



General Certificate of Secondary Education
2019

Centre Number

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Candidate Number

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Physical Education

Paper 1

Factors Underpinning Health
and Performance

MV18

[G9771]

WEDNESDAY 15 MAY, MORNING

Time

1 hour 15 minutes, plus your additional time allowance.

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 on blank pages.

Complete in black ink only.

Answer **all** questions.

Information for Candidates

The total mark for this paper is 100.

Figures in brackets printed at the end of each question indicate the marks awarded for each question or part question.

Quality of written communication will be assessed in questions **6, 9 and 15**.

1 Fig. 1 shows the location of four different synovial joints.

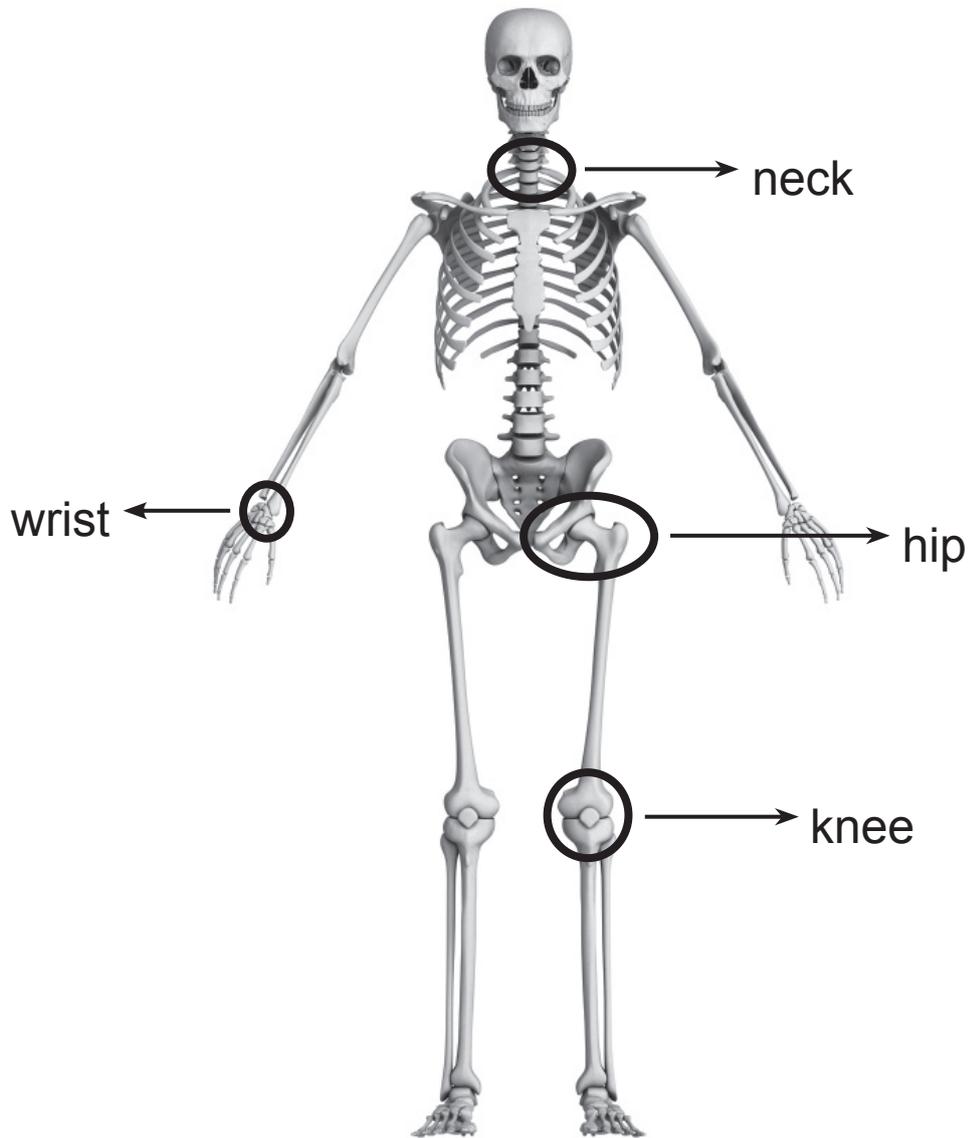


Fig. 1

Identify the **types** of synovial joint circled in **Fig. 1**.

