



Oxford Cambridge and RSA

**Wednesday 15 May 2019 – Morning**

**GCSE (9–1) Physical Education**

**J587/01 Physical factors affecting performance**

**Time allowed: 1 hour**



No additional material is required for this Question Paper



Please write clearly in black ink. **Do not write in the barcodes.**

Centre number

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Candidate number

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First name(s)

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Last name

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**INSTRUCTIONS**

- 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 (\*).
- This document consists of **16** pages.

**Section A**

Answer **all** the questions.

1 A warm up prepares the body for physical activity by increasing the temperature of the muscles.

Describe **two** other physical benefits a warm up has on the muscular system.

1. ....

2. ....

[2]

2 (a) State the function of valves in the heart.

..... [1]

(b) The bicuspid and tricuspid valves are structures in the heart.

Name **one** other valve in the heart.

..... [1]

3 Identify a synovial joint in the body that allows more than two types of movement.

..... [1]

4 Name the main muscle group used, and the plane of movement passed through, while performing a sit up.

(i) Muscle group:

..... [1]

(ii) Plane of movement:

..... [1]

5 Fig. 5 shows the performance of a gymnastic move.

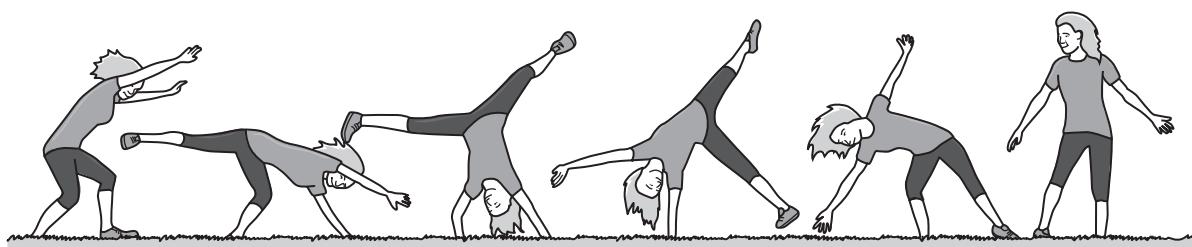


Fig. 5

Name the axis of rotation in Fig. 5.

..... [1]

6 Complete the following statement.

The action of a biceps curl is an example of a ..... class lever. [1]

7 Fig. 7 shows a diagram that highlights one plane of movement.

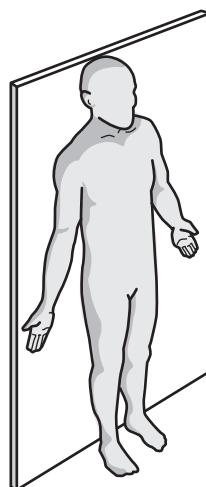


Fig. 7

(a) Name the movement plane highlighted in Fig. 7.

..... [1]

(b) Identify a sporting skill that passes through the movement plane in Fig. 7.

..... [1]

8 Which one of the following describes the correct pathway of air through the respiratory system?

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

- A Mouth, trachea, bronchiole, bronchi, alveoli
- B Nose, trachea, bronchi, bronchiole, alveoli
- C Mouth, trachea, alveoli, bronchi, bronchiole
- D Nose, bronchi, bronchiole, trachea, alveoli


[1]

9 A wet and slippery floor in a sports hall is a potential hazard.

Identify **two** other hazards in a sports hall.

1. ....

2. ....

[2]

10 Power is an important component of fitness required in many sports and can be measured by using the standing broad jump test.

Name another suitable test for power and describe **one** feature of this test.

(i) Name of test:

..... [1]

(ii) Feature of test:

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

11 Describe the following key components of a warm up using a practical example for each.

(i) Mobility:

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

(ii) Dynamic movements:

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

12 A cricket player has just caught a hard ball.

Name a bone in the hand that is at risk from injury as a result of the impact of the ball being caught.

..... [1]

13 Flexion and extension are two types of movement which are involved to allow circumduction around a joint.

Name the other **three** movements needed for circumduction around a joint to occur.

1. ....

2. ....

3. ....

[1]

14 Describe **one** difference between aerobic and anaerobic exercise.

Give a practical example of each type of exercise.

Difference: .....

.....  
.....

Example of aerobic exercise: .....

Example of anaerobic exercise: ..... [2]

15 Define stroke volume.

..... [1]

16 During exercise cardiac output changes.

(i) Explain what is meant by the term cardiac output.

