MARKS

Leave blank

SECTION THREE

Answer ALL the questions. Write your answers in the spaces provided.

15. Jared is part of the school athletics team and has been described as a 'natural athlete'. His running style is excellent and other performers often comment on how good he looks when he runs.

(a) (i) What is the term used to describe the appreciation of the beauty of a skillful performance?

.....

.....

(1)

(ii) In order to perform as well as he does, Jared has to be fit. Define the terms fitness and performance.

Fitness .....

.....

Performance .....

.....

(2)

(b) Jared uses the FITT principle of training to make sure he is fit for his activity. Complete the table below by:
(i) explaining each component of the FITT principle;
(ii) giving a **specific** example of its application to bring about overload in a Personal Exercise Programme (PEP).

Component of principle	(i) Explanation of component	(ii) Example of application to create overload
F		
I		
T		
T		

(7)

Leave blank

(c) Figure 5 shows Jared's heart rate values before, during and after one of his training sessions.

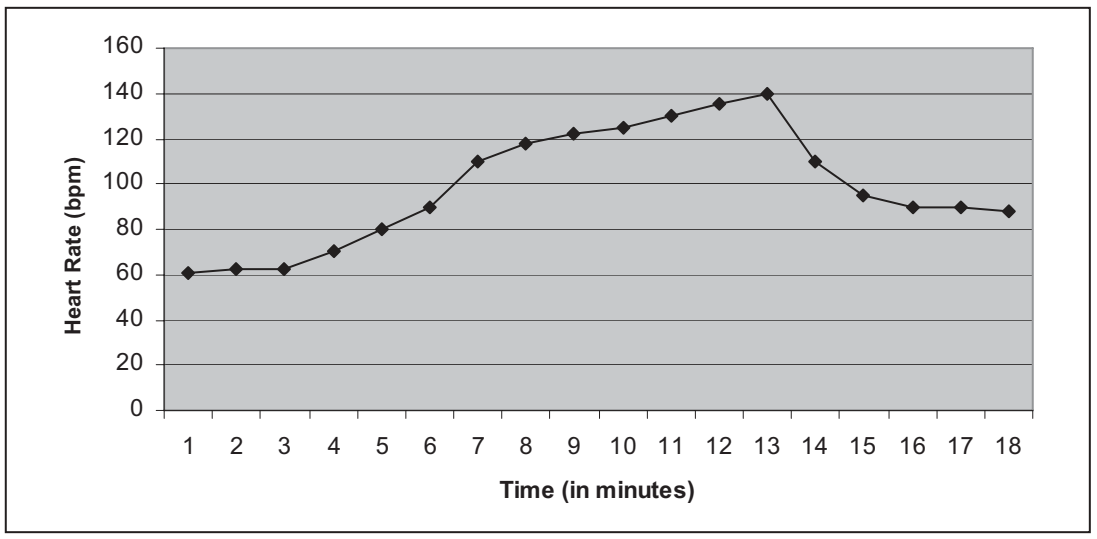

Figure 5

Use Figure 5 to answer the following questions.

(i) What was Jared's resting heart rate?

.....

(1)

(ii) After how many minutes did Jared start his training session?

.....

(1)

(iii) At what time (in minutes), was Jared working the hardest?

.....

(1)

(iv) When did Jared stop training and start his recovery?

.....

(1)

(v) Did Jared completely recover from the training session?

.....

(1)

Leave blank

(vi) Explain your answer to part (v).

.....

.....

.....

.....

(1)

(vii) Jared is 16 years old, explain how you would calculate his target zone.

.....

.....

.....

.....

(3)

(viii) Complete the statement.

Jared is working within his target zone between .....

and ..... minutes.

(1)

Q15

(Total 20 marks)

Leave blank

16. (a) The performer shown in Figure 6 is about to play a shot.

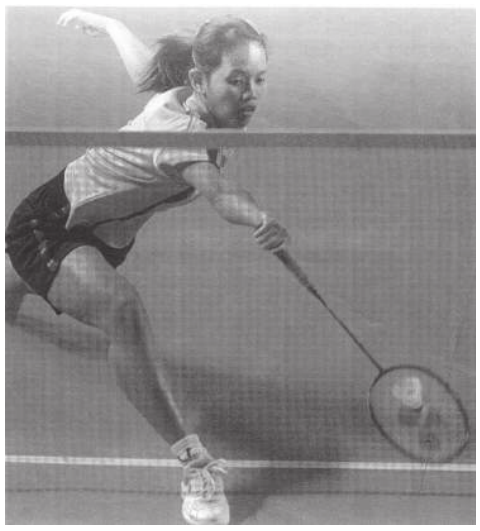

Figure 6

(i) Which component of health-related exercise is essential to allow her to reach the shuttlecock?

.....

(1)

(ii) Unfortunately as the performer stretches she has to stop suddenly due to great pain in her hamstrings.

What type of injury is she likely to have sustained?

.....

(1)

(b) Where are the hamstrings found in the body?

.....

(1)

(c) (i) Name the muscle that works antagonistically with the hamstrings.

.....

(1)

(ii) Explain the term **antagonistic** in relation to muscle action.

.....

.....

.....

(1)

Leave blank

(d) One function of the skeleton is to allow movement. Complete the table below by:

(i) naming **two** other functions of the skeleton;
(ii) explaining how the functions are achieved;
(iii) describing the importance of the function to a badminton player.

