

OXFORD CAMBRIDGE AND RSA EXAMINATIONS  
GCSE (9–1)  
J587/01

PHYSICAL EDUCATION  
Physical factors affecting  
performance

WEDNESDAY 16 MAY 2018: Morning  
TIME ALLOWED: 1 hour  
plus your additional time allowance  
MODIFIED ENLARGED 24pt

First name						Last name					
Centre number						Candidate number					

No additional material is required for this  
Question Paper

READ INSTRUCTIONS OVERLEAF



## **INSTRUCTIONS**

**Write your name, centre number and candidate number in the boxes on the front page. Please write clearly and in capital letters.**

**Use black ink.**

**Answer ALL the questions.**

**Read each question carefully. Make sure you know what you have to do before starting your answer.**

**Write your answer to each question in the space provided. If additional space is required, you should use the lined page(s) at the end of this booklet. The question number(s) must be clearly shown.**

## **INFORMATION**

**The total mark for this paper is 60.**

**The marks for each question are shown in brackets [ ].**

**Quality of extended response will be assessed in the question marked with an asterisk (\*).**

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## SECTION A

Answer ALL the questions.

1 Describe the function of alveoli.

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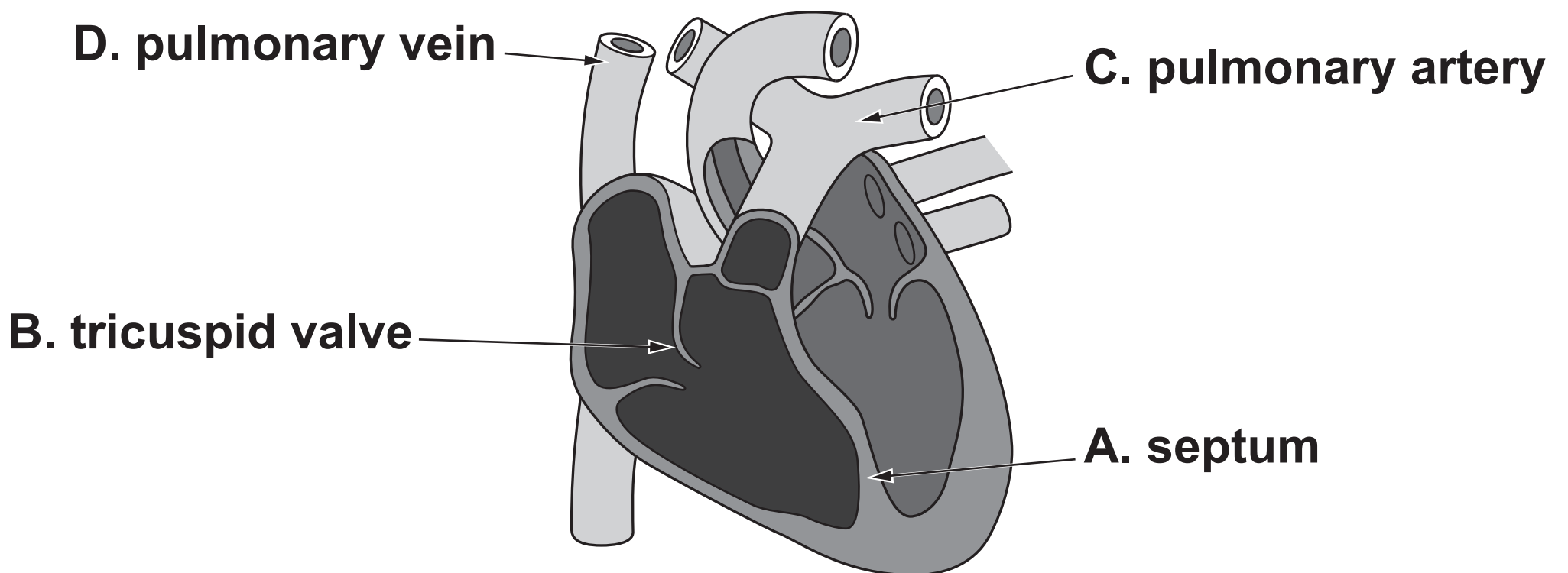
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[2]

2 Fig. 1 below shows a diagram of the heart.

Fig. 1



Identify the part of the heart that is labelled incorrectly in Fig. 1.

