OCR
RECOGNISING ACHIEVEMENT

ADVANCED SUBSIDIARY GCE **2562**

PHYSICAL EDUCATION

The Application of Physiological and Psychological Knowledge to Improve Performance

MONDAY 19 MAY 2008

Morning
Time: 1 hour 30 minutes

Candidates answer on the question paper
Additional materials: No additional materials are required

CUP/T50294

Candidate Forename		Candidate Surname	
Centre Number		Candidate Number	

INSTRUCTIONS TO CANDIDATES

- Write your name in capital letters, your Centre Number and Candidate Number in the boxes above.
- Use blue or black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure that you know what you have to do before starting your answer.
- Answer **all** the questions.
- Do **not** write in the bar codes.
- Write your answer to each question in the space provided.
- Additional answer space is available on the lined page at the back of this booklet. Answers on this page **must** be clearly numbered.

INFORMATION FOR CANDIDATES

- The number of marks for each question is given in brackets [ ] at the end of each question or part question.
- The total number of marks for this paper is **60**.

FOR EXAMINER'S USE	
1	
2	
3	
4	
TOTAL	

This document consists of **11** printed pages and **1** lined page.

[Turn over

Section A

Answer **all** questions.

Application of Anatomical and Physiological Knowledge to Improve Performance

1 **(a)** Fig. 1 shows an athlete putting a shot.

Fig. 1

(i) Complete the joint analysis table below. [4]

Joint	Joint Type	Articulating Bones	Movement	Agonist	Antagonist
Right Shoulder			Abduction		

Fig. 2 shows a gymnast holding the 'crucifix' position on the rings.

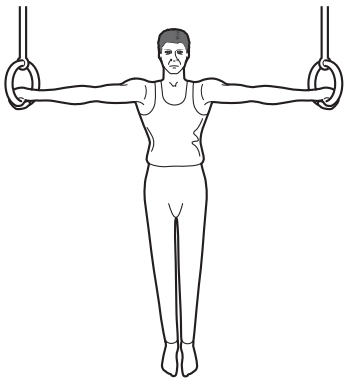


Fig. 2

(ii) What type of contraction is occurring in the shoulder muscles to hold the position in Fig. 2?

..... [1]

(iii) What movement is occurring in the ankle joint of the performer in Fig. 2?

..... [1]

(b) Movement can be described as linear, angular or general motion.

(i) Use a practical example to describe how linear motion can be produced.

.....

.....

.....

.....

.....

..... [2]

(ii) A knowledge of centre of mass in physical education and sport can improve performance.

Using a practical example from PE or sport, explain how the position of centre of mass enables a performer to resist motion or external forces.

.....

.....

.....

.....

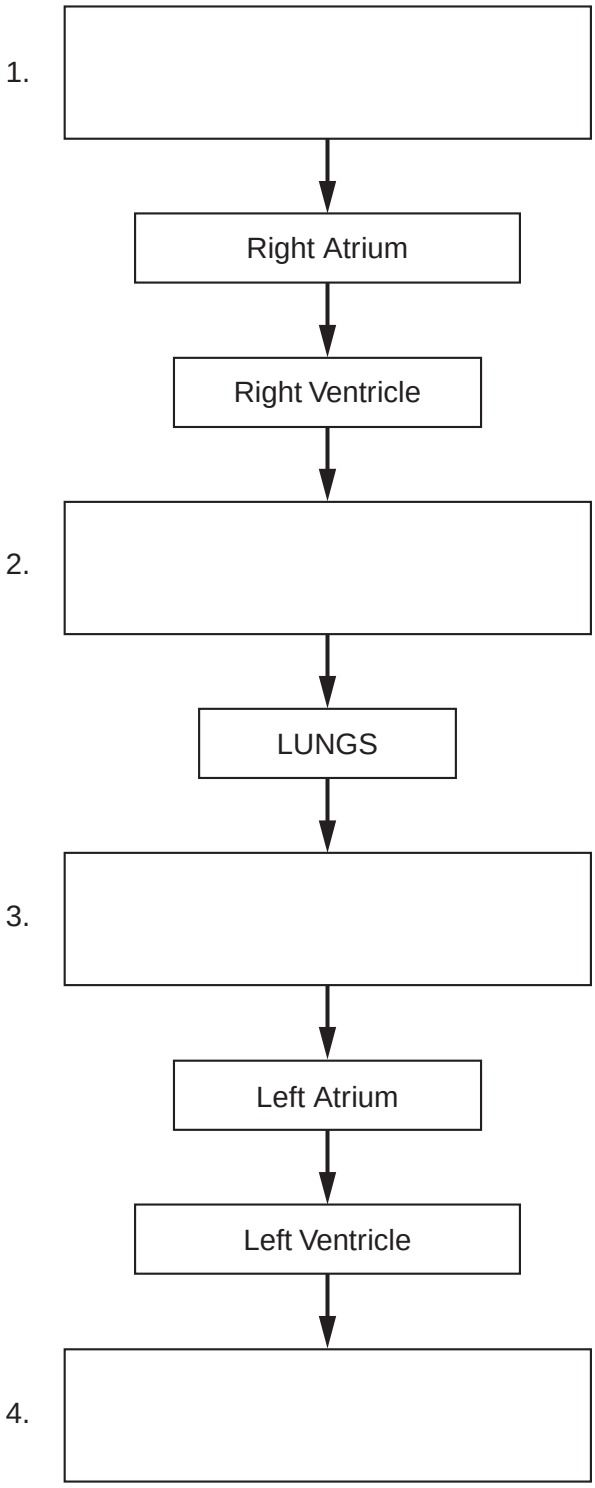
.....

