



CANDIDATE
NAME

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CENTRE
NUMBER

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CANDIDATE
NUMBER

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0413/11

Paper 1 Theory

October/November 2022

1 hour 45 minutes

You must answer on the question paper.

No additional materials are needed.

INSTRUCTIONS

- Answer **all** questions.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes.
- You may use a calculator.
- You should show all your working and use appropriate units.

INFORMATION

- The total mark for this paper is 100.
- The number of marks for each question or part question is shown in brackets [].

This document has **16** pages.

- 1 The photographs show different combat activities. Photograph **A** shows judo performers and photograph **B** shows taekwondo performers.

**A****B**

- (a) Identify **three** functions of the skeleton. Describe an example of each function being used in either judo or taekwondo.

function 1

example 1

.....

function 2

example 2

.....

function 3

example 3

.....

[6]

- (b) Explain how **one** named type of injury can be caused during a combat activity.

type of injury

explanation of cause

.....

[2]

- (c) Other than the use of protective clothing and equipment, suggest **three** strategies that can be used to help reduce the risk and severity of injury to performers in combat activities.

1

.....

2

.....

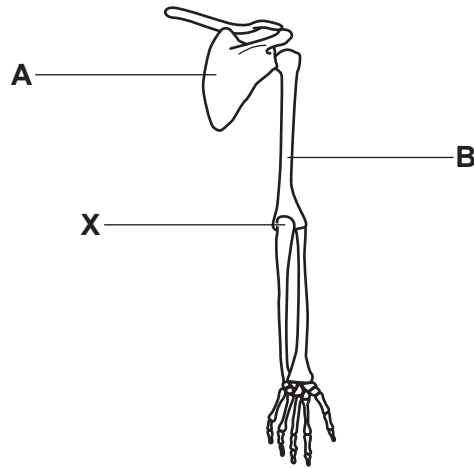
3

.....

[3]

[Total: 11]

- 2 (a) The diagram shows part of the human skeleton.



- (i) State the names of the bones labelled **A** and **B**.

A

B

[2]

- (ii) Identify the classification of the bone labelled **A** in the diagram as long, short or flat. Circle your chosen answer.

long

short

flat

[1]

- (iii) State the type of synovial joint labelled **X** in the diagram. Identify **one** type of movement that this joint allows.

type of synovial joint

type of movement

[2]

- (b) The same name is given to a set of bones in the fingers and the toes.

State the name of this set of bones.

..... [1]

- (c) Describe the functions of ligaments in a synovial joint.

.....

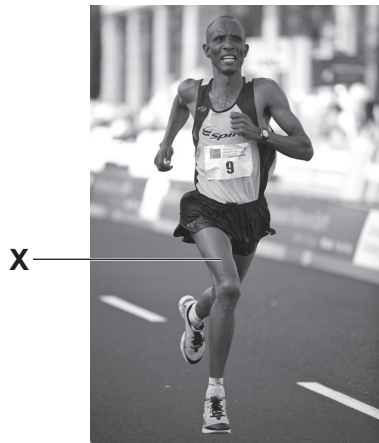
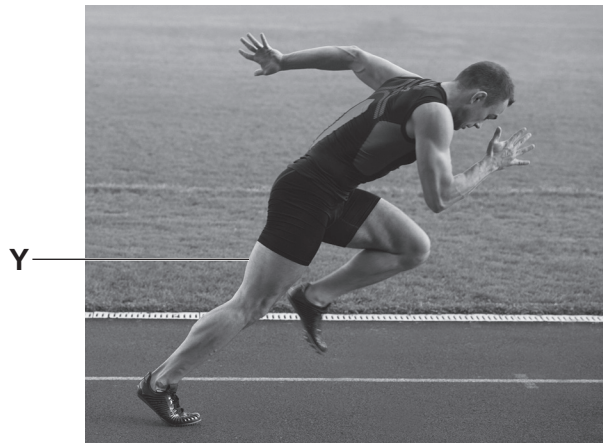
.....

.....

..... [2]

[Total: 8]

- 3 Photograph **A** shows a long-distance runner and photograph **B** shows a 100-metre sprinter.

**A****B**

- (a) State the name of the main muscle group located at **X** and the name of the main muscle group located at **Y**.

X

Y [2]

- (b) Identify the main muscle fibre type used by a long-distance runner to maintain a steady pace. Describe **two** different characteristics of this muscle fibre type.

main muscle fibre type

characteristic 1

.....

characteristic 2

..... [3]

- (c) The long-distance runner and the 100-metre sprinter release the majority of their energy in different ways.

- (i) Identify the type of respiration shown by the following equation.