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[1]

**3 Give a definition of a synovial joint.**

\_\_\_\_\_ **[1]**

**4 A rugby player will use their shoulder joint when making a tackle.**

**Name the TWO articulating bones in the shoulder joint that are at risk of injury during a rugby tackle.**

**1.** \_\_\_\_\_

**2.** \_\_\_\_\_ **[2]**

**5 Reversibility is a principle of training.**

**Using a practical example, explain what is meant by the term ‘reversibility’.**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ **[2]**

6 Which ONE of the following shows the correct distances for the multi-stage fitness test and the test for speed?

Put a tick (✓) in the box next to the correct answer. [1]

A 30 m for the multi-stage fitness and 25 m for the speed test ☐

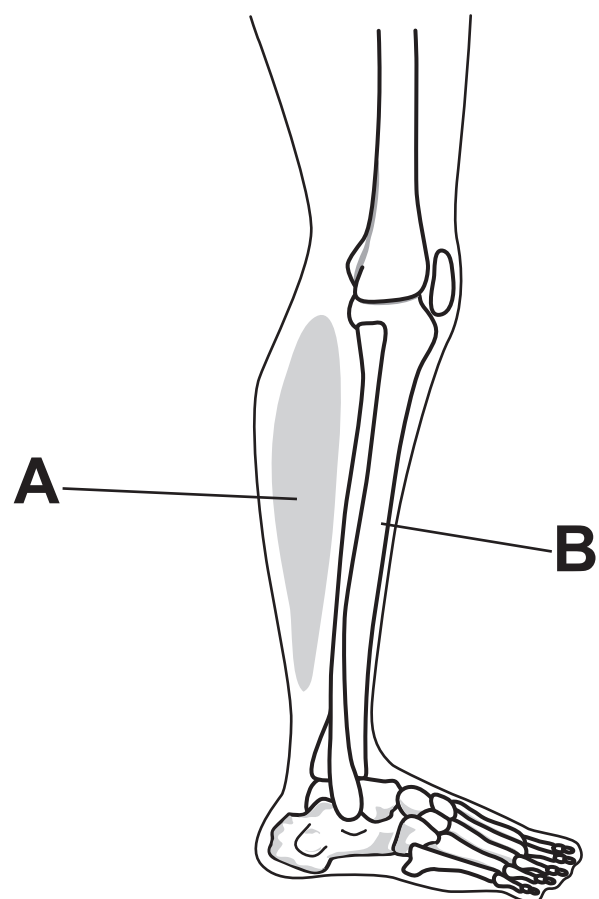
B 20 m for the multi-stage fitness and 25 yards for the speed test ☐

C 20 m for the multi-stage fitness and 30 m for the speed test ☐

D 30 m for the multi-stage fitness and 30 yards for the speed test ☐

7 Fig. 2 shows a diagram of the lower leg.

Fig. 2



Identify muscle A and bone B.

(i) Muscle A: \_\_\_\_\_ [1]

(ii) Bone B: \_\_\_\_\_ [1]

**8 Identify TWO potential hazards in a swimming pool.**

1. \_\_\_\_\_
  2. \_\_\_\_\_
- [2]**

**9 Using practical examples, explain the difference between the transverse and longitudinal axes of rotation.**

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**[3]**

**10 Give a practical example where aerobic endurance is important in sport.**

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**[1]**

**11 (a) Circuit training is a training method that consists of a series of exercise stations.**

**Describe ONE other feature of circuit training.**

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[1]



**(b) Design a simple circuit training session to overload the upper body by completing the diagram below, placing one of the named exercises in each station. [1]**

