

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

B495/02

Candidates answer on the question paper
A calculator may be used for this paper

OCR Supplied Materials:
None

Other Materials Required:

- Pencil
- Ruler (cm/mm)

Monday 1 February 2010
Afternoon

Duration: 45 minutes



Candidate Forename		Candidate Surname	
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Centre Number						Candidate Number				
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INSTRUCTIONS TO CANDIDATES

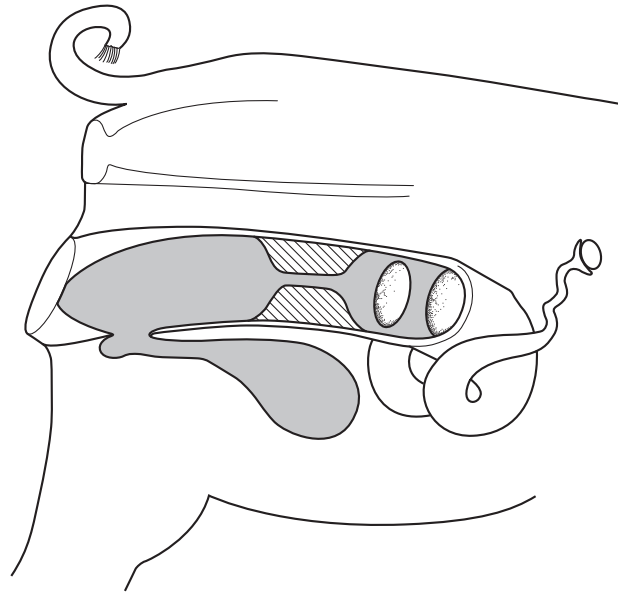
- Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes above.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure that you know what you have to do before starting your answer.
- Answer **all** the questions.
- Do **not** write in the bar codes.
- Write your answer to each question in the space provided, however additional paper may be used if necessary.

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 diagram shows the reproductive system of a female pig.



Label the uterus on the diagram.

[1]

2 The photograph shows a litter of new born pigs.



From the list choose **three** things that you would require when feeding newborn animals.

- A Feed that can be fed ad lib (eat as much as they want, when they want).
- B Feed that can be fed as a ration (a measured amount).
- C Feed with a high carbohydrate content.
- D Feed with a high fat content.
- E Feed with a high fibre content.
- F Feed with a high moisture content.
- G Feed with a high protein content.
- H Feed that is bulky.
- I Feed that is palatable (tastes good).

Answer **A, B, C, D, E, F, G, H** or **I**. and and [3]

3 Mastitis is a disease which may be found in dairy cows.

Treatment involves putting an antibiotic into the infected teat.

The milk from cows treated with antibiotics **cannot** be used for human consumption.

Which **one** of the following is a reason for this?

- A Drinking milk with antibiotics can make people ill.
- B Having small amounts of antibiotics can produce resistant bacteria.
- C Milk with antibiotics tastes unpleasant.
- D People drinking the milk could get mastitis.

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

4 The photograph shows a saddleback pig.



What is the phenotype of this animal?

- A B W
- B b w
- C black and white
- D dominant

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

5 Hormones control many aspects of the reproductive cycle in animals.

Which of the following hormones is responsible for sexual development in male animals?

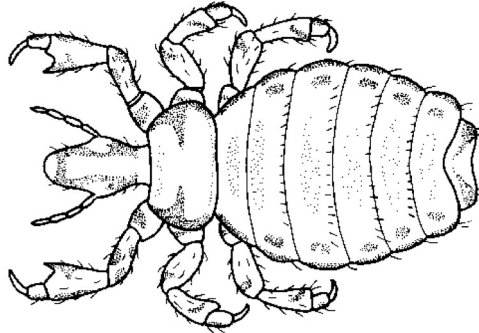
- A auxin
- B oestrogen
- C progesterone
- D testosterone

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

6 The diagram shows a louse.

The louse is a common parasite of farm animals.

Parasites can seriously affect animal health.



(a) Suggest **three** ways a farmer could recognise there was a problem with parasites on the farm.

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

(b) From the list select **three** different things that the farmer could do to reduce parasites on the farm.

- castrate the animals
- drain fields
- exercise animals regularly
- increase feeding
- isolate new livestock
- keep buildings clean
- keep livestock warm
- provide mineral supplements
- selective breeding
- weigh regularly

1
2
3 [3]

7 The photograph shows ewes with young lambs.



Some farmers use hormones to control the onset of oestrus in flocks of sheep.

Sponges containing progesterone are inserted in the vagina of each sheep.

The sponges are removed from the entire flock on the same day and the sheep then ovulate 1 or 2 days later.

(a) All the sheep ovulate around the same time.

Suggest **two** advantages for the farmer of carrying out this procedure.

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

(b) During pregnancy the farmer may have the ewes scanned using ultrasound.

