Oxford Cambridge and RSA

Wednesday 22 May 2024 – Afternoon

GCSE (9–1) Physical Education

J587/01 Physical factors affecting performance

Time allowed: 1 hour

No extra materials are needed.

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

Centre number | | | | | | Candidate number | | | | |

First name(s) _____

Last name _____

INSTRUCTIONS

- Use black ink. You can use an HB pencil, but only for graphs and diagrams.
- Write your answer to each question in the space provided. If you need extra space use the lined pages at the end of this booklet. The question numbers must be clearly shown.
- Answer **all** the questions.

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 questions marked with an asterisk (*).
- This document has **16** pages.

ADVICE

- Read each question carefully before you start your answer.

© OCR 2024 [601/8442/5]
DC (ST/FC) 318921/4
OCR is an exempt Charity

Section A

1

(a) Describe how the ribs provide protection for the body.

.....

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

(b) Describe, using a sporting example, how the cranium provides protection.

.....

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

2

(a) Describe what is meant by the term hypertrophy of muscle.

.....

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

(b) State **two** types of training used to **increase** hypertrophy of muscle.

1 .....

.....

2 .....

.....

[2]

3

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

Describe the purpose of these valves.

.....

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

(b) Other than the bicuspid and tricuspid valves, identify another valve in the heart.

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

© OCR 2024

4 Which one of the following is **not** a bone in the arm?

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

A Humerus ☐

B Patella ☐

C Radius ☐

D Ulna ☐

[1]

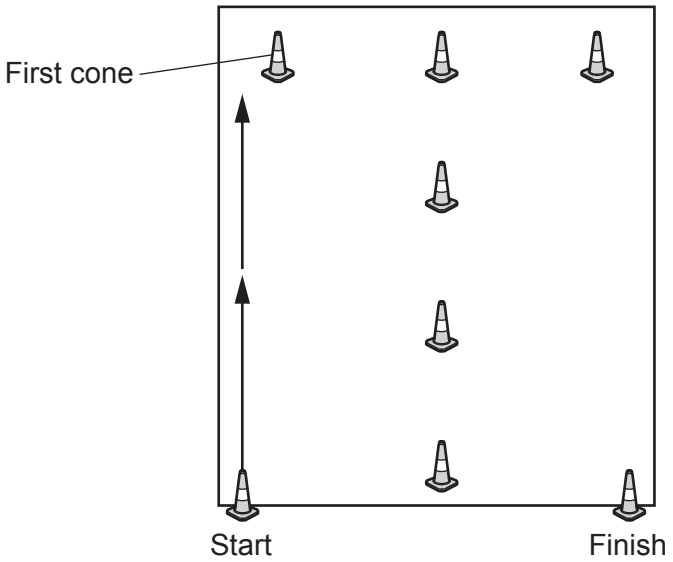
5 Overload means doing too much exercise during a training programme.

Is this statement true or false?

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

6 This diagram shows the Illinois agility test set up.

The arrows show the direction from the start to the first cone.



(a)

(i) Complete the diagram to show the rest of the route of the Illinois agility test. **[1]**

(ii) State the correct distance from the **start** to the **first cone**.

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

© OCR 2024

7 Arteries and veins are blood vessels that have different structures and functions.
For example, arteries do **not** have valves but veins do have valves.

Complete the table below to describe another difference between arteries and veins.

Arteries	Veins
.....	.....
.....	.....

[1]

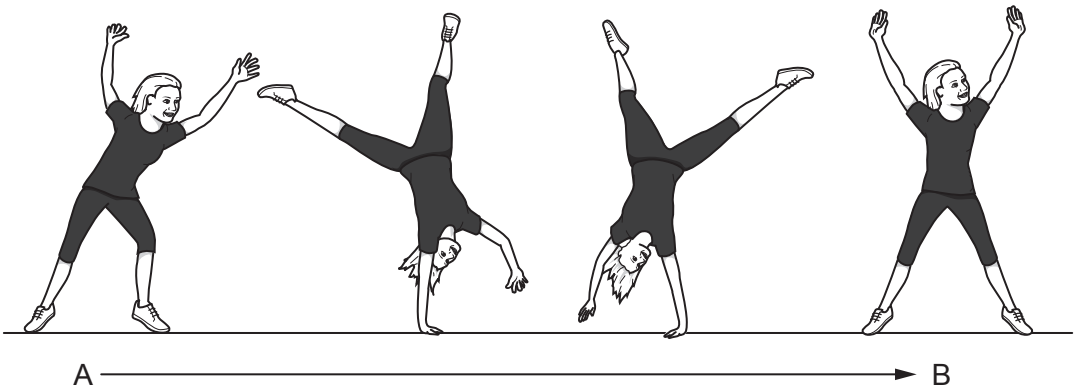
8 Complete the statement below using the correct option from the comment box.