..... [1]

(ii) State how cardiac output changes during exercise.

..... [1]

17 Describe the role of tendons during physical activity.

..... [1]

18 (a) Describe capillarisation.

..... [1]

(b) Capillarisation is a short term effect of exercise.

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

True

False

[1]

19 Name the type of interval training used when a performer alternates between short bursts of speed followed by periods of recovery.

..... [1]

20 Give **one** example of personal protective equipment that will protect the cranium.

..... [1]

## Section B

Answer **all** the questions.

21 (a) **Fig. 21.1** shows the national norms for the sit and reach test for 16–19 year olds.

Gender	Excellent	Above average	Average	Below average	Poor
Male	>14	11–14	7–10	4–6	<4
Female	>15	12–15	7–11	4–6	<4

**Fig. 21.1**

**Fig. 21.2** shows a set of sit and reach results for a GCSE PE class.

Name	Gender	Age	Measurement
Emma	Female	16	15.5
Abdul	Male	16	9.5
Olivia	Female	16	11
Noah	Male	16	12
Farah	Female	16	16
Liam	Male	16	3.5

**Fig. 21.2**

(i) Name the fitness component that is measured using the sit and reach test.

..... [1]

(ii) Using the values in **Fig. 21.1** state how many students in **Fig. 21.2** are in the average range.

..... [1]

(iii) Analyse the results in **Fig. 21.2** and suggest reasons for the differences between students who were scored as excellent compared to those who were given a poor rating.

.....  
.....  
.....  
.....  
.....  
.....

..... [2]

**(b)\*** Specificity is one principle of training that would allow a gymnast to focus on relevant exercises suited to their routine.

Using practical examples, explain the use of other principles of training in a gymnastic training programme.

Evaluate reasons why some gymnasts may use beta blockers within their training programme.

. [6]

10

22 (a) Describe, using a sporting example for each, how the skeleton allows the following functions.

Protection:

.....  
.....  
.....

Movement:

.....  
.....  
.....

[2]

(b)

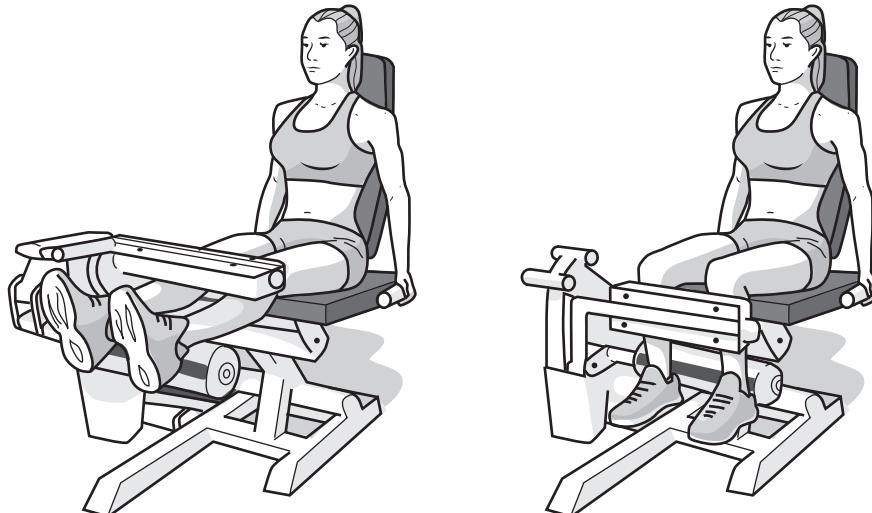


Fig. 22

(i) Name the leg muscle that contracts during the extension phase of the exercise in Fig. 22.

..... [1]

(ii) Explain how the pair of muscles at the knee work together during the extension phase of the exercise in **Fig. 22**.

[2]

(iii) Name the **two** articulating bones at the hip during the movement in **Fig. 22**.

1. ....
2. ....

[2]

(c) In the box below, draw and label the lever system used at the neck when heading a ball in football.

1. **What is the primary purpose of the study?** The study aims to evaluate the effectiveness of a new treatment for hypertension in a diverse population.

[3]

23 (a) Describe the long term effects of a six-month training programme on the heart.

[5]

(b) (i) Describe the differences between the pulmonary artery and the pulmonary vein.

[4]

(ii) Name the blood vessel responsible for returning deoxygenated blood back to the heart and into the right atrium.

[1]

[1]

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).





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