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 18 May 2007 – Morning

Time: 1 hour 45 minutes

Examiner's use only

Team Leader's use only

Question Number	Leave Blank
1	
2	
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4	
5	
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7	
8	
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11	
12	
13	
14	
15	
16	
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, initial(s) 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 16 questions in this question paper. The total mark for this paper is 150.
There are 32 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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Leave blank

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) Flexibility is an important aspect of fitness. Which of the following statements defines the term flexibility?

- ☒ **A** A form of physical activity designed to improve health
- ☒ **B** The range of movement possible at a joint
- ☒ **C** The ability to move from one position to another easily
- ☒ **D** A performer who can take on many different roles

(1)

(b) Which of the following is a correct statement about reaction time?

- ☒ **A** The time taken to perform a movement
- ☒ **B** The longer a runner takes to react to the starter's gun the quicker his time will be
- ☒ **C** The time between the presentation of a stimulus and the start of movement
- ☒ **D** It is a component of health related exercise

(1)

(c) Which of the following events is an example of an aerobic activity?

- ☒ **A** 100m
- ☒ **B** Javelin
- ☒ **C** 1500m
- ☒ **D** Long Jump

(1)

Leave blank

(d) Which of the following is the correct target zone for an endurance athlete who is 20 years old?

☒ **A** 200bpm : 220bpm

☒ **B** 120bpm : 160bpm

☒ **C** resting heart rate : 120bpm

☒ **D** resting heart rate

(1)

(e) Which of the following is an important source of roughage in an athlete's diet?

☒ **A** Fats

☒ **B** Vitamins

☒ **C** Minerals

☒ **D** Fibre

(1)

(f) Which of the following statements is a benefit of a cool down?

☒ **A** Reduces the chance of injury during activity

☒ **B** Increases blood flow around the body

☒ **C** Increases the production of lactic acid

☒ **D** Reduces the risk of muscle stiffness after exercise

(1)

(g) Which of the following is a true statement about arteries?

☒ **A** They take blood away from the heart

☒ **B** They all carry oxygenated blood

☒ **C** They contain blood which is under low pressure

☒ **D** They have valves

(1)

Leave blank

(h) Which of the following statements describes the correct passage of air into the lungs?

☒ **A** Nasal passages, trachea, bronchioles, alveoli

☒ **B** Trachea, bronchioles, bronchi, alveoli

☒ **C** Larynx, bronchi, bronchioles, ribs

☒ **D** Larynx, bronchi, bronchioles, alveoli

(1)

(i) Joints are capable of different ranges of movement. Which statement best describes the range of movement possible at a ball and socket joint?

☒ **A** flexion, extension, rotation, abduction, adduction

☒ **B** circumduction, extension, flexion, rotation, abduction

☒ **C** adduction, circumduction, flexion, extension, rotation

☒ **D** adduction, abduction, circumduction, flexion, rotation

(1)

(j) The correct statement in relation to muscle tone is:

☒ **A** Muscle contraction that is controlled consciously

☒ **B** The reflex contraction of involuntary muscles

☒ **C** Muscle definition in an elite performer

☒ **D** State of slight tension in voluntary muscles

(1)

Q1

(Total 10 marks)

TOTAL FOR SECTION ONE: 10 MARKS

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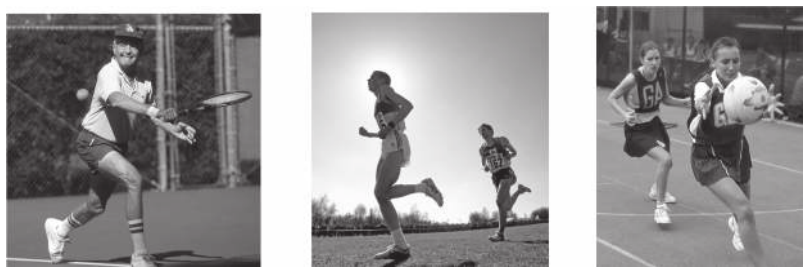
SECTION TWO

Answer all questions

2. **Figure 1** shows performers participating in sport.