[1 mark for each]

neck _____

hip _____

wrist _____

knee _____

2 Explain, using an example, how the skeleton provides protection during physical activity. [2 marks]

3 (a) State which part of a synovial joint produces synovial fluid. [1 mark]

Synovial fluid is produced by the _____

(b) Explain how the production of synovial fluid will help an athlete's movement. [2 marks]

4 Explain the action of the antagonistic muscle pairs as a person performs a biceps curl. [3 marks]

- 5 Study **Fig. 2** which shows the relationship between type I (slow twitch) and type II (fast twitch) muscle fibres for three athletes. Answer the questions that follow.

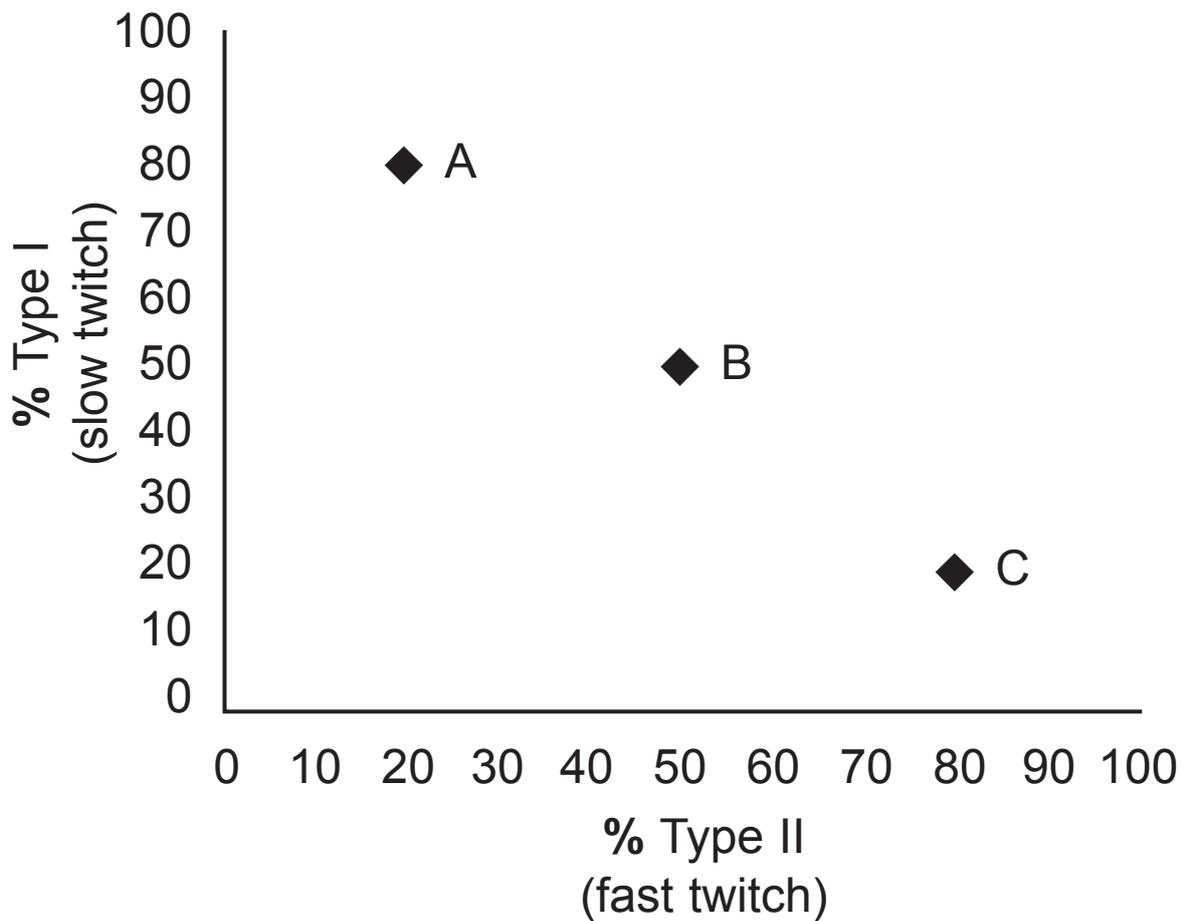


Fig. 2

- (a) State the athlete most likely to be a marathon runner.
[1 mark]

