

**OXFORD CAMBRIDGE AND RSA EXAMINATIONS**  
**GCSE**  
**B681/01**  
**ENVIRONMENTAL AND LAND-BASED**  
**SCIENCE**

**Management of the Natural  
Environment (Foundation Tier)**

**FRIDAY 17 JUNE 2016: Morning**  
**DURATION: 1 hour**  
**plus your additional time allowance**

**MODIFIED ENLARGED**

<b>Candidate forename</b>		<b>Candidate surname</b>	
-------------------------------	--	------------------------------	--

<b>Centre number</b>						<b>Candidate number</b>				
--------------------------	--	--	--	--	--	-----------------------------	--	--	--	--

**Candidates answer on the Question Paper.**

**OCR SUPPLIED MATERIALS:**

**None**

**OTHER MATERIALS REQUIRED:**

**Pencil**

**Ruler (cm/mm)**

**Calculator**

**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.**

**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. Additional paper may be used if necessary but you must clearly show your candidate number, centre number and question number(s).**

## **INFORMATION FOR CANDIDATES**

**The quality of written communication is assessed in questions marked with a pencil ().**

**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 50.**

**Any blank pages are indicated.**

**BLANK PAGE**

**Answer ALL the questions.**

- 1 Students are planning a scientific investigation on a rocky seashore.**

**Before they start, they have been told to produce a risk assessment for their activity.**

**Which TWO of the following hazards are the most likely on a rocky seashore?**

**Put ticks (✓) in the boxes next to the TWO correct answers.**

**cut off by the tide**

☐

**electrocution**

☐

**poisonous plants**

☐

**slipping over**

☐

**snake bites**

☐

**[2]**

- 2 Farmers may earn more money from their land by using it for alternative methods of producing electricity. One way of doing this is by growing willow trees. The branches are harvested and burnt to produce heat to drive turbines.**

**This method could be described as being:**

- A fuel crop**
- B ground source heating**
- C solar power**
- D wind power**

**Answer A, B, C or D \_\_\_\_\_ [1]**

- 3 A LOAM soil contains similar proportions of three main components.**

**What are these THREE main components?**

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

**2 \_\_\_\_\_**

**3 \_\_\_\_\_**

**[3]**

- 4 The table shows the mean (average) yield of wheat in the UK.

YEAR	YIELD OF WHEAT (TONNES PER HECTARE)
1890	2.0
1910	2.2
1930	2.4
1950	2.8
1970	3.9
1990	6.0
2010	8.7

- (a) (i) Plot this data onto the graph opposite.

