

**OXFORD CAMBRIDGE AND RSA EXAMINATIONS
AS GCE
F732/01**

**GENERAL STUDIES
The Scientific Domain**

**FRIDAY 22 MAY 2015: Afternoon
DURATION: 1 hour
plus your additional time allowance**

MODIFIED ENLARGED

| | | | |
|-------------------------------|--|------------------------------|--|
| Candidate forename | | Candidate surname | |
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| Centre number | | | | | | Candidate number | | | | |
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Candidates answer on the Question Paper.

OCR SUPPLIED MATERIALS:

None

OTHER MATERIALS REQUIRED:

Scientific calculator

A calculator may be used for this paper

READ INSTRUCTIONS OVERLEAF

INSTRUCTIONS TO CANDIDATES

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

Use black ink. HB pencil may be used for graphs and diagrams only.

Answer ALL the questions in Section A and ONE question in Section B.

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 pages on pages 24–26 of this booklet. The question number(s) must be clearly shown.

INFORMATION FOR CANDIDATES

The number of marks is given in brackets [] at the end of each question or part question.

The total number of marks for this paper is 60.

You are advised to divide your time equally between Sections A and B.

THE QUALITY OF YOUR WRITTEN COMMUNICATION WILL BE ASSESSED, INCLUDING CLARITY OF EXPRESSION, STRUCTURE OF ARGUMENTS, PRESENTATION OF IDEAS, GRAMMAR, PUNCTUATION AND SPELLING.

Any blank pages are indicated.

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SECTION A

Answer ALL the questions in this section.

- 1 **TABLE 1** below shows the net number of people migrating into and out of regions in England and Wales (June 2011).

TABLE 1

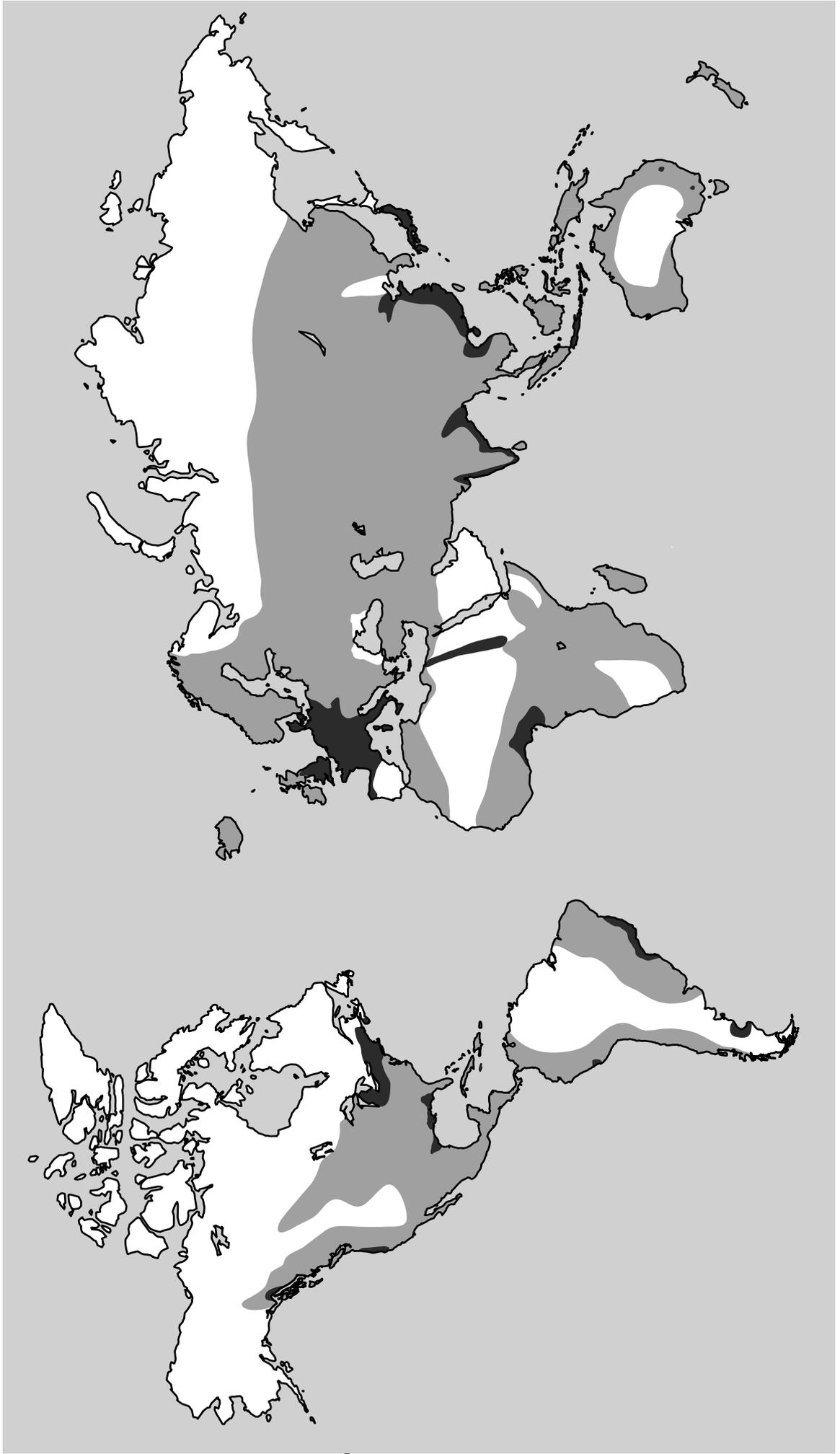
| Region | Number of people migrating | |
|---------------------------------|-----------------------------------|------------------------|
| | out of the region | into the region |
| North East | 2724 | |
| North West | 7071 | |
| Yorkshire and Humberside | 5676 | |
| East Midlands | | 3889 |
| West Midlands | 7182 | |
| East of England | | 14620 |
| London | 40351 | |
| South East | | 20684 |
| South West | | 19216 |
| Wales | | 2532 |
| TOTALS | 63004 | 60941 |