(i) Function of skeleton	(ii) Explanation of how function is achieved	(iii) Importance in badminton
Movement	Muscle attachment to bones	Hitting action when playing a shot needs movement
Shape/support	Provides rigid framework to hold the player upright	Allows the player to hold body upright whilst reaching for shuttle
		Oxygen delivery for energy release to continue to play shots

(5)

Leave blank

(e) Although playing badminton involves some risks it is not considered to be a dangerous activity. Complete the table below by:

(i) naming **two** sports/activities that involve a greater risk than badminton;
(ii) describing the risk;
(iii) explaining why this sport/activity involves a greater risk than badminton.

(i) Sport/activity involving greater risk	(ii) Description of the risk in this sport/activity	(iii) Explanation why this sport/activity involves greater risk

(6)

(f) When injured some performers may be tempted to take drugs to allow them to maintain their training.

(i) What type (class) of drug would a performer take to mask or hide pain?

.....

(1)

(ii) State **two** reasons why performers should not take this type of drug.

Reason 1 .....

.....

Reason 2 .....

.....

(2)

Leave blank

(g) If performers have taken an illegal drug they may also take diuretics.
Why might a performer take diuretics if they are taking another type of illegal drug?

.....

.....

(1)

Q16

(Total 20 marks)

17. To be a successful squash player the performer needs an efficient circulatory and respiratory system.

(a) (i) Figure 7 is a diagram of the heart. Give the anatomical names of the parts labelled A, B, C and D.

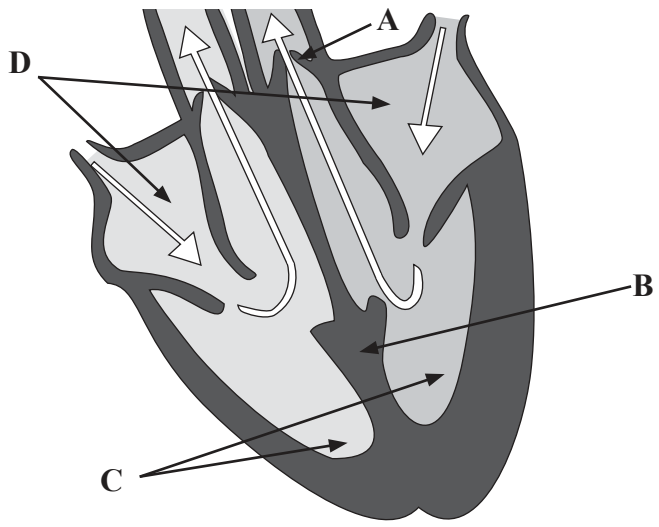

Figure 7

A .....

B .....

C .....

D .....

(4)

Leave blank

Figure 8 is a diagram of the respiratory system.

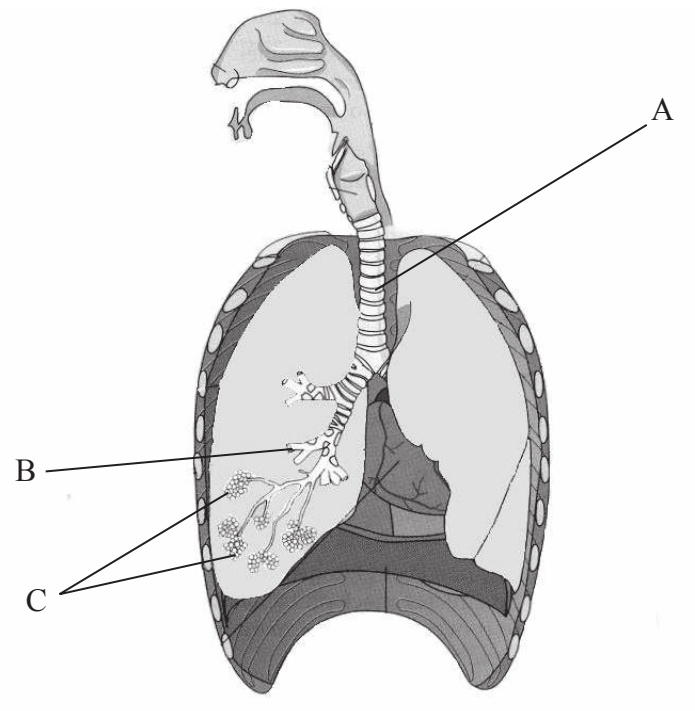

Figure 8

(ii) Give the anatomical names of the parts labelled A, B and C.

A .....

B .....

C .....

(3)

(b) (i) In order to get oxygen into the lungs the player breathes in. Describe the movement of the ribs and diaphragm during inspiration.

Ribs .....

Diaphragm .....

(2)

(ii) Why do the ribs and diaphragm move in this way?

.....

.....

.....

(1)

Leave blank

(c) The composition of inspired air differs from expired air. Complete the table below by adding the values for expired air.

Gas	% in inspired air	% in expired air
Oxygen	21	
Carbon Dioxide	0.03	

(2)

(d) The squash player in Figure 9 is moving to strike the ball. The racket arm is bent at the elbow.

Figure 9

(i) Name the bones that meet to form the elbow joint.

1 .....

2 .....

3 .....

(3)

(ii) Name the muscle responsible for bending the arm at the elbow joint.

.....

(1)

(iii) After striking the ball the racket arm will follow through so that it moves across the body.
Name the muscle responsible for adducting the upper arm at the shoulder.

.....

(1)

Leave blank

(e) Squash involves a lot of quick, sudden, explosive movements.

(i) Name the muscle fibre type most suited to these types of movements.

.....

(1)

(ii) Explain a disadvantage of this muscle fibre type.

.....

(1)

(iii) Name a training method that would be suitable to improve the efficiency of these muscle fibre types.

.....

(1)

Q17

(Total 20 marks)

TOTAL FOR SECTION THREE: 60 MARKS

TOTAL FOR PAPER: 150 MARKS

END