The marathon runner is athlete _____

(b) Use **specific** evidence from **Fig. 2** to justify your choice.
[2 marks]

(c) State the athlete most likely to be a shot-putter.
[1 mark]

The shot-putter is athlete _____

(d) Use **specific** evidence from **Fig. 2** to justify your choice.
[2 marks]

7 The respiratory system plays a crucial role for an athlete in sustaining activity.

(a) State one function of the trachea. [1 mark]

(b) State one function of the alveoli. [1 mark]

8 Describe the process of inspiration when a person is resting. [4 marks]

- 10** Study the example in **Table 1** of an athlete performing a sprint start. State the function of the nervous system at each stage. [3 marks]

Table 1

Stage	Performing a sprint start	Function of the nervous system
1	You are lining up at the start of the 100 m race and you hear the starter's pistol.	
2	Your central nervous system processes the sound and makes decisions – pistol means go.	
3	You use your muscles to move your arms and legs to sprint.	

11 (a) In the weeks leading up to a major competition a student feels overwhelmed by the pressure to perform.

State **two** negative coping strategies the student could use which could result in neglecting mental well-being.

[1 mark for each]

1. _____

2. _____

(b) The Public Health Agency recommends taking the following five positive coping steps to help maintain and improve well-being.

Connect

Be active

Take notice

Keep learning

Give

Give an example of how a person could perform **two** of these coping steps. [1 mark for each example]

Coping step 1 _____

Example _____

Coping step 2 _____

Example _____

12 Some adults perform little or no physical activity. They sit about for much of the day reading, watching television, playing video games, or using a mobile phone.

(a) What type of lifestyle are these people leading?
[1 mark]

(b) State **two** risks to their health if they continue this type of lifestyle. [1 mark for each]

1. _____

2. _____

(c) An adult would like to become physically fit to improve health.

Complete **Table 2** below to show the minimum recommended guidelines of physical activity for **adults**.
[3 marks]

Table 2

	Recommended guidelines of physical activity for adults
Minimum frequency per week	
Minimum minutes per week	
Minimum intensity	

13 A student wants to join Teen Fit classes at the local gym to improve physical fitness.

Explain **one** procedure the fitness instructor should follow with the student before allowing them to take part in the class for the first time. [2 marks]

14 Some athletes illegally take performance-enhancing drugs without regard to possible side effects or negative consequences.

(a) Give **two** reasons, other than to improve performance, why athletes take performance-enhancing drugs. [1 mark for each]

1. _____

2. _____

(b) State **three** possible negative consequences on the athlete of long-term use of performance-enhancing drugs. [1 mark for each]

1. _____

2. _____

3. _____

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(Questions continue overleaf)

16 Study the sleep audit of a GCSE PE student in **Table 3**.
Answer the questions that follow.

Table 3

	Hours slept	Quality of sleep	Nap periods
Monday	Sleep at: 22:30 Woke at: 07:30 Total: 9 hours	Good <ul style="list-style-type: none"> • No phone 1 hour before sleep • Cup of tea 30 minutes before bed 	None
Tuesday	Sleep at: 22:30 Woke at: 07:30 Total: 9 hours	Good <ul style="list-style-type: none"> • Cup of tea 10 minutes before bed • No phone 1 hour before sleep 	None
Wednesday	Sleep at: 22:30 Woke at: 07:30 Total: 9 hours	Not very good <ul style="list-style-type: none"> • Stressed about controlled assessments • No phone 1 hour before sleep 	None
Thursday	Sleep at: 22:30 Woke at: 07:30 Total: 9 hours	Very good <ul style="list-style-type: none"> • No phone 1 hour before sleep 	None
Friday	Sleep at: 00:00 Woke at: 07:30 Total: 7 $\frac{1}{2}$ hours	Not good <ul style="list-style-type: none"> • Cup of tea 30 minutes before bed • Browsed on my phone throughout the night 	None