(a) (i) Identify TWO trends shown in TABLE 1.

[2]

FIG. 1

■ Densely populated **■** Moderately populated **□** Sparsely populated



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- 2 (a) (i) The distance between the goal posts on a football pitch is 8 yards and the height is 8 feet.**

Convert BOTH of these measurements to metres using the following:

1 yard = 0.9144 metres

3 feet = 1 yard

[2]

- (ii) What level of accuracy do you think your answers should be rounded to and why?**

[2]

- (b) A football manager wants to arrange three players in a line. They are labelled X, Y, and Z. Show the different ways that the players can be arranged.**

[2]

(c) Pythagoras' Theorem can be used to check if a triangle has a right angle.

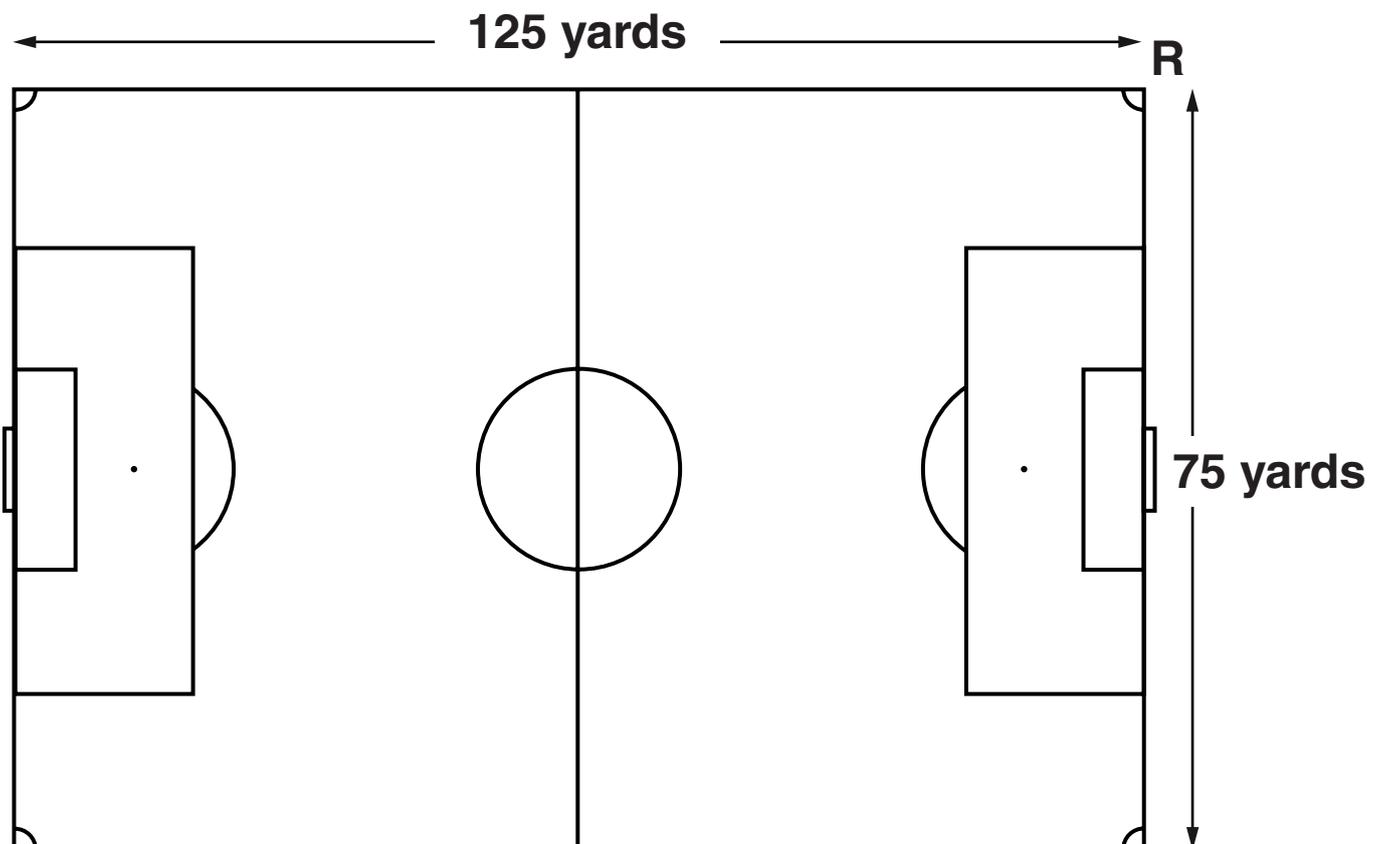
The formula is $A^2 = B^2 + C^2$

where A is the length of hypotenuse (the longest side) and B and C are the lengths of the two shorter sides.

FIG. 2 shows some measurements of a football pitch. A groundsman uses these when he marks out a football pitch. When he has finished, he measures the length of a diagonal to check whether the corners are right angles.

FIG. 2

NOT TO SCALE



He measured the diagonal to be 146 yards. Is the corner, marked R on the diagram, a right angle? Explain your conclusion.

[4]

SECTION B

Answer ONE question from this section.
Your answer should be in continuous prose.

Answer in the space provided on pages 18 to 23.

- 3 A data logger is a small, portable electronic device that collects data from sensors. The following are examples of different types of data that could be collected:

| | |
|------------|---------------|
| Heat | pH |
| Movement | Sound |
| Light | Oxygen levels |
| Wind speed | Radiation |

Outline and discuss the **ADVANTAGES** to scientists of using data loggers. [30]

- 4 The following needs may arise as the world's population increases:

management of air pollution

disease control

fertility control.

Consider how the use of different timescales (short, medium and long term) might offer different solutions to ONE of these needs. [30]

5 FIG. 5 Location of National Parks in the UK



Consider the environmental problems that the UK's National Parks face and discuss ways in which EACH of these problems might be managed. [30]

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