(Source: *Essential GCSE PE for Edexcel*, Hodder Arnold, 2005)

Figure 1

Complete the table below

(i) Give **one** reason why each performer takes part in physical activity. Make sure you give a different reason for each performer.

(ii) State whether the reason is Social, Physical or Mental.

PERFORMER	(i) REASON	(ii) SOCIAL, PHYSICAL OR MENTAL BENEFIT OF EXERCISE
TENNIS PLAYER		
CROSS COUNTRY RUNNER		
CLUB NETBALL PLAYER		

(6)

Leave blank

(iii) State **two** other reasons for taking part in sport

1 .....

.....

2 .....

.....

(2)

(Total 8 marks)

Q2

3. Select a component of Health Related Exercise to complete the following statements:

(a) The legs of a long distance runner need high levels of ..... to ensure that they can last the length of the race.

(1)

(b) This is required by a gymnast to support his body weight

..... .

(1)

(c) ..... is the percentage of body weight which is fat, muscle and bone.

(1)

(Total 3 marks)

Q3

Leave blank

4. (a) Select a **different** component of Skill Related Fitness to complete each of the following statements:

(i) A high jumper needs ..... at take off to achieve the height to clear the bar.

(1)

(ii) Racket players need ..... to move the hand holding the racket to the right place to strike the ball correctly.

(1)

(iii) Footballers need ..... to beat their opponents to the ball.

(1)

(iv) A gymnast needs ..... to maintain her position on a beam.

(1)

(b) **Figure 2** shows performers in two different activities.

Agility is more important to the games players than the sprinters.

(Source: *Essential GCSE PE for Edexcel*, Hodder Arnold, 2005)

Figure 2

(i) Explain the term agility.

.....

.....

.....

(1)

Leave blank

(ii) Give a **specific** example when a games player would use agility during a match.

.....

.....

.....

(1)

(iii) Explain why agility is not important to a 100m sprinter.

.....

.....

.....

(1)

Q4

(Total 7 marks)

Leave blank

5. (a) The principles of training are used to improve health, fitness and performance.

(i) Explain how the principle of **overload** could improve fitness.

.....

.....

.....

.....

(1)

(ii) Explain how the principle of **moderation** can help to maintain health.

.....

.....

.....

.....

(1)

(iii) Explain how the principle of **specificity** could lead to improved performance.

.....

.....

.....

.....

(1)

(b) When would a performer experience the principle of **reversibility**?

.....

.....

.....

.....

(1)

Q5

(Total 4 marks)

Leave blank

6. (a) The gymnast in **Figure 3** is holding a position on the rings.

(Source: *Essential GCSE PE for Edexcel*, Hodder Arnold, 2005)

Figure 3

(i) What type of muscle contraction is taking place to allow the gymnast to hold this position?

.....

(1)

(ii) What **method of training** would the gymnast use to develop the component of fitness necessary to support him in this position?

.....

.....

(1)

(b) (i) What would be the most likely **training method** for a 100m sprinter to use, on the track, to improve his performance?

.....

(1)

(ii) How does this method of training match the needs of the sprinter?

.....

.....

.....

.....

(1)

(Total 4 marks)

Q6

Leave blank

7. **Figure 4** shows three sports performers.

(Source: *Essential GCSE PE for Edexcel*, Hodder Arnold, 2005)

Figure 4

Complete the table below

(i) Name the body type of each performer shown in Figure 4.

(ii) State **one** reason why this body type is an advantage to the performer shown in Figure 4 in his/her sport.

PERFORMER	(i) BODY TYPE	(ii) REASON FOR ADVANTAGE
SPRINTER		
TENNIS PLAYER		
HIGH JUMPER		

Q7

(Total 6 marks)

Leave blank

8. (a) Use some of the words in the box below to complete the following statements:

throwing	arms	skills practice
lower the temperature	sprinting	stretching
raise the pulse	catching	muscles
jogging	lower the heart rate	elasticity

(i) A general warm up should start with some gentle ..... .