..... [1]

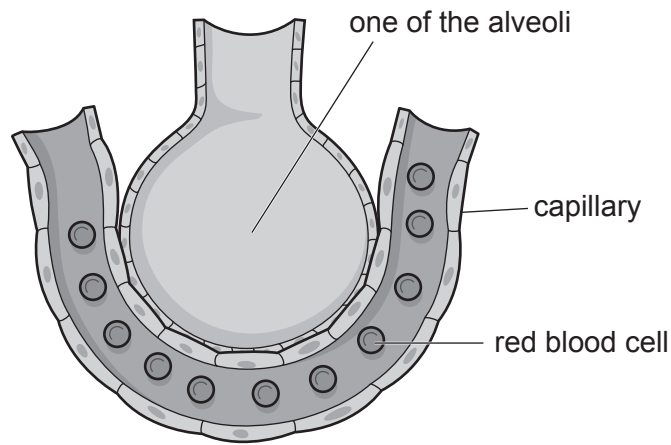
- (ii) State the equation for the type of respiration used to release the majority of energy during a 100-metre sprint.

[1]

[Total: 7]

4 The diagram shows one of the alveoli and its blood supply.

- (a) Draw an arrow on the diagram to show the direction of the diffusion of most of the oxygen during gaseous exchange.



[1]

- (b) Explain how **two** characteristics of the alveoli enable efficient gaseous exchange.

characteristic 1

explanation

.....

characteristic 2

explanation

.....

[4]

- (c) Identify **two** respiratory muscles used when breathing in at rest. Explain a different function of each of these respiratory muscles.

respiratory muscle 1

function

.....

respiratory muscle 2

function

.....

[4]

[Total: 9]

- 5 (a) Identify the main component of blood involved when:

forming a scab on a cut

.....

fighting infection.

.....

[2]

- (b) (i) Describe **two** differences, other than the presence of valves, between arteries and veins.

1

.....

2

.....

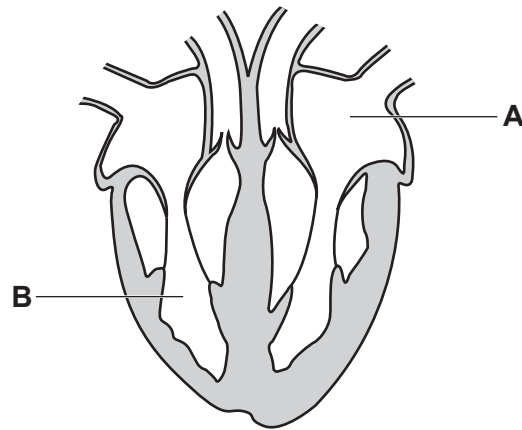
[2]

- (ii) Describe the function of valves in veins.

.....

..... [1]

(c) The diagram shows the structure of the heart.



Identify the structures labelled **A** and **B**. Describe the pathway of blood from each structure when the heart contracts.

structure **A**

pathway

.....

structure **B**

pathway

.....

[4]

(d) State the name given to the volume of blood that leaves the heart every minute.

..... [1]

[Total: 10]

- 6 State what Excess Post-exercise Oxygen Consumption (EPOC) is also known as.

..... [1]

- 7 (a) Identify the missing words in the following World Health Organization (WHO) definition of health:

'a state of complete physical, and social well-being and not merely the absence of or infirmity'.

[2]

- (b) Better health awareness and an increase in leisure time are factors that have influenced the growth in leisure activities.

Suggest **two** other factors that can influence the growth in leisure activities.

1

2

[2]

[Total: 4]

8 Fitness testing is an important part of training.

- (a) Suggest reasons, other than to identify the strengths and weaknesses of their performers, why fitness testing may be used by a coach.

.....

.....

.....

..... [2]

- (b) Muscular endurance and reaction time are important components of fitness for games players.

- (i) State what is meant by muscular endurance and reaction time. For each component of fitness, describe **one** example from a games activity of when it is used.

muscular endurance

.....

example from a games activity

.....

reaction time

.....

example from a games activity

..... [4]

- (ii) Describe how to carry out a named test of muscular endurance.

name of test

description

.....

.....

.....

.....

..... [4]

(c) Describe, using an example of each, overload and overtraining.

overload

.....

example

.....

overtraining

.....

example

.....

[4]

[Total: 14]

9 Fartlek training is a type of training that can be used by games players.

Describe, using examples, a fartlek training session that can be used by a games player.

.....

.....

.....

..... [2]

10 A pulse raiser and stretches are two phases of a warm up.

- (a) Complete the table to identify **one** other phase of a warm up. Identify a practical example for this phase.

other phase of warm up	practical example

[2]

- (b) State **two** psychological reasons for warming up.

1

.....

2

.....

[2]

- (c) At the end of physical activity it is important to cool down.

Identify **one** phase of a cool down. Describe **two** different physiological benefits of a cool down.

phase of cool down

benefit 1

.....

benefit 2

.....

