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**GENERAL CERTIFICATE OF SECONDARY EDUCATION**  
**ENVIRONMENTAL AND LAND-BASED SCIENCE**  
 Livestock Husbandry (Higher Tier)

**B495/02**

Candidates answer on the Question Paper

**OCR Supplied Materials:**  
 None

**Other Materials Required:**

- Electronic calculator
- Pencil
- Ruler (cm/mm)

**Friday 28 May 2010**  
**Morning**

**Duration: 45 minutes**



Candidate Forename		Candidate Surname	
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Centre Number						Candidate Number				
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**INSTRUCTIONS TO CANDIDATES**

- Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes above.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure that you know what you have to do before starting your answer.
- Answer **all** the questions.
- Do **not** write in the bar codes.
- 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 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 **36**.
- This document consists of **16** pages. Any blank pages are indicated.

Answer **all** the questions.

1 The photograph shows a concentrate feed.



Which of the following describes a concentrate food?

- A has a high fibre content
- B has a high nutrient content
- C is always fed fresh
- D is diluted before feeding

Answer **A, B, C** or **D** ..... [1]

2 Healthy animals need good housing.

Choose the best words from the list below to complete the following sentences.

**dry**

**food**

**illuminated**

**insulated**

**straw**

**tidy**

**ventilated**

**warm**

**water**

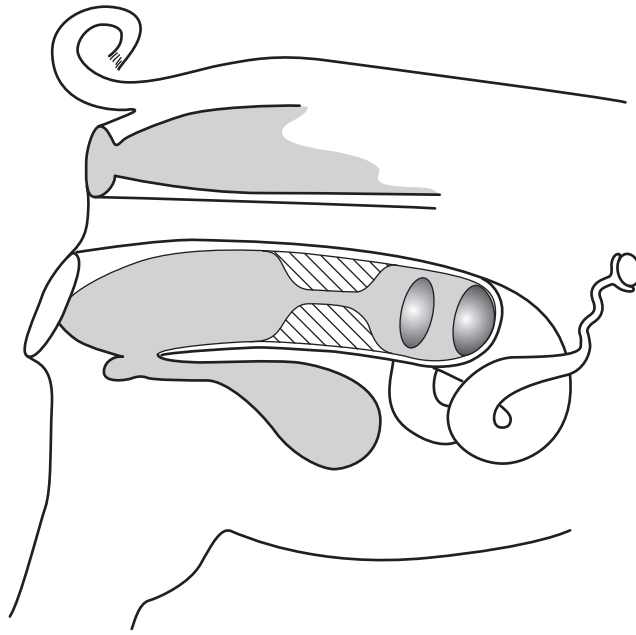
Animal houses need to be free from draughts but well .....

Disease can be reduced by keeping the house clean and .....

As well as bedding, a constant supply of clean fresh ..... should always be available.

**[3]**

3 The diagram shows the reproductive system of a pig.



What is the function (job) of the uterus?

.....

..... [1]

4 This animal is eating well but is losing weight.



In the list below, put a **ring** around the correct cause to finish the following sentence.

**bacterial disease**

**fungal disease**

**parasites**

**viruses**

The animal might be suffering from .....

[1]

5 Which of the following is **not** a gamete?

- A egg
- B embryo
- C ovum
- D sperm

Answer **A, B, C** or **D** ..... [1]

6 A **gamete** from a pig has 19 chromosomes.

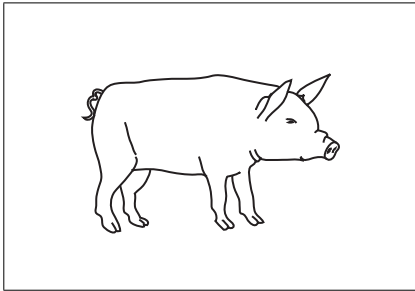
How many chromosomes are there in a **body cell** of a pig?