(1)

(ii) This activity is used to ..... of the performer so that increased oxygen can be delivered to the muscles.

(1)

(iii) The second phase of the warm up involves ..... .

(1)

(iv) This increases the ..... of the ligaments and tendons.

(1)

(v) Finally the performer should complete some ..... which relates to the activity.

(1)

(b) Competitions are often balanced.

(i) Explain the term **balanced competition**.

.....

.....

(1)

(ii) State three ways that competition can be balanced.

1 .....

.....

2 .....

.....

3 .....

.....

(3)

(Total 9 marks)

Q8

Leave blank

9. (a) What types of sports injuries or conditions have the following common symptoms?

(i) Swelling of tissue, distortion of natural shape and difficulty in moving the injured part.

.....

(1)

(ii) Thirst, dry lips, confusion

.....

(1)

(iii) Pain around the elbow joint

.....

(1)

(iv) Severe headache, dizziness and nausea

.....

(1)

(v) Shivering, pale, cold and dry skin

.....

(1)

(b) (i) What **types** of injuries are treated using R.I.C.E?

.....

(1)

(ii) What do the letters R.I.C.E. stand for?

.....

.....

(1)

(c) When would a first aider give cardiopulmonary resuscitation (CPR)?

.....

.....

(1)

(d) Why would a performer be placed in the recovery position?

.....

.....

(1)

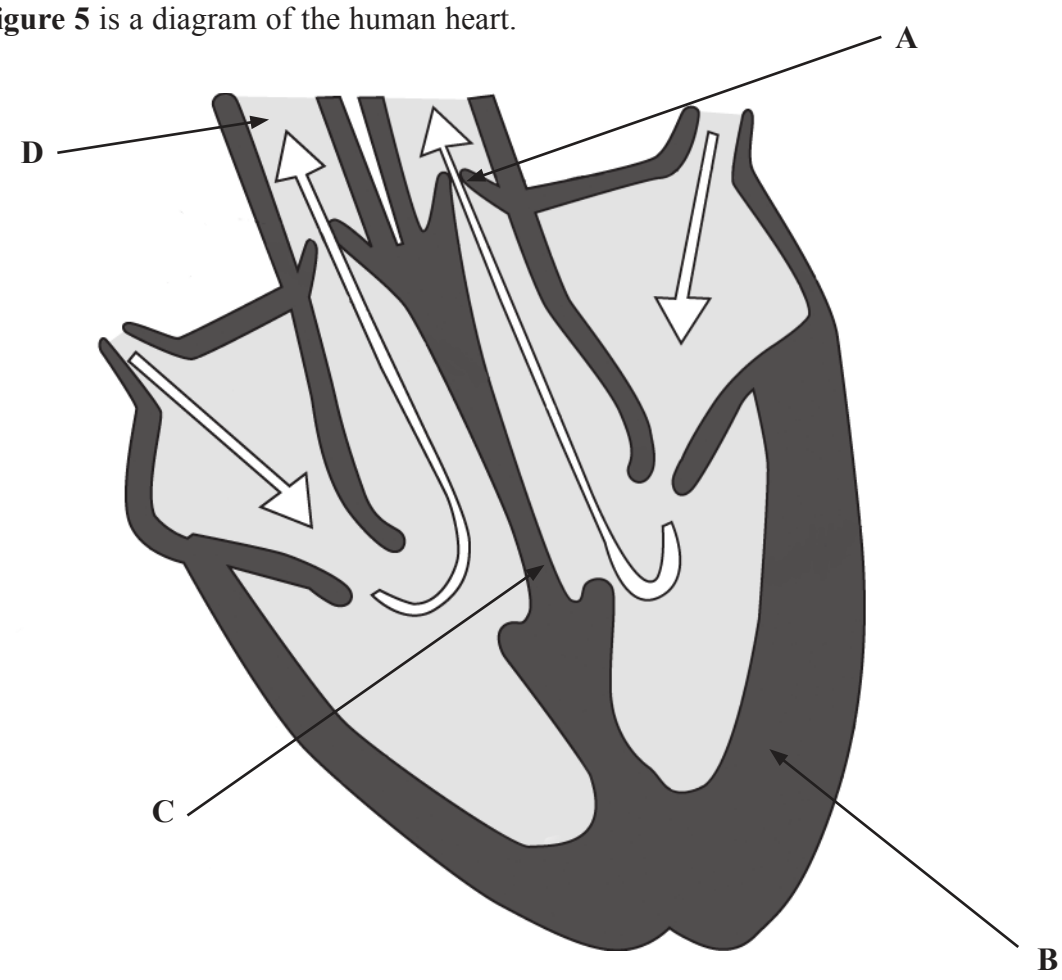
(Total 9 marks)

