

Thursday 2 February 2012 – Morning

GCSE ENVIRONMENTAL AND LAND-BASED SCIENCE

B495/04 Livestock Husbandry (Higher Tier)

Candidates answer on the Question Paper.
A calculator may be used for this paper.

Duration: 45 minutes

OCR supplied materials:
None

Other materials required:

- Pencil
- Ruler (cm/mm)



Candidate forename		Candidate surname	
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Centre number						Candidate number				
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INSTRUCTIONS TO CANDIDATES

- Write your name, centre number and candidate number in the boxes above. 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).
- Do **not** write in the bar codes.

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.

For Examiner's Use	
TOTAL	

Answer **all** the questions.

1 **A**



B



D



C



Which **one** of the following is the correct way to move the calf around the farm?

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

2 The following stages are involved in embryo transfer:

artificial insemination of donor animal

super ovulation of donor animal

surgical removal of embryos

transfer of embryos to surrogate mothers

Write the stages involved in embryo transfer in the correct order in the list below.

1 selection of donor animal

2

3

4

5 storage of embryos

6

7 birth

[2]

3 The photograph shows a badger on farmland.



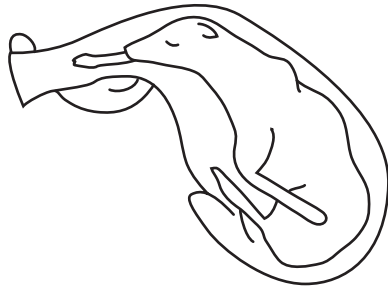
Which **one** of the following diseases is thought to be transmitted to cattle through contact with badgers?

- A mastitis
- B salmonella
- C tetanus
- D tuberculosis (TB)

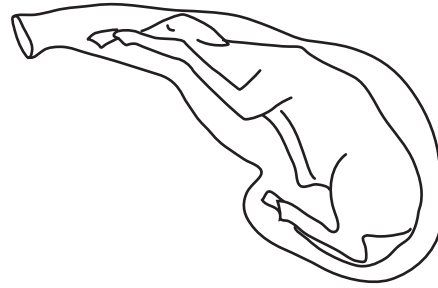
Answer **A, B, C or D** [1]

4 The pictures show embryo calves in the uterus.

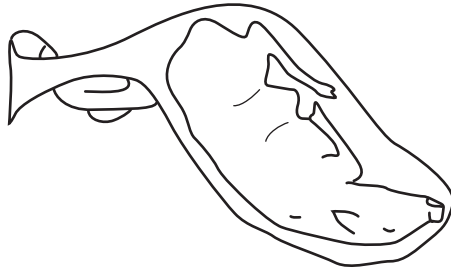
A



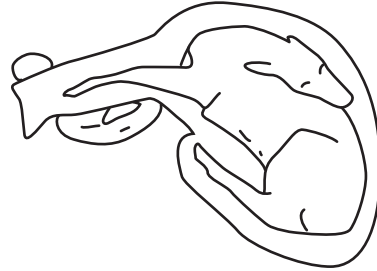
B



D



C



Which **one** of the pictures shows a calf in the correct position for birth?

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

5 Complete the sentence.

The complete genetic make up of an animal is known as its...

- A chromosome.
- B gene.
- C genotype.
- D phenotype.

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

6 Which **one** of the following is classed as a bulk feed?

- A barley meal
- B growers pellets
- C meadow hay
- D milk powder

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

7 Draw a straight line between each **health problem** and its correct **cause**.

health problem	cause
roundworm	bacteria
ringworm	external parasite
lice	fungus
mastitis	internal parasite

[2]

8 The photograph shows an intensive cattle shed.



Suggest **three** environmental conditions that are likely to lead to poor health in animals housed indoors.

1

2

3 [3]

9 The photograph shows a family group of pigs.



Explain how the maintenance and production rations for a breeding sow would be different from those for a breeding boar of the same size.

.....

.....

.....

..... [2]

10 The picture shows a pig farmer recording data on his computer.



(a) Suggest and explain the type of information a farmer might record on a computer about a **breeding sow**.

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

(b) The farmer could also use ICT to reduce the need for labour in the care of his breeding sows.

Suggest **two** ways ICT might **replace tasks** carried out by farm workers in intensive animal systems.