- A 9
- B 19
- C 38
- D 76

Answer **A, B, C** or **D** ..... [1]

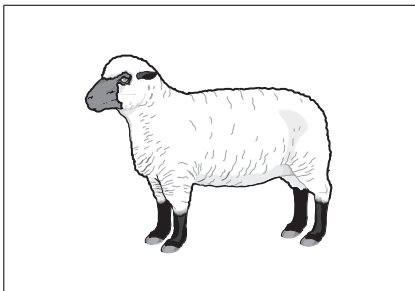
7 Draw a straight line to link the **animal** with the correct **time taken for its embryo to develop**.

**animal**

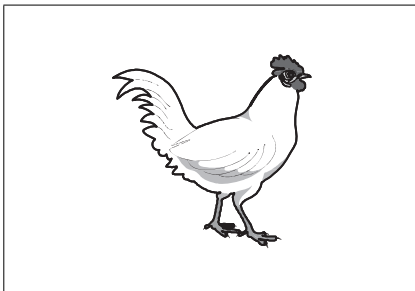


**time taken for  
embryo to develop**

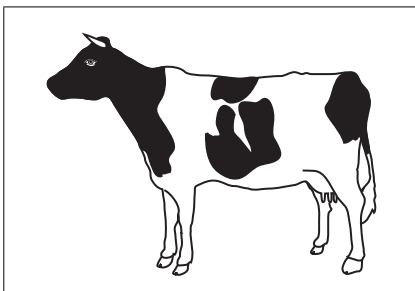
**9 months**



**5 months**



**21 days**



**3 months, 3 weeks, 3 days**

[2]

8 Sexual reproduction involves sperm and an ovum.

This is a picture of a sperm and an ovum.



What is the difference between **insemination** and **fertilisation**?

.....

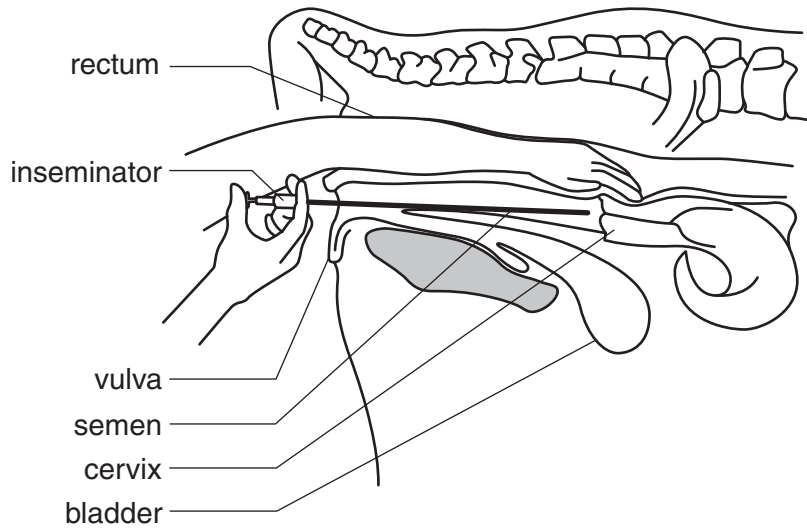
.....

.....

..... [2]



9 The diagram shows a cow being artificially inseminated.



Many farmers prefer to use artificial insemination rather than keeping a bull on the farm.

Suggest why many farmers prefer artificial insemination rather than keeping a bull.

.....

.....

.....

.....

.....