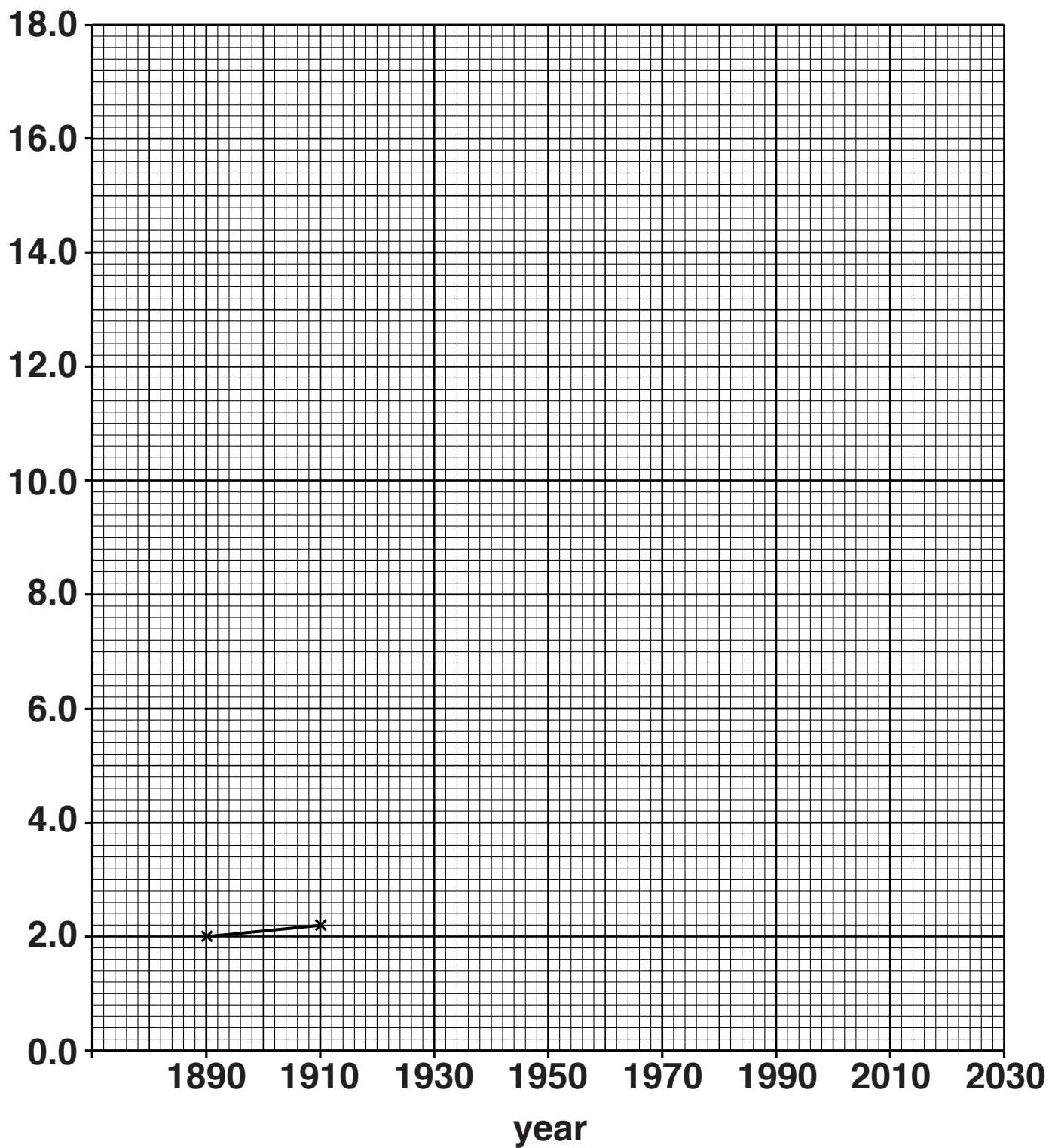
The first two points have been done for you.

[3]

- (ii) Use the graph to predict the yield of wheat for 2030.

predicted yield in 2030 = \_\_\_\_\_ tonnes per hectare  
[1]

yield  
of wheat  
(tonnes per  
hectare)



**(iii) Suggest THREE reasons for the large increase in wheat yield in the UK.**

**Reason 1** \_\_\_\_\_

\_\_\_\_\_

**Reason 2** \_\_\_\_\_

\_\_\_\_\_

**Reason 3** \_\_\_\_\_

\_\_\_\_\_

**[3]**

**(b) In 2010, experts stated that the mean yield of wheat across the world was only 33.3% of that of the UK.**

**Calculate the mean yield of wheat across the world in 2010.**

**mean yield = \_\_\_\_\_ tonnes per hectare [1]**

**(c) The mean yield of wheat per hectare across the world is significantly less than that of the UK. Suggest TWO reasons why.**