**Bicep curls**

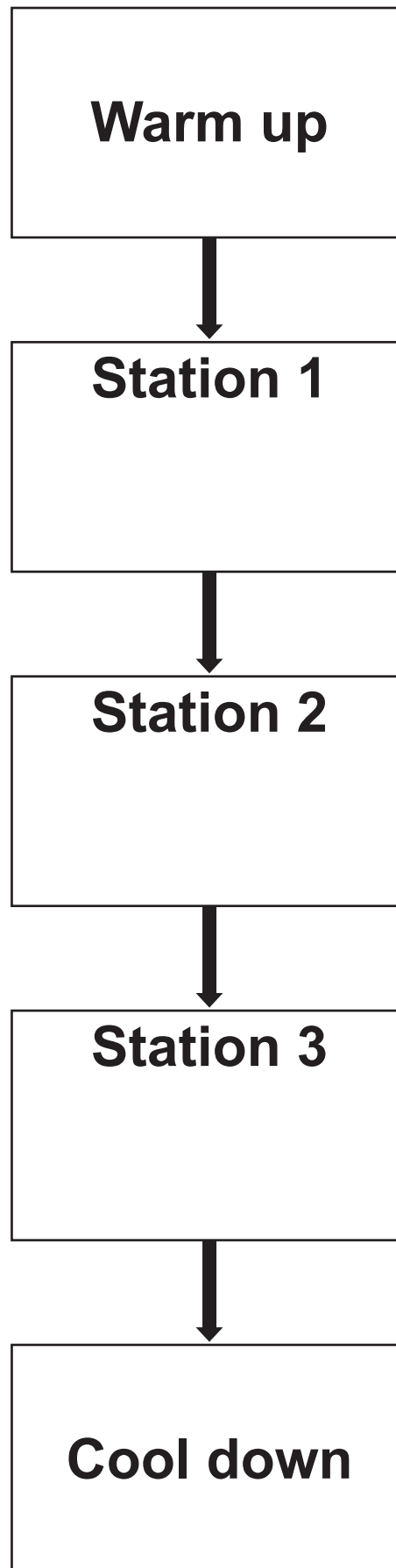
**Lunges**

**Squats**

**Press ups**

**Pull ups**

**Step ups**



**12 Cartilage plays an important role in the skeletal system.**

**Assess how cartilage helps a marathon runner during performance.**

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**[2]**

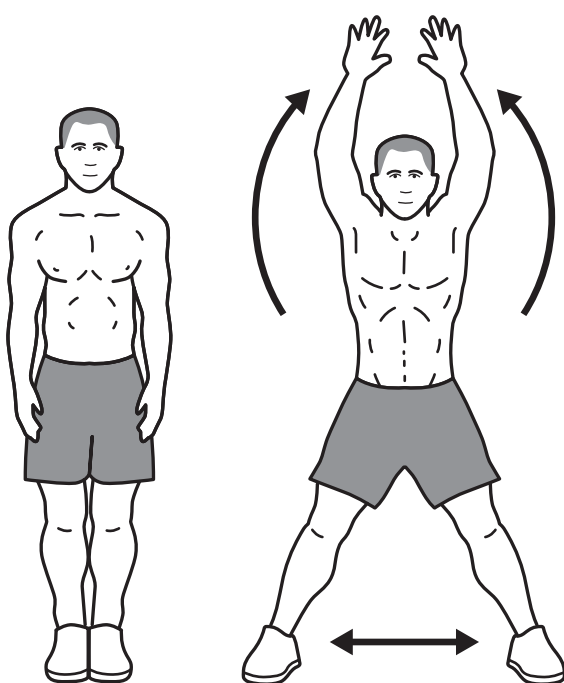
**13 Which class of lever will a weightlifter be using when performing a bicep curl?**