Leave blank

Q9

Leave blank

10. **Figure 5** is a diagram of the human heart.



(Source: Fountain and Gee, *PE to 16*, Oxford University Press, 1996)

Figure 5

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

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

(1)

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

(1)

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

(1)

(iv) **D** .....

(1)

Leave blank

(b) Explain the function of the parts labelled **A**, **B**, **C** and **D**.

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

.....

(1)

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

.....

(1)

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

.....

(1)

(iv) **D** .....

.....

(1)

(c) Explain how the function of the parts labelled **C** and **D** will affect performance

(i) **C** .....

.....

(1)

(ii) **D** .....

.....

(1)

(d) (i) What effect would **long-term weight/resistance training** have on the part labelled **B**?

.....

.....

.....

(1)

(ii) How would this training effect help the performer?

.....

.....

.....

(1)

Q10

(Total 12 marks)

Leave blank

11. (a) **Figure 6** shows the relative percentage of gases in the air we breathe in. Label the gases represented by **A**, **B** and **C**

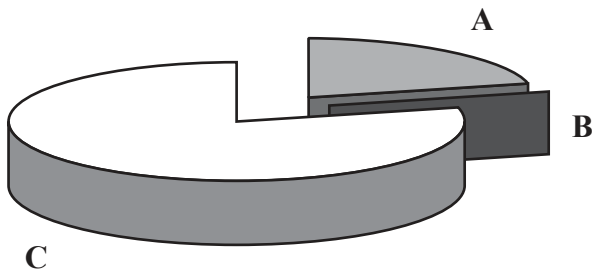


Figure 6

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

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

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

(b) (i) What happens to the percentage of gas **A** when we breathe out?

.....
(1)

(ii) Why does the amount of gas **A** vary in inhaled and exhaled air?

.....

.....
(1)

(c) The level of gas **B** increases when we breathe out as the body produces this gas during respiration. What combines with gas A resulting in an increase in gas B?

.....

.....
(1)

Q11

(Total 6 marks)

Leave blank

12. The words in the box are all classifications of bones.

long	short	flat	irregular

(a) From the words above select the correct classification for the following bones

(i) Humerus .....

(1)

(ii) Cranium .....

(1)

(b) Explain how the function of these bone types could aid the performance of a hockey player

(i) Humerus .....

.....

.....

(1)

(ii) Cranium .....

.....

.....

(1)

(Total 4 marks)

Q12

Leave blank

13. (a) A joint is formed where two or more bones meet. Name the bones that form the knee joint.

1 .....

(1)

2 .....

(1)

(b) What is the main range of movement possible at the knee joint?

.....

.....

(1)

(c) Which muscles contract to allow this range of movement?

1 .....

(1)

2 .....

(1)

(d) What type of muscle contraction brings about this range of movement?

.....

(1)

(e) Name the type of muscle that causes this contraction.

.....

(1)

(f) What body tissue adds stability to the knee joint?

.....

