Rewarding Learning

Centre Number

Candidate Number

General Certificate of Secondary Education
2025

Physical Education

Paper 1

Factors Underpinning Health and Performance

[G9771]

G9771

MONDAY 19 MAY, AFTERNOON

TIME

1 hour 15 minutes.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.
You must answer the questions in the spaces provided.
Do not write outside the boxed area on each page or on blank pages.
Complete in black ink only. **Do not write with a gel pen.**
Answer **all** questions.

INFORMATION FOR CANDIDATES

The total mark for this paper is 100.
Figures in brackets printed down the right-hand side of pages indicate the marks awarded for each question or part question.
Quality of written communication will be assessed in questions **7**, **13(a)** and **14**.

14712.06**R**

1 Read the statements below and select the **correct one** by ticking the box.

(a) The **respiratory** system consists of the:

A	alveoli, bronchioles, heart, muscles	
B	alveoli, bronchi, heart, tendons	
C	alveoli, bronchioles, bronchi, trachea	

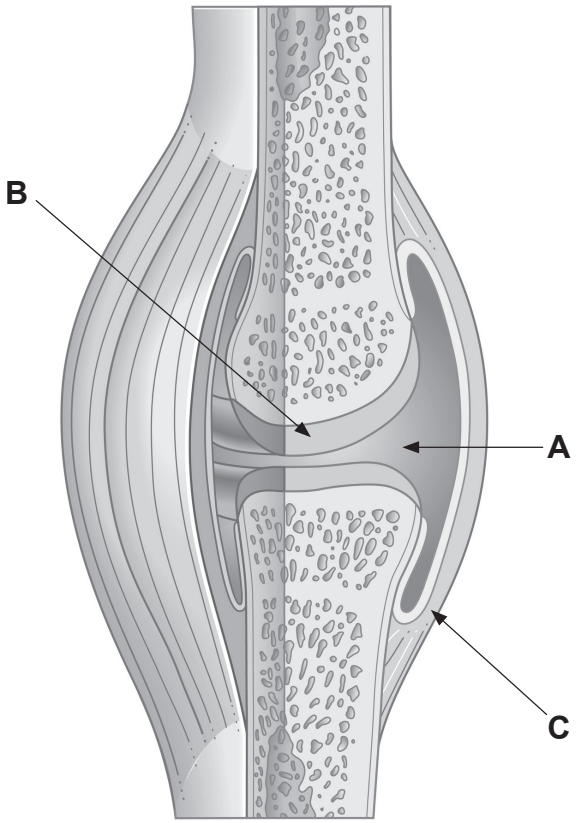
[1]

(b) An **immediate effect** of exercise is:

A	an increase in heart rate	
B	a drop in resting heart rate	
C	an increase in muscle mass	

[1]

2 **Fig. 1** shows the structure of a knee joint.



Source: © Getty Images

Fig. 1

(a) Identify structures **A**, **B** and **C** labelled in **Fig. 1**.

A _____ [1]

B _____ [1]

C _____ [1]

(b) Explain how structure **C** provides stability for a synovial joint.

_____

_____

_____

_____ [2]

[Turn over

3 Match each movement pattern by **drawing a line** to the correct definition. Flexion has been done for you.

Flexion	Movement towards the mid-line of the body
Plantar flexion	Pointing the toes downward
Abduction	The toes are brought closer to the shin.
Adduction	Movement away from the mid-line of the body
Dorsiflexion	Bending the limbs at a joint

[4]

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(Questions continue overleaf)

4 Images **A**, **B**, **C** and **D** show isotonic and isometric contractions taking place in four different activities.

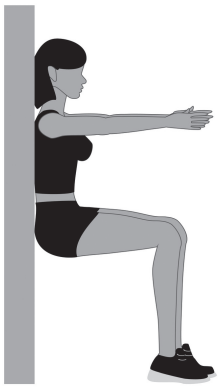

Image A
Wall sit

Image B
Running

Image C
Biceps curl

Image D
Handstand

Source: © Getty Images

(a) Complete **Table 1** by identifying whether the activity requires an **isotonic** or **isometric** contraction.

Table 1

Image	Type of contraction
A: Wall sit	
B: Running	
C: Biceps curl	
D: Handstand	

[4]

(b) State **one** difference between an isotonic and an isometric contraction.

_____

_____

_____

_____ [2]

5 Study **Table 2** which shows the break down of type I (slow twitch) and type II (fast twitch) muscle fibres for two athletes.

Table 2

Athlete	Type I (slow twitch) muscle fibres	Type II (fast twitch) muscle fibres
A	**85%**	**15%**
B	**25%**	**75%**

(a) State and explain an **athletic event** most suitable for **Athlete A**.

Athletic event: _____ [1]

Explanation: _____

_____

_____

_____ [2]

(b) State and explain an **athletic event** most suitable for **Athlete B**.