The ..... test is a suitable fitness test for co-ordination.

Multi-stage fitness	Ruler drop	Sit-up
Stork stand	Vertical jump	Wall throw

[1]

9 The diagram below shows the performance of a cartwheel.



(a) State the plane of movement that is used when the performer moves from A to B.

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

(b) State the type of movement at the shoulder as the arm is raised sideways away from the body.

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

© OCR 2024

10 Explain, using an example, how the storage of minerals in the skeleton can help a performer during **contact** sports.

.....

.....

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

11 State the muscle group involved in rib cage movement during breathing.

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

12 Arteries and veins are types of blood vessel in the body.

Name another type of blood vessel.

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

13 With reference to lever systems, give a definition of mechanical advantage.

.....

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

14 Describe **one negative** short-term effect of exercise on the muscular system.

.....

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

15 Explain what the term **synovial** joint means.

.....

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

© OCR 2024

16 The table shows pre-test and post-test results for the sit and reach test for four gymnasts.

Name	Pre-test (cm)	Post-test (cm)
Ali	4.5	5.1
Ling	13.5	14.0
Taylor	8.2	8.0
Zayn	15.1	15.5

(a)
(i) Which gymnast has the best flexibility?

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

(ii) Which gymnast made the greatest improvement in their flexibility?

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

(iii) Suggest a reason for Taylor's post-test result.

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

17 The cardiovascular system is a double-circulatory system that involves systemic and pulmonary circulation.

Describe the following types of circulation:

Systemic circulation .....

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

Pulmonary circulation .....

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

18 Marathon running is mainly an aerobic exercise.

Describe, using a practical example, when marathon running becomes **anaerobic** exercise.

.....

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

© OCR 2024

19 A hockey player participates in 60-minute fartlek training sessions twice a week.

Which element of FITT is **not** applied in the statement above?

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

20 Hip and Knee are joint types.

Draw a line that connects each joint type with the correct articulating bones.

You should draw **one line** for each joint type.

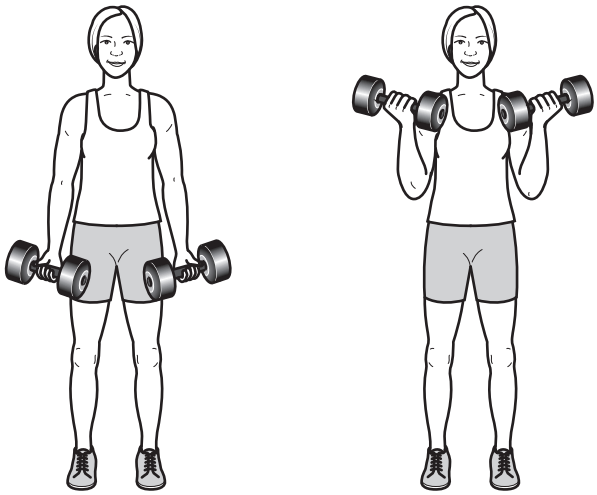
Joint type		Articulating bones
Hip		Femur and fibula
		Femur and pelvis
		Femur and tibia
Knee		Femur and vertebrae
		Femur, fibula and tibia
		Femur, pelvis and vertebrae

[2]

© OCR 2024

Section B

21 The diagram below shows a gymnast weight training.



A B

(a) Explain how the pair of muscles at the elbow work together when lifting the weights from A to B.

.....

.....

.....

.....

.....

..... **[3]**

(b) Describe the role of **fixator** muscles during the movement from A to B.

.....

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

(c) Describe how the ligaments and tendons of a joint help assist the movement from A to B.

Ligaments .....

.....

Tendons .....

.....

[2]

© OCR 2024

(d) Weight training has long term effects which can help a gymnast.

For each example below describe a long term effect **and** explain how this effect could help the gymnast when they are performing.

Example 1:

Bone .....

Effect on performance .....

.....

Example 2:

Heart .....