Saturday	Sleep at: 01:00 Woke at: 08:00 Total: 7 hours	Not good <ul style="list-style-type: none"> • Cup of tea 30 minutes before bed • Browsed on my phone throughout the night 	None
Sunday	Sleep at: 22:30 Woke at: 07:30 Total: 9 hours	Good <ul style="list-style-type: none"> • Room too hot, woke to open window • Cup of tea 30 minutes before bed 	None

(a) Compare the sleep audit with government recommendations to identify **two strengths** of the student's sleeping pattern. [1 mark for each]

1. _____

2. _____

(b) Compare the student's sleep audit with government recommendations to identify **two areas for improvement**. [1 mark for each]

1. _____

2. _____

(c) Set a SMART objective for the student to promote better sleeping habits. [2 marks]

(d) In the student's sleep action plan what **two** targets could be set to help achieve the SMART objective? [1 mark for each]

1. _____

2. _____

17 State **three** examples of how parents could have a negative influence on their children's participation in sport.
[1 mark for each]

1. _____

2. _____

3. _____

18 People with a disability are less than half as likely to participate in sports than non-disabled people.
(DCAL Continuous Household Survey 2014/15.)

Describe **two** ways in which Disability Sport NI promotes equality of access to sport for people with a disability in Northern Ireland. [2 marks for each]

1. _____

2. _____

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(Questions continue overleaf)

19 Study the information in **Table 4** below regarding two leisure organisations.

Answer the questions that follow.

Table 4

Organisation 1		Organisation 2	
Belfast Leisure is funded and controlled by the local council.		The Little Gym is owned and run by four personal trainers.	
Opening hours: Mon to Fri 09.00–18.30 Sat and Sun 10.00–16.00		Opening hours: Mon to Sat 06.30–22.00 Sun 08.00–18.00	
Membership: £32 per month, Concessionary rate: £19 per month		Membership: £35 per month	
Mon–Fri timetable: 09.30 Spin 10.30 Yoga 12.30 Body Pump 16.30 Circuits	Sat–Sun timetable: 10.00 Spin 11.00 Yoga	Mon–Sat timetable: 06.45 Spin 07.45 Bootcamp 10.30 Yoga 11.30 Body Pump 17.30 Spin 18.00 Circuits 19.00 HITT 20.00 Body Combat 20.30 Pilates	Sun timetable: 08.30 HITT 10.00 Body Pump 11.00 Spin 15.00 Body Balance

- (a) State the sector that each leisure organisation belongs to and use specific evidence from **Table 4** to justify your choice. [2 marks for each]

Organisation 1 belongs to the _____

Organisation 2 belongs to the _____

- (b) Using **specific** evidence from **Table 4**, explain which of the leisure organisations would be most suitable for a person who works Monday to Friday 09.00–17.30. [2 marks]

- (c) Using **specific** evidence from **Table 4**, explain which of the leisure organisations would be most suitable for a person who receives income support. [2 marks]

20 You have been asked to organise a 7-a-side football knockout competition in February for the local primary schools. The competition will run from 09.30–13.00 with eight primary schools entering. Your school will provide two pitches and equipment at no cost. The cost of running the competition includes:

- | | |
|--|-----|
| • Two referees | £40 |
| • Trophy for winners and runners-up medals | £25 |
| • Refreshments | £15 |

(a) Use **Table 5** opposite to create the draw and timetable for the 7-a-side football competition.

You must include:

- The **order of play** to identify overall winner and runners-up (label schools A–H)
- The **pitch each game will be played on**
- The **timeline** for the competition
- The **duration of play time for each game**

[8 marks]

Table 5

Time	Event
09.30–10.00	Arrival and team registration
12.30–13.00	Presentation of medals

(b) Calculate the entry fee per team with the aim to break even. [1 mark]

The entry fee per team will be _____

(c) As the event manager it is important to plan for unforeseen problems, other than hazards, which could threaten the success of the competition.

Identify **three** problems that could arise and the action you would put in place to overcome this.

[1 mark for each problem and 1 mark for each action]

1. Problem _____

Action _____

2. Problem _____

Action _____

3. Problem _____

Action _____

This is the end of the question paper

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Question Number	Marks
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Total Marks	
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Examiner Number

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