(1)

Q13

(Total 8 marks)

TOTAL FOR SECTION TWO: 80 MARKS

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SECTION THREE

Answer all questions

14. Chris plays basketball and badminton for his school. He is taking GCSE PE and is learning about circuit training.

(a) This is Chris' first attempt at planning his circuit. His six skill stations are listed below.

Station 1	Dribbling a ball in and out of cones
Station 2	Hitting a ball against a wall
Station 3	Serving
Station 4	Chest passes against a wall
Station 5	Stationary shots at a basket
Station 6	Bowling at a target

(i) Identify three weaknesses of **his** circuit.

1 .....

.....

2 .....

.....

3 .....

.....

(3)

(ii) List three additional **fitness** stations Chris could include to improve his fitness for either badminton or basketball.

1 .....

.....

2 .....

.....

3 .....

.....

(3)

Leave blank

(b) (i) In the table below add your three chosen fitness stations to give a six station circuit.

Complete the table below to show which components of Health Related Exercise or Skill Related Fitness Chris would be improving if he used this circuit on a regular basis.

	Station in circuit	**Component of Health Related Exercise or Skill Related Fitness**
1	Dribbling a ball in and out of cones	
2	Chest passes against a wall	
3	Stationary shots at a basket	
4		
5		
6		

(6)

(ii) Select either badminton or basketball. Choose three stations from the circuit in (a) and in the table below state how each station would improve Chris' performance.

Chosen sport .....

Station	How performance would be improved

(3)

Leave blank

(c) State **three** advantages of using circuit training as a training method

1 .....

.....

.....

2 .....

.....

3 .....

.....

.....

(3)

(d) (i) Fats and carbohydrates provide the performer with energy.

Should Chris eat a larger amount of fat or carbohydrate in his diet?

.....

(1)

(ii) Why is this a better source of energy for Chris?

.....

.....

(1)

Q14

(Total 20 marks)

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15. Katie is a tri-athlete. When she competes her event involves running, cycling and swimming. She uses cross training to make sure she is fit enough for her sport.

(a) (i) What is meant by the term cross training?

.....

.....

(1)

(ii) Why is this a good method of training for Katie to use?

.....

.....

(1)

(b) Katie applies the F.I.T.T. principle to her training.

(i) What do the letters F.I.T.T. stand for?

F .....

I .....

T .....

T .....

(1)

(ii) How can Katie use each aspect of this principle to increase her fitness for her sport?

F – .....

.....

I – .....

.....

T – .....

.....

T – .....

.....

(4)

Leave blank

(c) It is important that Katie does not overtrain as this will lead to injury. State two other ways that Katie may avoid injury during training.

(i) .....

.....

(1)

(ii) .....

.....

(1)

(d) During exercise Katie's cardiac output increases, compared to when she is at rest

(i) What is meant by the term cardiac output?

.....

.....

(1)

(ii) The increase in cardiac output might be due to an increase in heart rate. What else is responsible for the increase in cardiac output?

.....

.....

(1)

(e) (i) Some athletes take illegal performance enhancing drugs to control their heart rate. Which class of drug will have a calming effect on a performer's heart rate?

.....

(1)

(ii) A potentially harmful effect of another class of drugs is to increase heart rate. Name this class of drug.

.....

(1)

(f) In addition to an increase in heart rate Katie's tidal volume also increases. What is meant by the term tidal volume?

.....

.....

.....

(1)

Leave blank

(g) (i) Despite an increase in tidal volume Katie still experiences an oxygen debt as a result of her training. How could you tell by looking at Katie after training that she has an oxygen debt?

.....

.....

(1)

(ii) What is meant by the term oxygen debt?

.....

.....

.....

(1)

(h) During the swimming part of her event Katie uses her arms to pull her through the water.

Complete the statements below that relate to Katie's swimming stroke.

(i) Katie's arm enters the water in a straight position and then bends as it pulls through the water. The muscles of the upper arm that cause her arm to straighten

are the ..... .

(1)

(ii) The muscles in the upper arm that contract to bend her arm are the

..... .