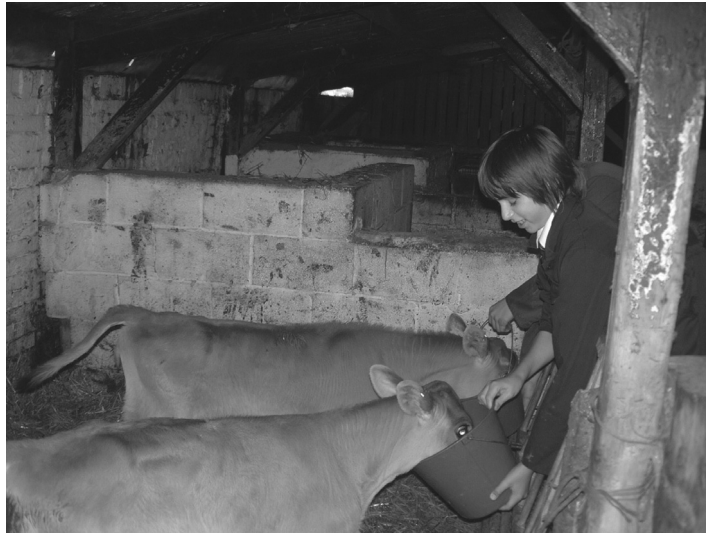
The scan will show if the ewe is carrying any lambs and how many there are.

Suggest **two** reasons why this is important for the management of the flock.

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

8 Animals are given a range of different foods.

This is to ensure they have a balanced diet.



(a) Name one food type that meets the following description.

The food has low water content, a high fibre content, low nutrient content and is often fed as part of the maintenance ration.

..... [1]

(b) A second feed has a low water content, low bulk, high nutrient content and is often fed as part of the production ration.

Name this second feed.

..... [1]

9 The photograph shows a farmer working at the computer.

Modern farming requires dealing with a large volume of data.

The use of computers is a good way to keep this data.



Suggest **three** pieces of data the farmer might record for individual farm animals.

- 1
 - 2
 - 3
- [3]

10 Ivermectin[®] is an injection given to pigs to control a range of parasites.



(a) The dosage given is 1 ml per 33kg of body weight.

What would be the dosage given to a 53 kg pig?

..... ml [1]

(b) Ivermectin[®] is sold in 50 ml, 200 ml, 500 ml and 1000 ml packs.

Which size pack would you buy to treat a herd of 30 pigs whose average mass is 53 kg?

..... ml [1]

- 11 The table shows the impact of parasites and treatment with Ivermectin[®] on the feed conversion ratios for pigs.

	infected pigs left untreated	infected pigs treated with Ivermectin [®]	non-infected pigs left untreated
before investigation feed conversion ratio (kg feed per kg pig)	2.96	3.1	2.87
after investigation feed conversion ratio (kg feed per kg pig)	3.24	3.11	3.25

Which population of pigs has the best feed conversion ratio?

..... [1]

12 The data below is typical for a modern dairy cow.

energy consumption per day (food eaten)	energy used in milk production	milk produced per day	milk used by a calf per day
300 000 J	75 000 J	30 litres	3 litres

(a) What percentage of the food eaten by the cow is used to produce milk?

..... % [1]

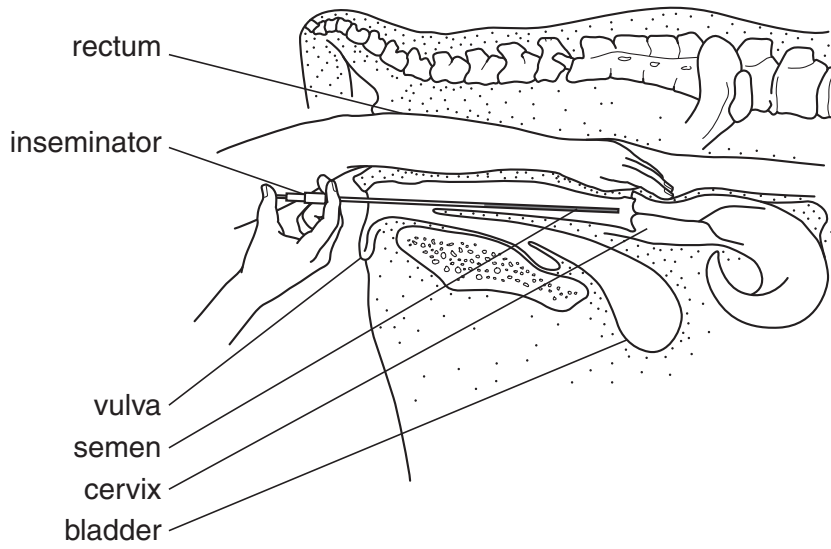
(b) What percentage of the milk produced by the cow is extra to the calf's needs?

..... % [1]

(c) How many joules per day does the cow need to produce this extra milk?

..... joules [1]

13 The diagram shows a cow being artificially inseminated.



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

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

.....

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[4]

14 The photograph shows a weighing crate.



(a) Describe the stages in weighing a large farm animal safely.

.....

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.....

..... [2]

(b) Weighing is an important management tool.

Explain why farmers need to weigh their animals regularly.

.....

.....

.....

..... [2]

END OF QUESTION PAPER

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