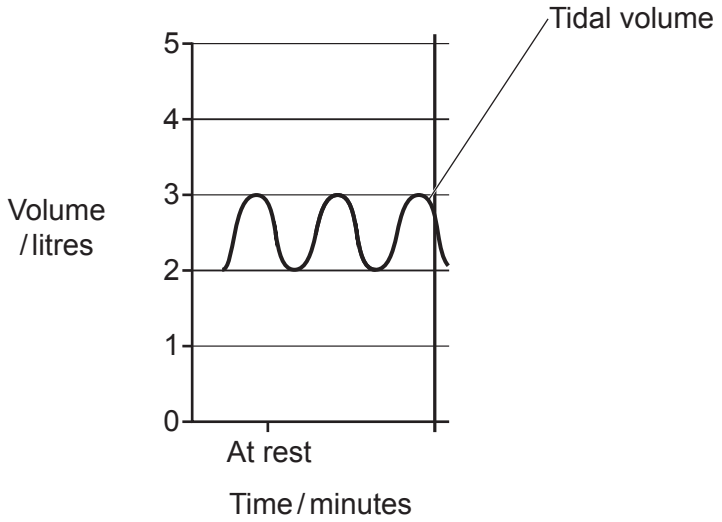
Effect on performance .....

.....

[4]

© OCR 2024

22 The line graph below shows respiratory volume at rest.

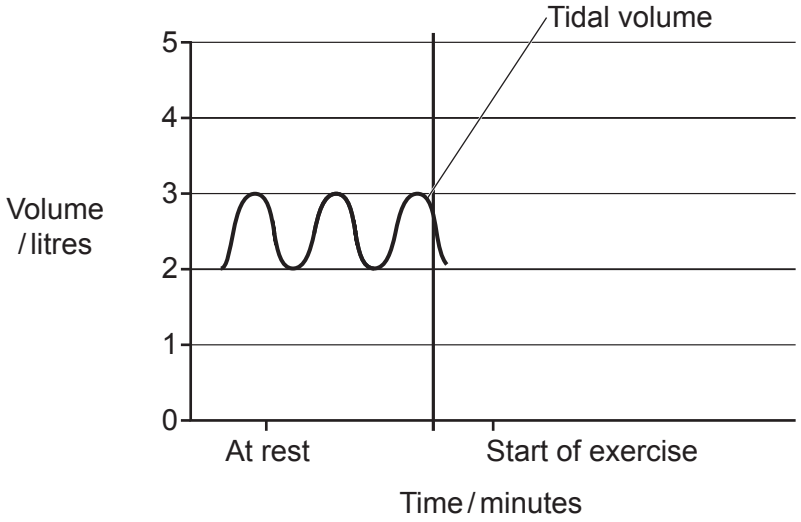


(a) State the **tidal** volume at rest.

.....

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

(b) Continue the line graph below to show how tidal volume changes when exercise starts.



[1]

© OCR 2024

(c) The left bronchus enters the left lung.

The right bronchus enters the right lung.

Name **two** other features of the lungs and describe a function for each of the features you name.

Feature 1 .....

Function .....

.....

Feature 2 .....

Function .....

.....

[4]

(d) A basketball match is about to start.
Player A has performed a full warm up.
Player B has not performed any warm up.

At the start of the match compare the short-term effects of a full warm up on the **respiratory** system of player A when compared to player B.

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... **[4]**

© OCR 2024

23 A netball player performs passing and catching drills as part of their warm up routine.

(a) Name the warm up component that involves passing and catching drills in netball.

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

(b) Other than the component named in **23(a)**, identify a warm up component and describe **two** benefits for a netball player performing this component.

Named warm up component: .....

Benefit 1 .....

.....

Benefit 2 .....

.....

[3]

© OCR 2024

(c)* A sports coach uses different types of guidance during a session.

A coach must also encourage players to perform a cool down to help the body transition to a resting state.

Describe, using examples, the key components of a cool down **and** outline other physical benefits of a cool down.

Explain how using different types of guidance can improve safety when coaching in sport. **[6]**

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

END OF QUESTION PAPER

© OCR 2024

EXTRA ANSWER SPACE

If you need extra space use these lined pages. You must write the question numbers clearly in the margin.

© OCR 2024

© OCR 2024

OCR
Oxford Cambridge and RSA

Copyright Information

OCR is committed to seeking permission to reproduce all third-party content that it uses in its assessment materials. OCR has attempted to identify and contact all copyright holders whose work is used in this paper. To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced in the OCR Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download from our public website (www.ocr.org.uk) after the live examination series.

If OCR has unwittingly failed to correctly acknowledge or clear any third-party content in this assessment material, OCR will be happy to correct its mistake at the earliest possible opportunity.

For queries or further information please contact The OCR Copyright Team, The Triangle Building, Shaftesbury Road, Cambridge CB2 8EA.

OCR is part of Cambridge University Press & Assessment, which is itself a department of the University of Cambridge.

© OCR 2024