



CANDIDATE
NAME

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8386/12

May/June 2024

No additional materials are needed.

- 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.

- The total mark for this paper is 70.
- The number of marks for each question or part question is shown in brackets [].

[Turn over

- 1 The photograph shows a physical education lesson.



In physical education, students learn a broad range of movement skills and activities.

(a) Describe **four** other characteristics of physical education.

- 1
- 2
- 3
- 4

[4]

- (b)** Explain how schema theory may be used to develop a broad range of movement skills in physical education lessons.

[6]

- (c) Describe the advantages and disadvantages of using verbal guidance to develop skilled performance in physical education lessons.

advantages

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disadvantages

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[4]

- (d) Regular physical education lessons may cause some long-term training effects.

State the effects of long-term training on:

resting heart rate

stroke volume during sub-maximal intensity exercise

heart rate during maximal intensity exercise.

[3]

2 Tennis and badminton are racket sports that involve a performer striking an object with force.

(a) The shoulder joint is important in racket sports.

(i) State the type of synovial joint at the shoulder.

..... [1]

(ii) State the **two** articulating bones at the shoulder joint.

..... and [1]

(iii) State the main agonist that causes flexion at the shoulder joint.

..... [1]

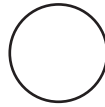
(b) Newton's second law is the law of acceleration. Newton's third law is the law of reaction.

Describe Newton's second and third laws by applying them to a shot in tennis or badminton.

[6]

(c) The diagram represents a tennis ball in flight.

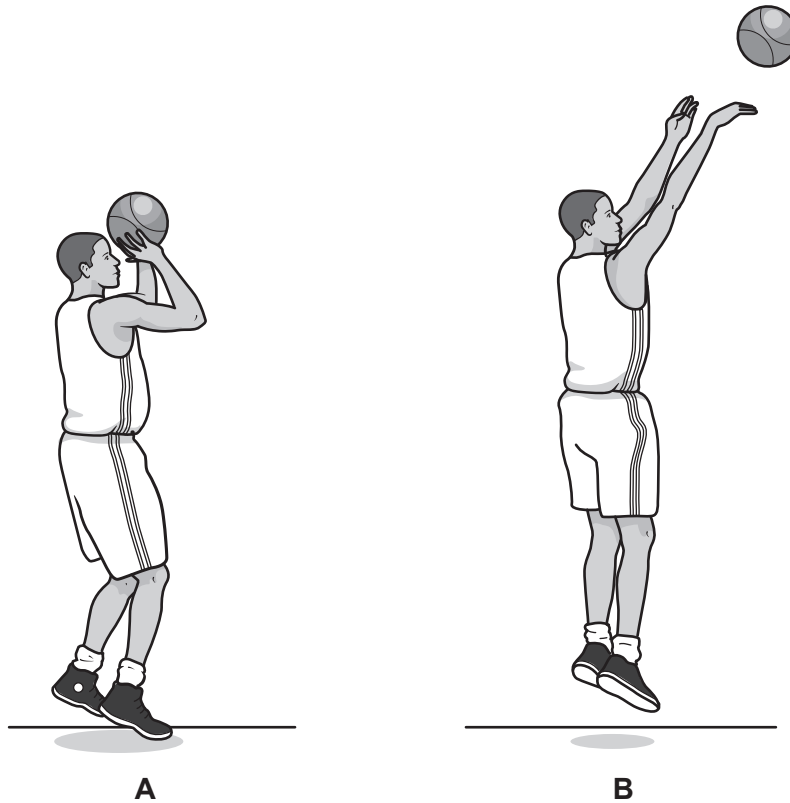
Sketch and label the forces acting on the tennis ball in flight.



direction of motion 

[4]

- 3 (a) The diagrams show a basketball player taking a shot.



- (i) Identify the following at the elbow joint during the movement from **A** to **B**:

type of movement

main agonist

antagonist

type of muscle contraction in the agonist.

[4]

- (ii) Outline **three** factors affecting the stability of the basketball player at position **A**.

1

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2

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3

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[3]

- (b) Sports such as basketball can be used to develop the values of sport.

State the values of sport.

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..... [5]

(c) A basketball coach may use different types of practice during training sessions.

(i) Outline the following types of practice:

part practice

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.....

varied practice.

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[2]

(ii) Describe an example of massed practice and an example of distributed practice from a basketball training session.

massed practice

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distributed practice

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[2]

(iii) Describe the advantages of using massed practice to develop skilled performance in basketball.

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[4]

(d) Outline possible causes of violence between players in a basketball match.