Athletic event: _____ [1]

Explanation: _____

_____

_____

_____ [2]

6 Explain how the following functions of the **nervous system** help a games player to catch a ball successfully.

Sensory function _____

_____

_____

_____ [2]

Interpretative function _____

_____

_____

_____ [2]

Motor function _____

_____

_____

_____ [2]

7 State **three long-term** effects of aerobic training on the **respiratory** system and explain how each effect can help improve **aerobic endurance**.

Quality of written communication will be assessed in your answer.

[6]

8 Carbohydrates are an important nutrient in a balanced diet.

(a) State **two other nutrients** and describe a different function of each one.

Nutrient 1 _____

Function _____

_____ [2]

Nutrient 2 _____

Function _____

_____ [2]

(b) Explain **two** factors that would account for individuals having different recommended calorie intake.

Factor 1 _____

_____

_____

_____ [2]

Factor 2 _____

_____

_____

_____ [2]

[Turn over

9 **(a)** Define the term **leisure**.

_____

_____ [1]

(b) State an example of an **active** leisure activity.

_____

_____ [1]

(c) State an example of a **passive** leisure activity.

_____

_____ [1]

10 Sport NI is the leading body for the development of sport in Northern Ireland.

State **two** aims of **Sport NI**.

1. _____

_____ [1]

2. _____

_____ [1]

11 State **three** ways the **public sector** can encourage participation in physical activity.

1. _____

_____ [1]

2. _____

_____ [1]

3. _____

_____ [1]

[Turn over

12 **Table 3** shows fitness test results for a Year 12 student who is working to improve **aerobic** and **muscular endurance**.

Table 3

Fitness Test	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
12-minute Cooper run	1450 m	1500 m	1550 m	1600 m	1650 m	1700 m
Sit-up test	35 reps	33 reps	33 reps	32 reps	31 reps	30 reps

(a) Using the data in **Table 3** analyse the fitness test results over the six weeks.

12-minute Cooper run _____

_____

_____

_____ [2]

Sit-up test _____

_____

_____

_____ [2]

(b) Set a **SMART** objective to help this student improve their fitness.

_____

_____

_____

_____ [2]

(c) State **two** targets to help the person achieve the set SMART objective in **(b)**.

1. _____

_____ [1]

2. _____

_____ [1]

[Turn over

13 A school conducted a **physical activity survey** with Year 12 students. The survey asked the following questions:

1. Is your lifestyle sedentary (sitting for long periods of time) or active?
2. How long do you exercise each day?
3. If you exercise, what intensity do you work at?

The results are shown in **Fig. 2**, **Fig. 3** and **Fig. 4**.