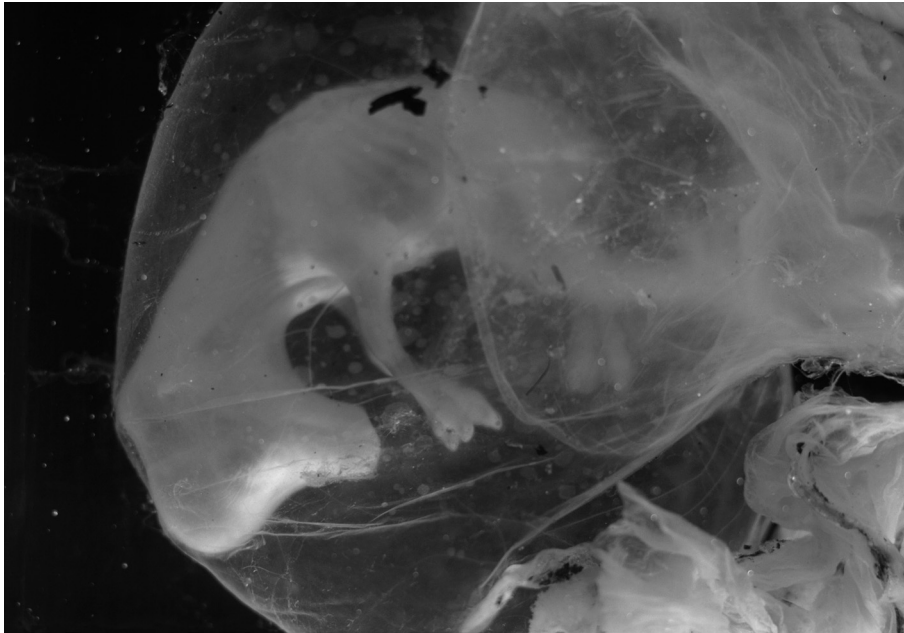
.....

.....

..... [4]

10 Artificial insemination and embryo transplants are two techniques used in animal breeding.

The photograph shows a developing embryo.



Other than cost, suggest **two** reasons why embryo transfer is not usually carried out on UK farms.

- 1 .....
  - 2 .....
- ..... [2]

11 The photograph shows an intensive dairy system.



The routine use of antibiotics is more likely in intensive animal production systems than extensive systems.

Suggest why this might be necessary.

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

12 The use of antibiotics in livestock production has led to problems.

One problem is that some antibiotics are no longer effective in treating human illness.

Explain why these antibiotics are no longer effective in treating humans.

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

13 Many functions of living things are controlled by hormones.

Reproduction is one of these.

Name a hormone which is involved in animal reproduction and explain its role.

.....

.....

.....

..... [2]

14 Salmonella is a common illness caught from contact with animals.

Suggest one way of reducing the chances of becoming ill with salmonella.

.....

..... [1]

15 People who work on the land should always have a vaccination to prevent them becoming ill if they have cut themselves when working with animals or soil.

Which disease, commonly called lockjaw, caused by bacteria entering a cut, can be prevented by vaccination?

..... [1]

16 All livestock movements have been recorded.

**Report of a Pig Movement made under the General Licence for the Movement of Pigs**



Please complete using BALL POINT pen and press firmly but before doing so read the important notes overleaf.

**Section A – Identification and traceability. (Please also complete Section C below.)**

1. **Departure details**

Departure CPH/ Other ref.	<input type="text"/>	Assured Scheme No.	<input type="text"/>
Holding of birth CPH/Other ref.	(to be completed only if pigs are moving on a temporary mark)	Move within a Pig Pyramid	<input type="checkbox"/> (Tick if appropriate)
Keeper's name and full postal address of holding of <b>Departure</b>		Name and full postal address of <b>Owner</b> (if different)	

State which organisation is responsible for the collection and monitoring of animal movement records and suggest why these records have become a legal requirement.

.....

.....

..... [2]

17 The Belgian Blue is a modern breed which resulted from a chance mutation giving the animal 'double muscle'.



Explain how a new breed of cattle with the 'double muscle' could be produced from the **one** individual which had the 'double muscle' mutation.

.....

.....

.....

..... [2]

- 18 There are two systems for rearing calves.  
They are called **autumn calving** and **spring calving**.

Look at the tables below.

	<b>autumn calving</b>	<b>spring calving</b>
<b>output</b>	<b>£ per calf</b>	<b>£ per calf</b>
calves produced	496	527
less cow and bull depreciation	46	<b>(a)</b>
<b>total income</b>	<b>450</b>	<b>485</b>

<b>costs</b>		
concentrates	74	90
bulk feed	30	21
vet bills	37	35
bedding	48	48
commission, haulage, tags etc	37	38
forage	150	145
<b>total costs</b>	<b>376</b>	<b>377</b>

<b>profit per calf</b>	<b>£74</b>	<b>(b)</b>
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- (a) What was the depreciation on the cows and bulls for spring-reared calves?

answer ..... [1]

- (b) How much profit was made by the spring-reared calves?