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**[1]**

**14 The performer in Fig. 3 below has performed a movement that has passed through the frontal plane.**

**Fig. 3**



**Is this statement true or false? Draw a circle around your answer. [1]**

**True**

**False**

**15 Which one of the following statements is false?**

**Put a tick (✓) in the box next to the correct answer. [1]**

**A Fixators help stabilise a joint and prevent unnecessary movement** ☐

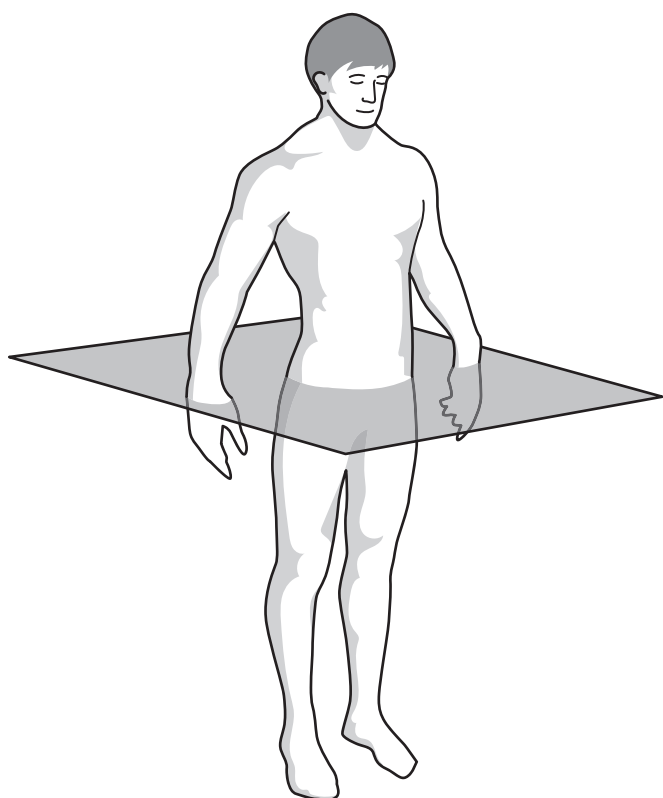
**B Most lever systems in the body are 3<sup>rd</sup> class** ☐

**C A common hazard in rugby is concussion** ☐

**D Fartlek training improves speed and endurance** ☐

**16 Fig. 4 shows a diagram that highlights one plane of movement.**

**Fig. 4**



**Name the movement plane highlighted in Fig. 4 above.**

\_\_\_\_\_ **[1]**

**17 Describe a suitable cool down for a dancer.**

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**[2]**

**18 Give a practical example of how an appropriate level of competition can prevent injury to a performer in a sport or physical activity.**