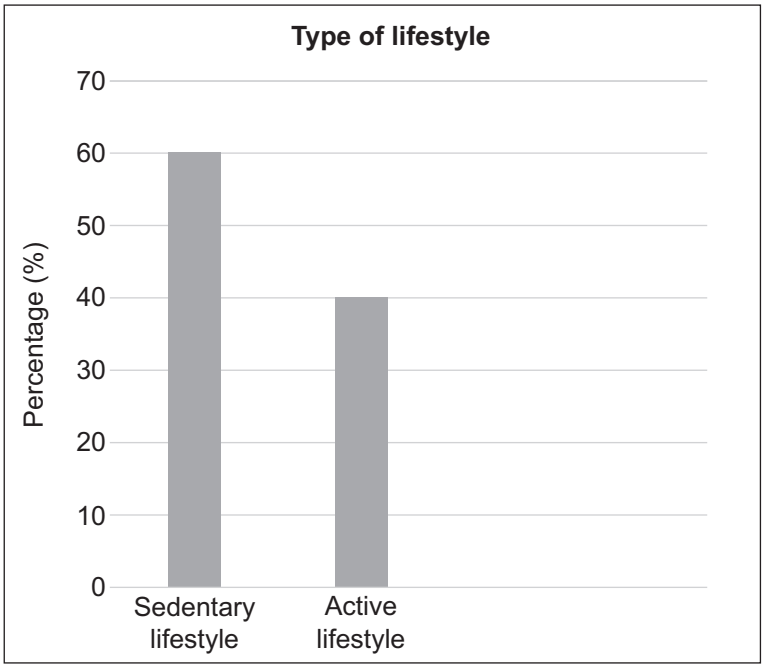

Fig. 2

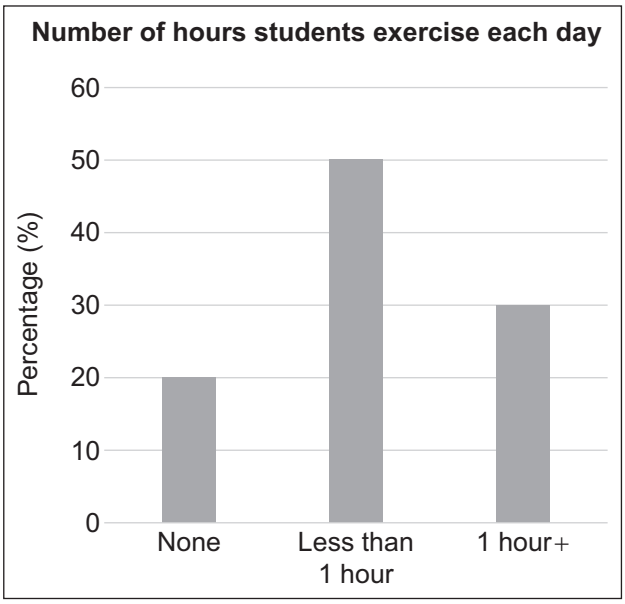

Fig. 3

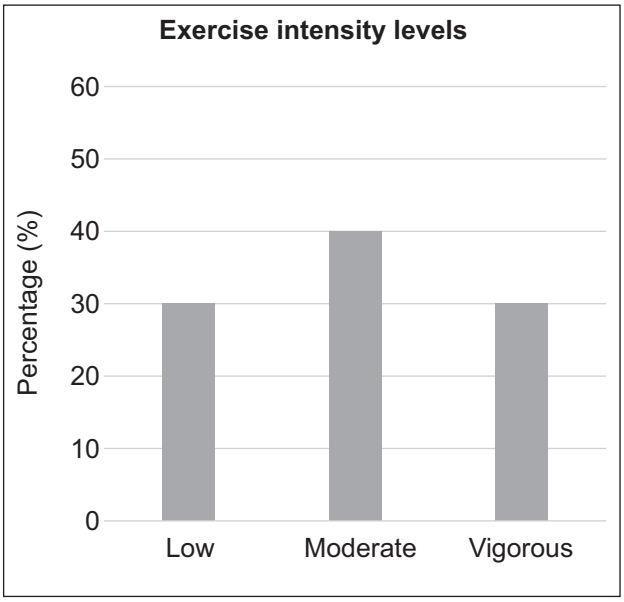

Fig. 4

(a) Using the data in **Fig. 2**, **Fig. 3** and **Fig. 4** compare the student's **type of lifestyle**, the **time** and **intensity** students exercise against the **Public Health Agency's** (PHA) **physical activity guidelines**.

Quality of written communication will be assessed in your answer.

Lifestyle _____

_____

_____

_____

_____

_____

Time _____

_____

_____

_____

_____

_____

Intensity _____

_____

_____

_____

_____

_____ [9]

[Turn over

(b) State **three practical changes** students could make to meet the PHA's physical activity guidelines.

1. _____

_____ [1]

2. _____

_____ [1]

3. _____

_____ [1]

(c) Further analysis of the survey results showed females spent less time exercising daily than males.

State **three** reasons why activity levels for females are lower than males.

1. _____

_____ [1]

2. _____

_____ [1]

3. _____

_____ [1]

14 Explain how each factor stated can help lead to **continued involvement** in physical activities and sports.

Quality of written communication will be assessed in your answer.

Mental Health _____

_____

_____

_____

_____

_____

Facilities _____

_____

_____

_____

_____

_____

Family _____

_____

_____

_____

_____

_____ [9]

[Turn over

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15 The local youth club held a fun run to raise money for club equipment.

Table 4 shows the financial report on the **expected income** at the planning stage and the **actual income** after the event was completed.

Table 4

Expected income at the planning stage		**Actual income after the event**	
Grant from local council	£2000	Grant from local council	£2000
Entry fee £1 per runner	£300	Entry fee £1 per runner	£150
Total	**£2300**	**Total**	**£2150**

(a) Study **Table 4** and suggest **two** ways in which the **income** could be increased at the planning stage.

1. _____

_____ [1]

2. _____

_____ [1]

[Turn over

Table 5 shows the financial report on the **expected expenditure** at the planning stage and the **actual expenditure** after the event was completed.

Table 5

Expected expenditure at the planning stage		**Actual expenditure after the event**	
Wages for staff Marshals × 8 Carpark attendants × 2	 £320 £80	**Wages for staff** Marshals × 8 Carpark attendants × 2	 £320 £80
Insurance	£300	Insurance	£400
Equipment (tape/cones)	£100	Equipment (tape/cones)	£100
Advertising	£200	Advertising	£200
Water	£100	Water	£100
Certificates for runners	£150	Certificates for runners	£150
Total	**£1250**	**Total**	**£1350**
Expected profit (expected income – expected expenditure)	**£1050**	**Actual profit** (actual income – actual expenditure)	**£800**

(b) Study the data in **Table 5** and suggest **four** ways the **expenditure** could be reduced to increase the actual profit.

1. _____

_____ [1]

2. _____

_____ [1]

3. _____

_____ [1]

4. _____

_____ [1]

[Turn over

16 You are responsible for organising and running a badminton **knockout** tournament for **eight students** of **similar playing ability**. The tournament will take place in the sports hall.

(a) Create the **draw** for the knockout tournament from the **first round through to the final**.

[6]

(b) Explain how **third place** will be decided in the knockout competition.

_____

_____ [1]

(c) State **two** examples of how you would use the **skills of communication** and **organisation** to effectively plan and run the tournament.

Communication _____

_____ [1]

Communication _____

_____ [1]

Organisation _____

_____ [1]

Organisation _____

_____ [1]

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For Examiner's use only	
Question Number	Marks
1	
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Examiner Number

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