[3]

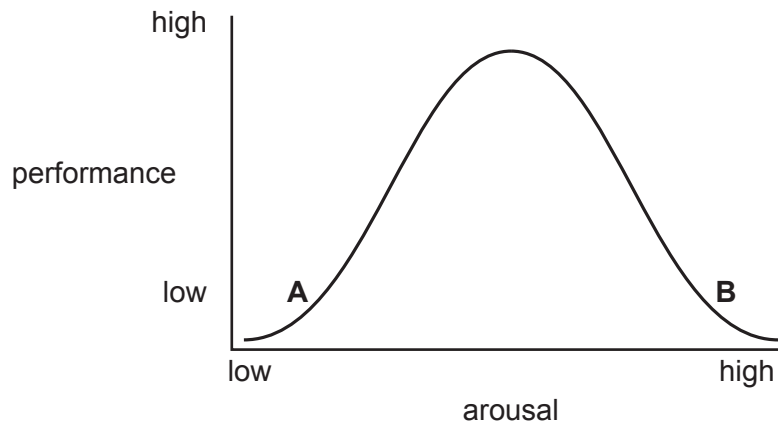
[Total: 7]

11 (a) The diagram shows the inverted-U theory of arousal.

(i) State the other recognised name for the inverted-U theory of arousal.

..... [1]

(ii) Draw an **X** on the diagram to indicate the optimal level of arousal.



[1]

(b) Explain, using a different sporting example for each, why performance is low at point **A** and why performance is low at point **B** on the diagram.

point **A**

explanation

.....

example

.....

point **B**

explanation

.....

example

.....

[4]

(c) State the names of **two** relaxation techniques that can be used to control arousal.

1

2

[2]

[Total: 8]

12 (a) State a major global sporting event.

..... [1]

(b) Suggest **two** reasons why a nation may want to host a major global sporting event.

1

.....

2

.....

[2]

[Total: 3]

13 (a) Explain why a swimming coach should use each of the following principles of SMARTER goal setting when teaching a performer:

measurable

.....

realistic

.....

exciting.

.....

[3]

(b) Describe **three** characteristics of a performer that the swimming coach could use to decide if the performer has moved from the cognitive stage of learning to the associative stage of learning.

1

.....

2

.....

3

.....

[3]

(c) State **two** types of guidance the swimming coach may use during a swimming lesson.

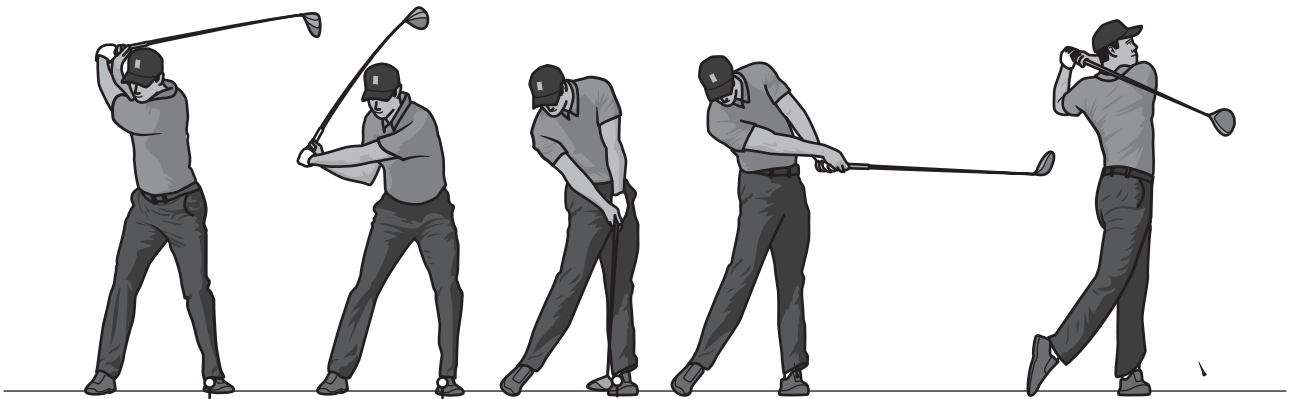
1

2

[2]

[Total: 8]

- 14 (a) The diagram shows stages of a performer hitting a golf ball.



Justify each of the following classifications of hitting a golf ball:

a gross skill

.....

a closed skill.

.....

[2]

- (b) Beta blockers are a type of prohibited performance-enhancing drug that may be used by some golfers.

- (i) Suggest why some performers choose to use beta blockers to enhance their performance.

.....

.....

.....

..... [2]

- (ii) Suggest **two** disadvantages of using prohibited performance-enhancing drugs.

1

.....

2

.....

[2]

- (c) Suggest strategies an organising body could use to reduce the use of prohibited performance-enhancing drugs in sport.

.....

.....

.....

..... [2]

[Total: 8]

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