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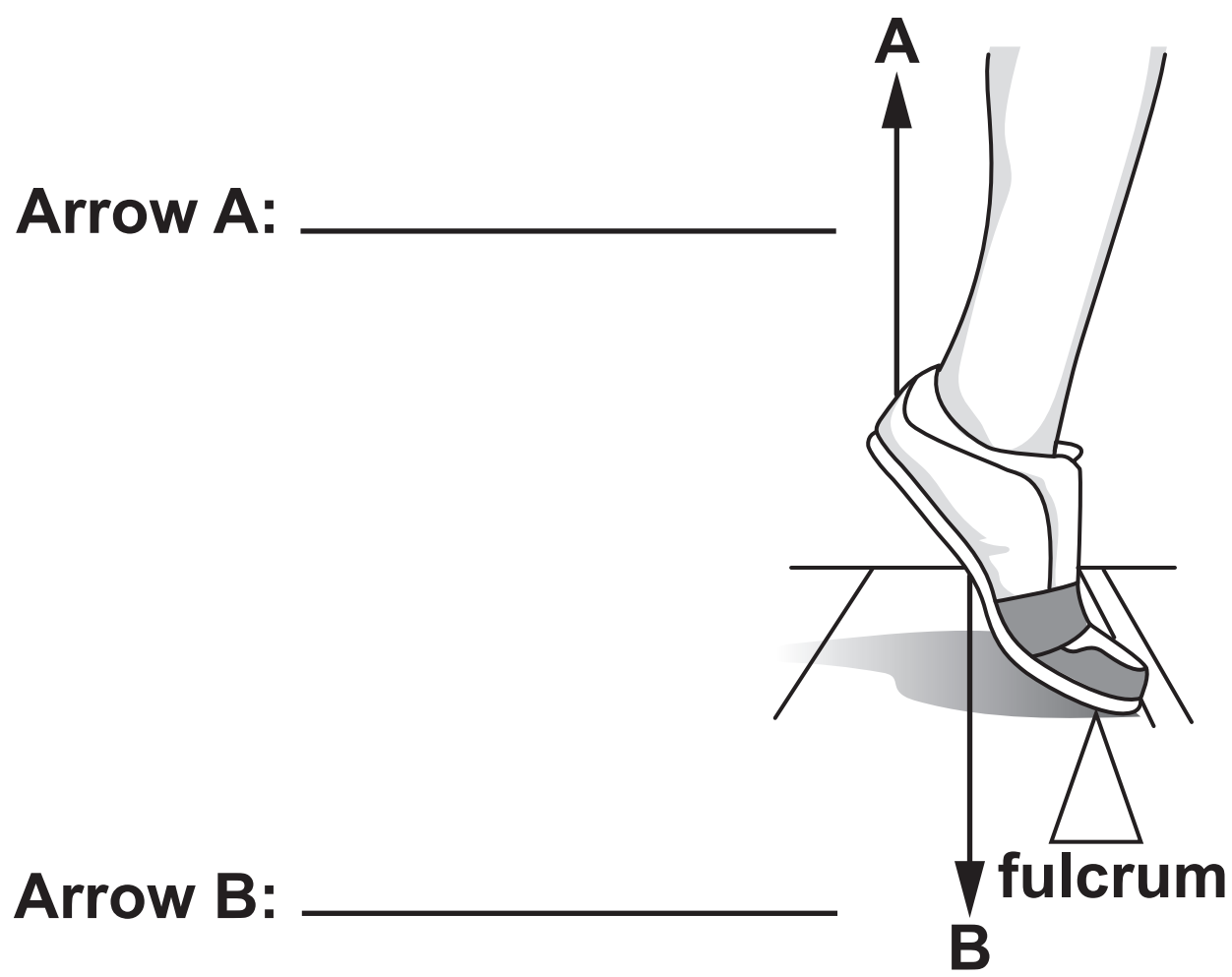
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**[1]**

19 Fig. 5 shows a picture of the foot of a long jumper taking off.

Label Arrows A and B to correctly identify the components of this lever system. [1]

Fig. 5



20 The human heart is part of a single-circulatory system.

Is this statement true or false? Draw a circle around your answer. [1]

True

False

**Section B**

**Answer all the questions.**

**21 (a) Explain the short term effects on the heart and the blood of a swimmer performing a 100 m front crawl.**

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**[5]**

**(b) A swimmer who undergoes a six month training programme will experience muscular hypertrophy.**

**(i) What is meant by the term ‘muscular hypertrophy’?**

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**[1]**

**(ii) Describe other muscular benefits the six month training programme might have for the swimmer.**

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**[4]**

**22 (a) Reaction time and speed are important fitness components required for a 100 m sprinter.**

**Define the fitness components of reaction time and speed and explain their importance to a 100 m sprinter.**

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**[4]**

**(b)\*Before an athlete participates in a sprint they will complete a warm up to prepare their body and mind for the race.**

**Using practical examples, describe the components of a warm up and evaluate the different mental preparation techniques that could be used to fully prepare the athlete for the race. [6]**