.....

.....

..... [3]

(c) Complete the flow diagram outlining the flow of blood through the pulmonary circulatory system during exercise. [4]



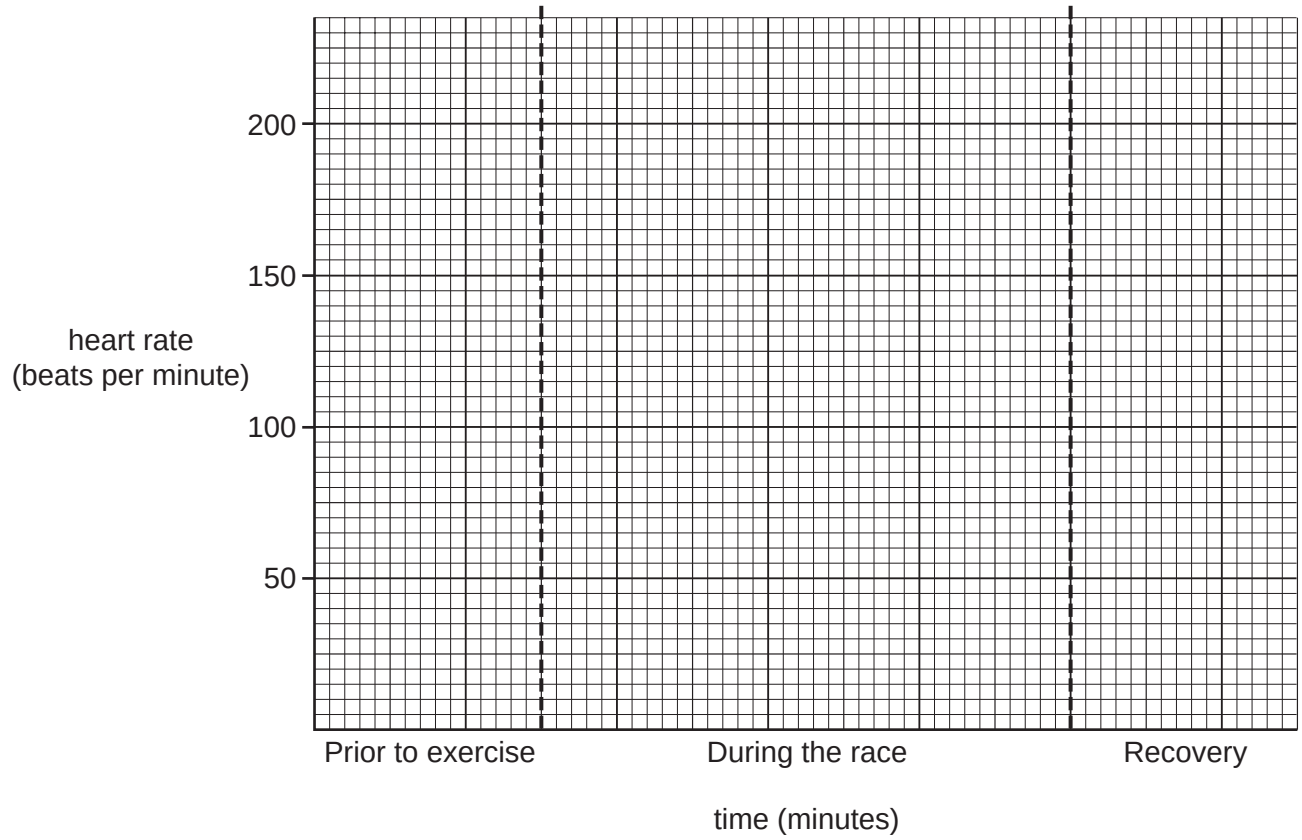
[Total: 15]