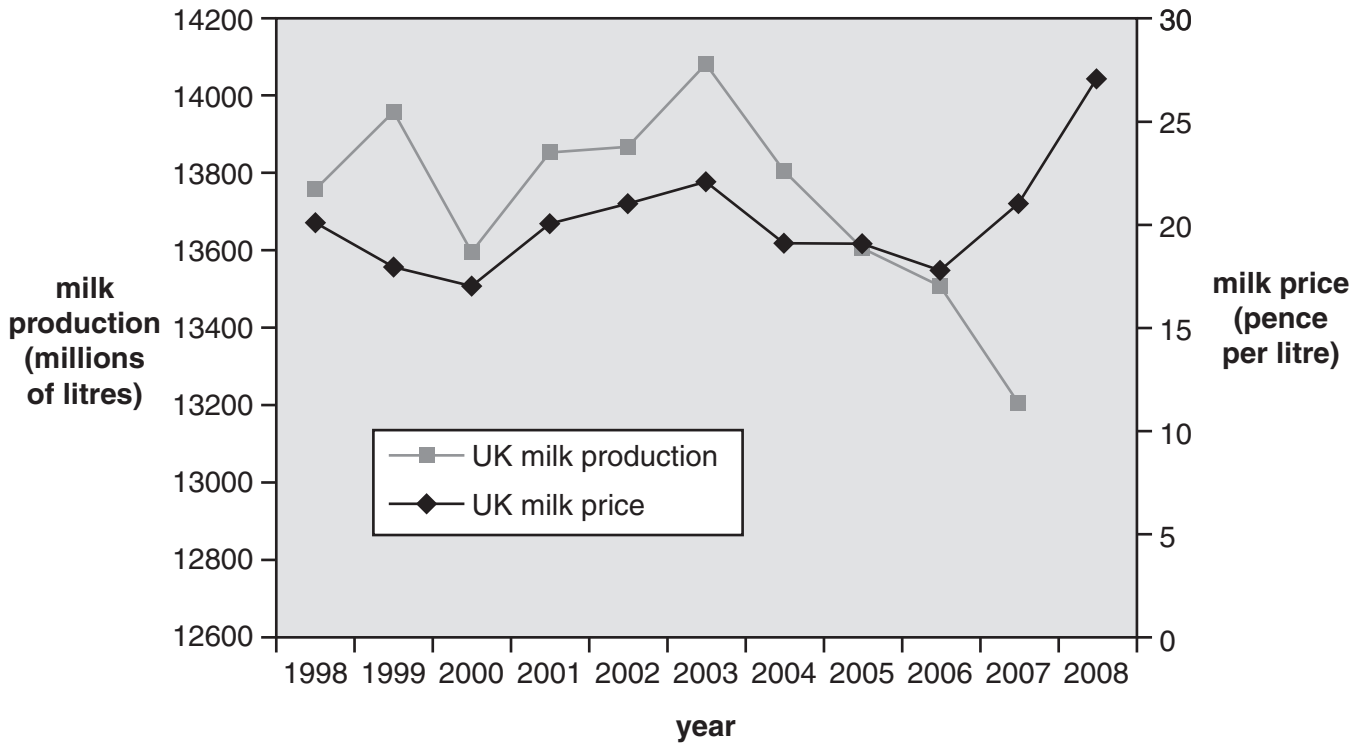
answer ..... [1]

- (c) How much greater is the total **feed** costs for spring calving than for autumn calving?

answer ..... [1]

19 The graph shows the changes in amounts of milk produced in the UK and its average price.

**UK milk production and price**



(a) As the price of milk falls what happens to the amount of milk produced?

..... [1]

(b) Suggest what happened to the amount of milk produced in 2008.

..... [1]

(c) What is the most farmers were paid for milk over the period?

..... [1]

**END OF QUESTION PAPER**

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