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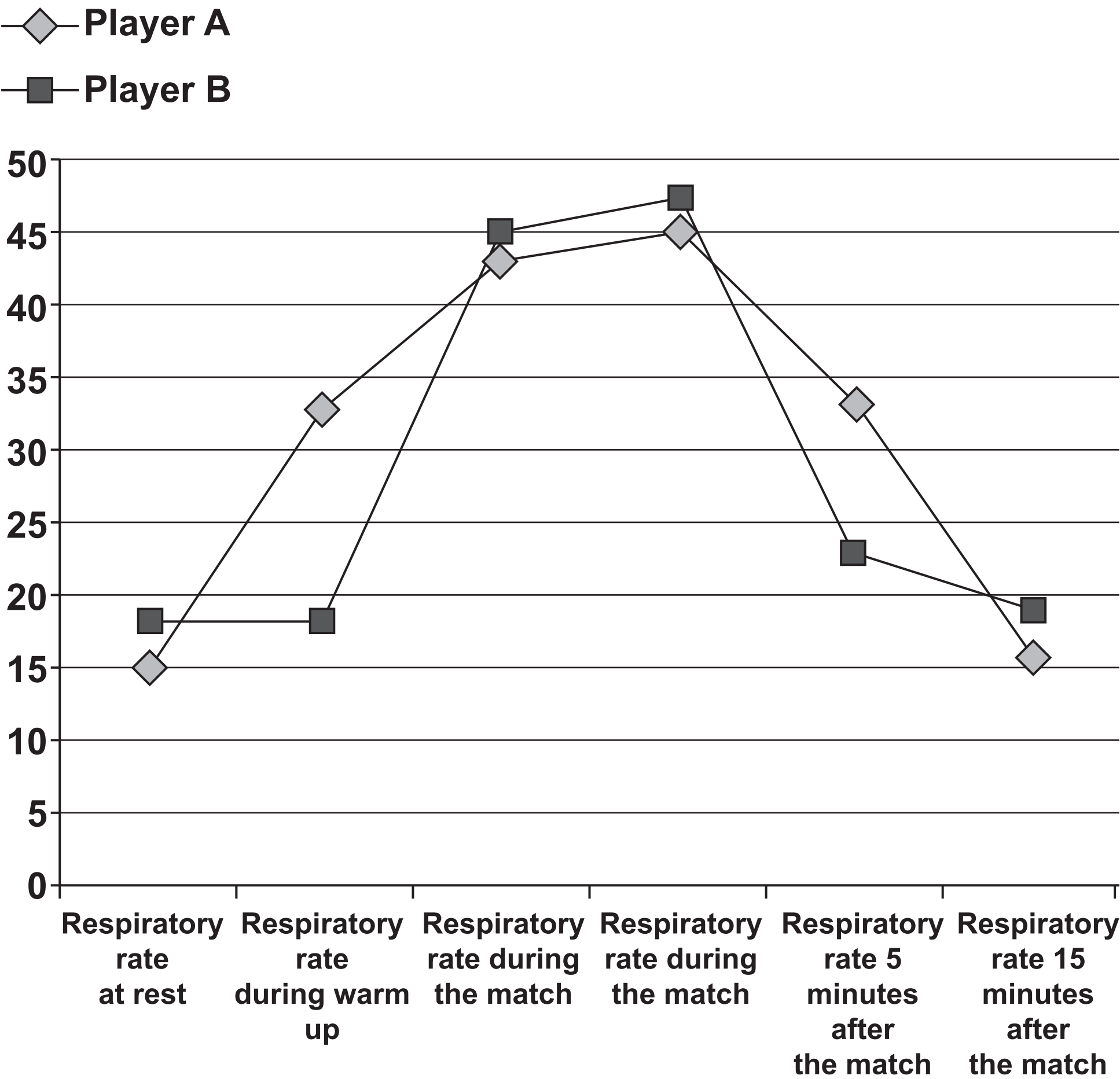
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[illegible]

23 Fig. 6 below shows the respiratory rate for two hockey players before, during and after a match.

Fig. 6



**(a) Using the information in Fig. 6, analyse how the two players' respiratory rates compare and why they may be different.**

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[3]

**(b) Explain the role of respiratory muscles during inspiration while player A is performing in the hockey match.**

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[4]

**(c) Analyse the effects that lactic acid could have on the performance and recovery of the hockey players.**

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**[3]**

**END OF QUESTION PAPER**

### ADDITIONAL ANSWER SPACE

**If additional space is required, you should use the following lined page(s). The question number(s) must be clearly shown in the margin(s).**

This image shows a blank sheet of white paper with horizontal ruling lines. A single vertical line runs down the left side, creating a narrow margin. There are 20 horizontal lines in total, evenly spaced across the page. The lines are thin and black.