2 **(a)** Fig. 3 shows a sprinter in a 400 metre race.

Fig. 3

Sketch a graph to show the heart rate changes of the sprinter in Fig. 3 in the following phases of a race.

- Prior to exercise
- During the race
- Recovery period [4]



(b) An increase in heart rate during exercise is a result of intrinsic, neural and hormonal responses.

Describe the hormonal factors which affect heart rate during exercise.

.....

.....

.....

..... [2]

(c) During exercise minute ventilation increases.

Identify the neural factors which influence the depth of inspiration of the performer.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [4]

(d) During exercise a performer requires large amounts of oxygen to be transported to the muscles.

(i) Explain how oxygen is transported in the blood.

.....

.....

.....

.....

..... [2]

(ii) Explain the process of carbon dioxide diffusion at the muscle tissue.

.....

.....

.....

.....

.....

..... [3]

[Total: 15]

Section B

Answer **all** questions.

Acquiring and Performing Movement Skills

3 **(a)** Movement skills can be classified along the organisation continuum.

Use practical examples to explain both high and low organisation.

High organisation .....

.....

.....

.....

Low organisation .....

.....

.....

..... [4]

(b) **(i)** Use the example of triple jump to explain how movement skills can be learned and practised using the progressive part method.

.....

.....

.....

.....

.....

..... [3]

(ii) Having practised a movement skill, performers can benefit from feedback.

Use a practical example to describe **knowledge of performance** feedback.

.....

.....

.....

..... [2]

(c) Fig. 4 shows Bandura's model of observational learning.

Observation → Attention → Retention → Motor Reproduction → Motivation → Performance

Fig. 4

Use a practical example to explain the attention, retention and motor reproduction stages of the model in Fig. 4.

Attention .....

.....

.....

Retention .....

.....

.....

Motor Reproduction .....

.....

..... [3]

(d) Learning and performing movement skills can often be improved through the use of guidance.

(i) What is mechanical guidance?

Mechanical guidance .....

..... [1]

(ii) Use a practical example to explain manual guidance.

Manual guidance .....

.....

.....

..... [2]

[Total: 15]

4 **(a)** Identify **two** key characteristics of ability and describe how a performer's abilities are used in athletics or swimming.

.....

.....

.....

.....

.....

..... [3]

(b) Memory plays a part in the learning and performance of movement skills.

Identify **three** characteristics of the short-term memory.

1. .....

.....

2. .....

.....

3. .....

..... [3]

(c) A performer's motivation can affect the quality of their performance.

(i) Define motivation.

.....

..... [1]

(ii) Explain what is meant by extrinsic motivation.

Extrinsic motivation .....

..... [1]

(iii) Use a practical example to explain what is meant by intrinsic motivation.

Intrinsic motivation .....

.....

.....

..... [2]

(d) Learning can be described as passing through three phases.

(i) Use a practical example to describe three characteristics of the autonomous phase of learning.

.....

.....

.....

.....

.....

..... [3]

(ii) What are the advantages of using mental practice/rehearsal for a performer in the autonomous phase of learning?

.....

.....

.....

..... [2]

[Total: 15]

If you use this lined page you **must** write the question number next to your answer.