



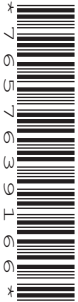
Oxford Cambridge and RSA

Friday 17 May 2019 – Morning

AS Level Physical Education

H155/01 Physiological factors affecting performance

Time allowed: 1 hour 15 minutes



You may use:

- a scientific or graphical calculator



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. HB pencil may be used for graphs and diagrams only.
- 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, 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 **70**.
- 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 **12** pages.

(b) **Table 1** shows the distribution of blood in the body at rest and during exercise.

Table 1

Tissue/organ	At rest (ml/min)	Blood flow (%)	During exercise (ml/min)	Blood flow (%)
Skeletal muscle	1000	B	16 000	80
Heart	250	5	750	3.75
Brain	750	15	750	3.75
Skin	A	10	1250	6.25
Kidneys	1000	20	750	3.75
Other	1500	30	500	2.50
Total	5000	100	20 000	100

(i) Calculate the missing values for **A** and **B**.

A =

B =

[2]

(ii) Explain how the changes in the distribution of blood to the skeletal muscles and other organs is achieved during exercise.

Skeletal muscles

.....

.....

Other organs

.....

.....

[4]

(c) Describe, using a practical example for each, the following types of strength.

Static strength

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

Dynamic strength

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

Maximum strength

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

[6]

(d) (i) Identify **one** recognised method of evaluating flexibility. Describe **two** advantages and **one** disadvantage of this method.

Method:

Advantages:

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

Disadvantage:

.....

[4]

(ii) Explain why a javelin thrower would benefit from good shoulder flexibility.

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

[1]

3 (a) Hockey players hit the ball at high speeds to prevent interceptions.

(i) Apply Newton's second law of motion to show how a hockey player may maximise the ball's acceleration.

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

(ii) Calculate the force applied to a hockey ball with a mass of 0.16 kg to cause it to accelerate at a rate of 30 ms^{-2} . Show your workings.

.....
.....
.....
..... [2]

(b) Identify all the component parts of a lever system. Use a practical example from sport to show the component order of a first class lever.

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

A series of 25 horizontal dotted lines spanning the width of the page, intended for writing answers.

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).

A large area of lined paper for writing, consisting of 25 horizontal dotted lines. A solid vertical line runs down the left side of the page, creating a margin. The rest of the page is open for writing.

A large area of the page is reserved for writing, featuring a vertical solid line on the left side and horizontal dotted lines extending across the page.



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 the Cambridge Assessment Group; Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.