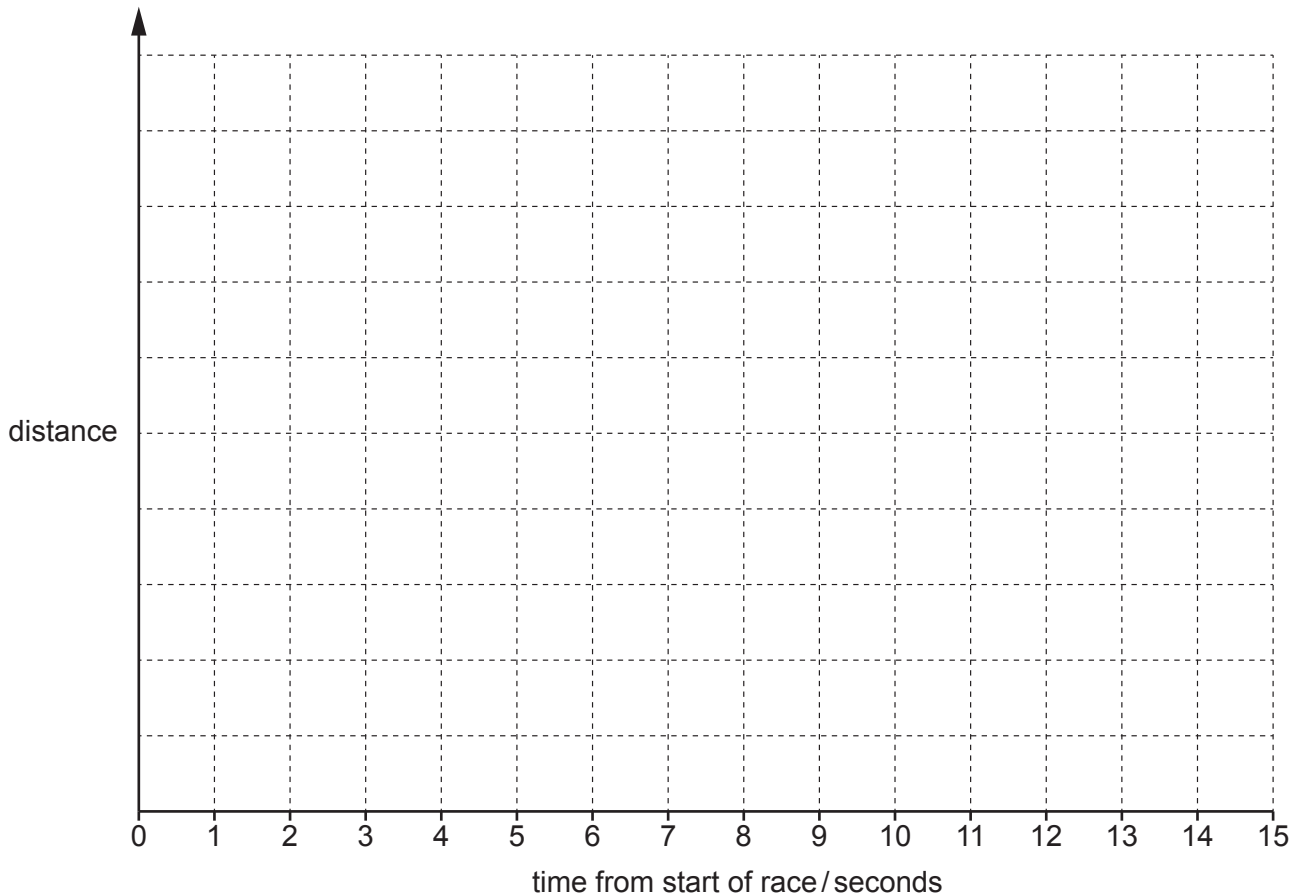
[7]

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- 4 (a) Sketch a simplified distance–time graph for a sprinter running in a straight line.

The graph must show the following:

- an increasing speed between 0 and 3 seconds
- a constant speed between 3 and 8 seconds
- a decreasing speed between 8 and 11 seconds
- the sprinter stationary at the end of the race for 3 seconds.



[4]

- (b) A 100-metre sprinter has a mass of 90 kilograms.
Their average velocity is 8.46 metres per second.

- (i) Calculate the sprinter's average momentum.

Show your working. Give your answer to one decimal place and include appropriate units.

average momentum = [2]

- (ii) Calculate the time taken to run 100 metres at an average velocity of 8.46 metres per second.

Show your working. Give your answer to two decimal places.

time taken = seconds [2]

- 5 Describe gaseous exchange at the lungs.

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..... [5]

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