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PHYSICAL EDUCATION

0413/12

Paper 1 Theory

May/June 2021

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. Any blank pages are indicated.

1 Identify **two** types of blood vessels.

1

2

[2]

2 Speed is a component of fitness.

(a) (i) Define *speed*.

.....

..... [1]

(ii) Describe how to carry out a named fitness test for speed.

name of test

description

.....

.....

.....

.....

.....

.....

.....

[4]

(b) Describe **two** reasons, apart from monitoring improvement, why a coach would carry out fitness tests on a performer.

1

.....

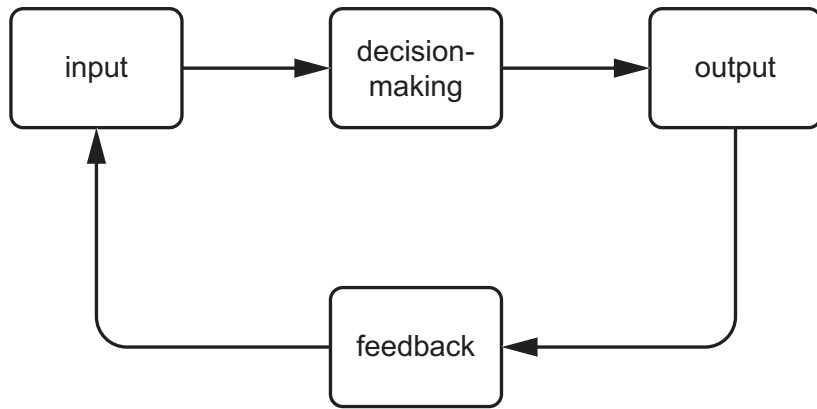
2

.....

[2]

[Total: 7]

3 The diagram shows a basic information processing model.



(a) Explain the role of each stage of the information processing model when performing a named skill in a physical activity.

skill

input

.....

decision-making

.....

output

.....

feedback

.....

[4]

(b) Describe, using an example of a named skill, how the concept of limited channel capacity can affect a performance.

skill

description

.....

.....

.....

[2]

[Total: 6]

4 Diagrams **A**, **B** and **C** show a weight-training exercise being carried out.



A

B

C

(a) Identify and describe the following:

the type of isotonic muscle contraction from **A** to **B**

description

.....

the type of isotonic muscle contraction from **B** to **C**

description

.....

[4]

(b) The diagram shows a performer in a sitting position against a wall.



(i) State the type of muscle contraction taking place in the quadriceps to remain in this position. Describe this type of muscle contraction.

type of muscle contraction

description

.....

[2]

(ii) Describe **two** other examples from different physical activities of when this type of muscle contraction is used.

physical activity 1

example 1

.....

physical activity 2

example 2

.....

[2]

[Total: 8]

5 Describe advantages that media coverage provides for audiences/spectators.

.....
.....
.....
.....
.....
..... [3]

6 (a) Define VO_2 max.

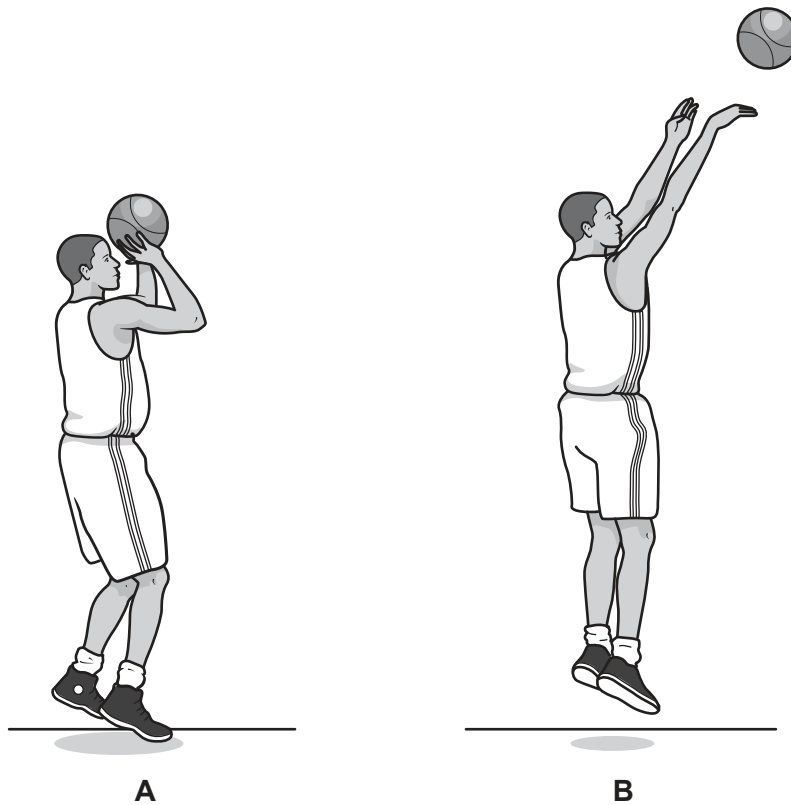
.....
..... [1]