(1)

(iii) This action takes place at the elbow joint. The elbow joint is formed by the

humerus, ... and ..... .

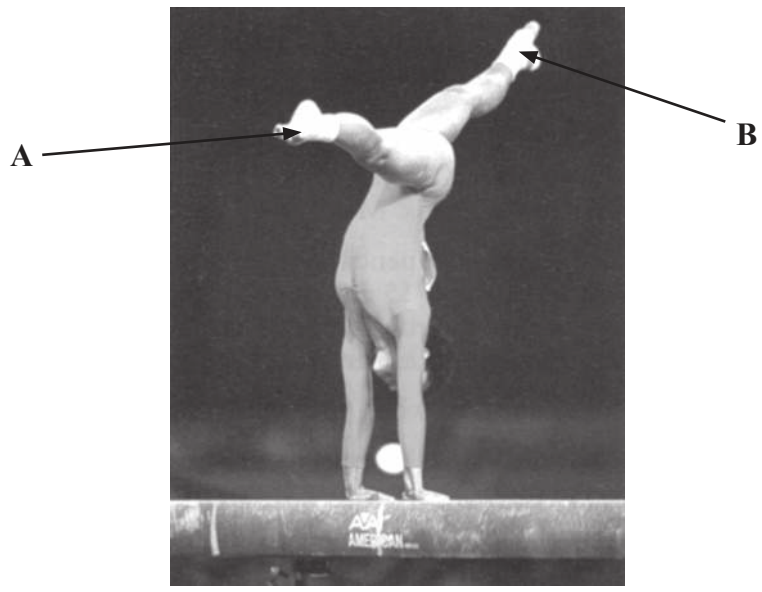
(2)

Q15

(Total 20 marks)

Leave blank

16. **Figure 7** shows a gymnast on a beam



(Source: Colorsport)

Figure 7

(a) The gymnast is currently supporting her weight on her wrists.

(i) What **type** of bones form the wrist?

.....

(1)

(ii) Why is this type of bone suited to supporting the gymnast's weight?

.....

.....

(1)

(b) The gymnast has moved her legs from a vertical position to a split position as shown in Figure 7.

Complete the following statement about the movement by stating the missing joints and joint actions.

(i) The gymnast has ..... the leg labelled **A** at the hip joint and ..... the leg labelled **B**

(2)

(ii) Both of the gymnasts arms are .....

at the .....joint.

(2)

Leave blank

(c) During her routine the gymnast will use a variety of muscles. Which muscles are responsible for the following actions?

(i) Abduction of the upper arm at the shoulder in preparation for a cartwheel

.....

(1)

(ii) Adduction of the upper arm at the shoulder as she moves her arms in for a diving forward roll

.....

(1)

(iii) Pointing of her toes as she walks across the beam

.....

(1)

(iv) Flexion of the trunk before moving into a handstand.

.....

(1)

(d) (i) Gymnasts often need to produce quick movements, working very hard for short periods of time. What type of exercise is this?

.....

(1)

(ii) When performers exercise in this way a bi-product is produced. What is the name of this bi-product?

.....

(1)

(iii) Which muscle fibre types are used to produce explosive, powerful movements?

.....

(1)

(iv) What is the disadvantage of this type of muscle fibre?

.....

.....

(1)

Leave blank

(v) These fibre types are also required by some athletes. Name an Athletics event where this type of muscle fibre is of particular benefit to the performer.

.....

.....

(1)

(e) Power is important in gymnastics to achieve a good performance.

(i) What is meant by the term **performance**?

.....

.....

(1)

(ii) What is meant by the term **power**?

.....

.....

.....

(1)

(f) Gymnasts train to improve their performance in their sport.

(i) State one possible effect of regular anaerobic training on the muscular system

.....

.....

(1)

(ii) State two possible long-term health benefits of exercise

1 .....

.....

2 .....

.....

(2)

Q16

(Total 20 marks)

TOTAL FOR SECTION THREE: 60 MARKS

TOTAL FOR PAPER: 150 MARKS

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