**Reason 1** \_\_\_\_\_

\_\_\_\_\_

**Reason 2** \_\_\_\_\_

\_\_\_\_\_

**[2]**

**5 The Rare Breeds Survival Trust (RBST) is a UK conservation organisation.**

**Name TWO types of animal that the RBST would help to conserve.**

**Animal 1** \_\_\_\_\_

**Animal 2** \_\_\_\_\_

**[2]**

**6 A builder submits plans for a new housing estate.**

**The planning officers agree to these plans but insist that the builder also plants trees in the new housing estate.**

**Describe the benefits of planting trees in the new housing estate.**



**The quality of written communication will be assessed in your answer to the question.**

---

---

---

---

---

---

---

---

---

---

---

**[6]**

**7 Commercial production of animals and plants may be EXTENSIVE or INTENSIVE.**

**Complete the table below with an example of each method of production.**

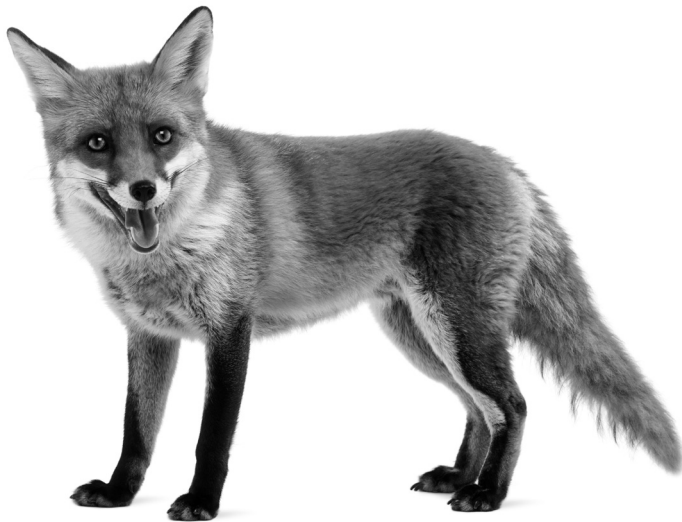
**The first one has been done for you.**

	<b>Example of EXTENSIVE method of production</b>	<b>Example of INTENSIVE method of production</b>
<b>TREES</b>	harvesting ancient woodlands	conifer plantations
<b>POULTRY</b>		
<b>FISH</b>		
<b>FARM ANIMALS</b>		
<b>PLANT CROPS</b>		

**[4]**

**8 Foxes are commonly seen across the UK.**

**Their numbers are increasing.**



**Describe the adaptations which allow the fox to be so successful.** [6]



**The quality of written communication will be assessed in your answer to the question.**

---

---

---

---

---

---

---

---

---

---

**9 Farmers and growers provide nutrients to their crops.**

**They may compost organic matter to supply nitrates.**

**The process that releases these nutrients for the plants is called:**

**A addition**

**B decay**

**C fixation**

**D nitrification**

**Answer A, B, C or D \_\_\_\_\_ [1]**

**10 A school keeps records of temperature, sunlight and rainfall from a weather station.**

**This data is recorded and stored so it may be used for future reference.**

**The school farm is planning to cultivate some land and sow a crop in spring.**

**Suggest TWO ways the weather data may be useful to the school farm.**

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

\_\_\_\_\_

**2** \_\_\_\_\_

\_\_\_\_\_

**[2]**

**11 Scientists agree that earthworms are important to the health of the soil.**

**Describe the ways earthworms improve the soil.**



**The quality of written communication will be assessed in your answer to the question.**

---

---

---

---

---

---

---

---

---

---

---

**[6]**

**12 Which one of the following is NOT involved in soil formation?**

**A conduction**

**B deposition**

**C erosion**

**D weathering**

**Answer A, B, C or D \_\_\_\_\_ [1]**

**13 Large machines used on farms can damage the soil.**

**Suggest THREE ways large machines can damage the soil.**

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

**2** \_\_\_\_\_  
\_\_\_\_\_

**3** \_\_\_\_\_  
\_\_\_\_\_

**[3]**

**14 A market garden has been left unattended for many months.**

**It has become overgrown with weeds.**

**Which of the following is the BEST reason for removing these weeds before a crop is grown?**

- A Weeds will encourage biodiversity.**
- B Weeds may be used as an alternative fuel crop.**
- C Weeds will reduce the amount of light for the crop.**
- D Weeds will stop crops from being picked.**

**Answer A, B, C or D \_\_\_\_\_ [1]**

**15 Some students sample the pH of the soil at different places in a wood.**

**Their results are shown below.**

<b>STUDENT</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>
<b>pH OF SAMPLE</b>	7.2	7.1	7.2	6.9	7.0	6.5	7.0	7.1

**(a) What is the mean (average) soil pH in this wood?**

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

**(b) All of the students have used the same technique.**

**Suggest a possible reason why student F's result is so different.**

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

**END OF QUESTION PAPER**

**BLANK 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](http://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 Copyright Team, First Floor, 9 Hills Road, Cambridge CB2 1GE.**

**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.**