(b) Explain how **three** named factors can affect a performer's VO_2 max.

factor 1
explanation
.....
factor 2
explanation
.....
factor 3
explanation
..... [6]

[Total: 7]

7 The diagrams show a jump shot in basketball.



(a) Identify the main muscle fibre type used in the legs from diagram **A** to diagram **B** to enable the performer to gain maximum height in the jump. Describe **two** characteristics of this type of muscle fibre.

main muscle fibre type

characteristic 1

.....

characteristic 2

.....

[3]

(b) (i) Identify the type of movement taking place at the shoulder from diagram **A** to diagram **B**. Identify the main agonist muscle.

type of movement

main agonist muscle

[2]

(ii) Identify the type of movement taking place at the elbow from diagram **A** to diagram **B**.

..... [1]

(iii) Describe the action of a named agonist and a named antagonist in the movement taking place at the elbow from diagram **A** to diagram **B**.

agonist

action

antagonist

action

[4]

[Total: 10]

8 (a) Explain, using practical examples from a named physical activity, how a named theory links the level of arousal with the quality of performance.

physical activity

name of theory

explanation

.....

.....

.....

.....

.....

[4]

(b) Suggest **two** different causes of anxiety for a sprinter waiting to start an Olympic final.

1

.....

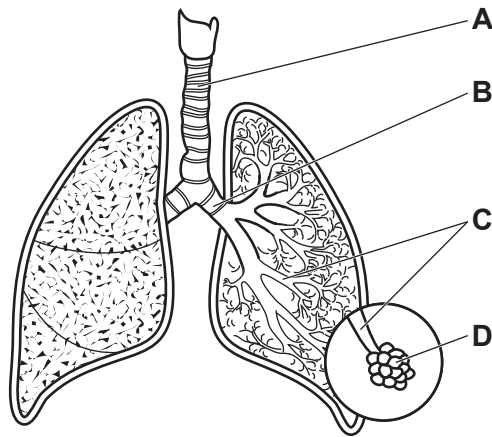
2

.....

[2]

[Total: 6]

9 (a) The diagram shows part of the pathway of air into the body.



(i) Identify the structures labelled **A**, **B** and **C**.

A

B

C

[3]

(ii) Describe **one** function and **two** characteristics of structure **D**.

function

.....

characteristic 1

.....

characteristic 2

.....

[3]

11 Before physical activity performers may warm up and use relaxation techniques.

(a) State **two** phases of a warm up and explain a different physiological benefit of each phase for a performer.

phase 1

benefit

.....

phase 2

benefit

.....

[4]

(b) State **two** relaxation techniques that a performer might use before a physical activity.

1

.....

2

.....

[2]

(c) After exercise performers will need to recover.

Describe how Excess Post-exercise Oxygen Consumption (EPOC) aids recovery after a period of anaerobic exercise.

.....

.....

.....

.....

.....

.....

[3]

[Total: 9]

12 Explain, using named physical activities, different ways performance may be improved from using each of the following types of prohibited performance-enhancing drug.

anabolic steroids

physical activity

explanation

.....

diuretics

physical activity

explanation

.....

beta blockers

physical activity

explanation

.....

[3]

13 Describe a function of each of the following components of blood:

white blood cells

.....

plasma.

.....

[2]

14 There are three stages of learning.

(a) Identify each of the **three** stages of learning. Describe, using examples from a named physical activity, a characteristic of a performer at each stage of learning.

physical activity

stage 1

characteristic

.....

stage 2

characteristic

.....

stage 3

characteristic

.....

[6]

(b) Describe, using examples from a named physical activity, how the following types of guidance can be used:

physical activity

visual

.....

mechanical.

.....

[2]

[Total: 8]

15 Describe, from a named physical activity, an open skill and a closed skill. Justify each of your answers.

physical activity

open skill

justification

.....

closed skill

justification

.....

[4]

16 Weight training is a method of training.

(a) Describe **two** advantages and **two** disadvantages of using this method of training.

advantages

1

.....

2

.....

disadvantages

1

.....

2

.....

[4]

(b) Describe how **two** named principles of overload can be applied to a weight training programme.

principle 1

application

.....

principle 2

application

.....

[4]

[Total: 8]

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