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

11 The photograph shows a cross-bred animal.



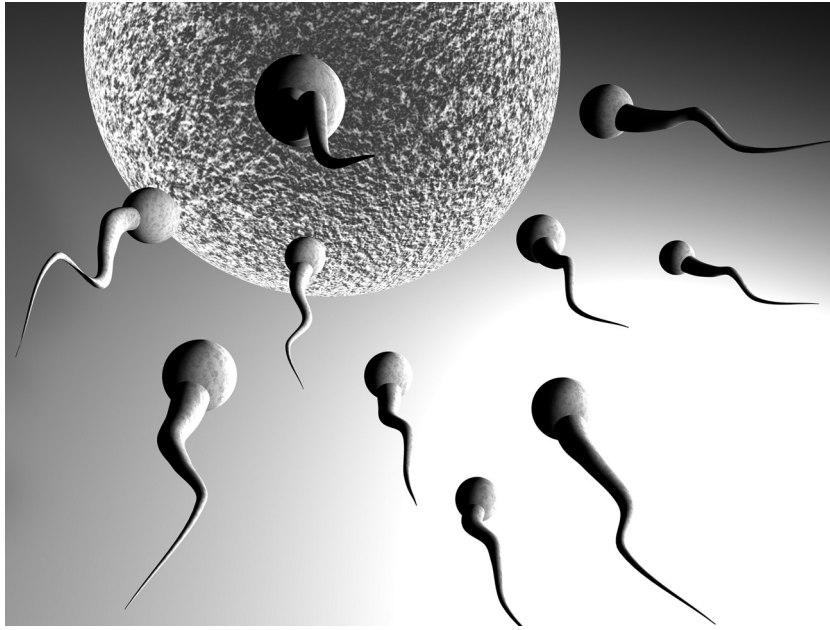
Farmers sometimes cross two different breeds of pedigree animal.

Animals crossed in this way can grow better and be healthier than pure bred animals.

What term is used to describe this improved performance?

..... [1]

12 The picture shows sperm about to reach the ovum.



Sperm for artificial insemination are often kept for long periods of time.

Under normal environmental conditions sperm quickly die after leaving the body.

(a) Describe how sperm are kept alive for artificial insemination.

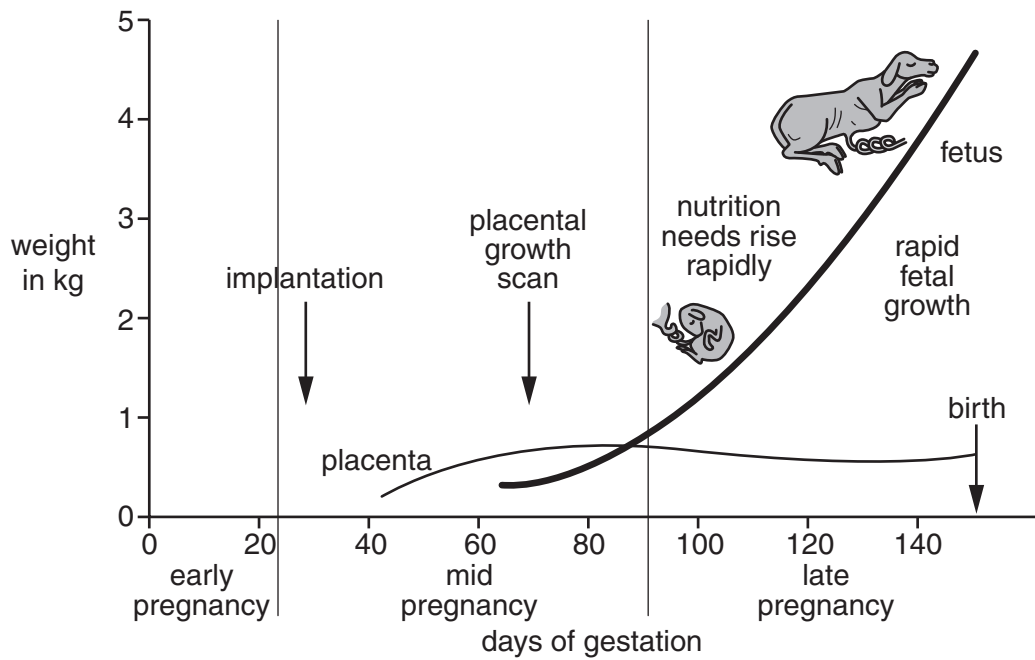
..... [1]

(b) Before the sperm are stored they are diluted.

Explain why.

..... [1]

13 The graph shows the development of a lamb fetus.



(a) When does the embryo implant in the uterus?

..... days.

[1]

(b) When is the placenta at its heaviest?

..... days.

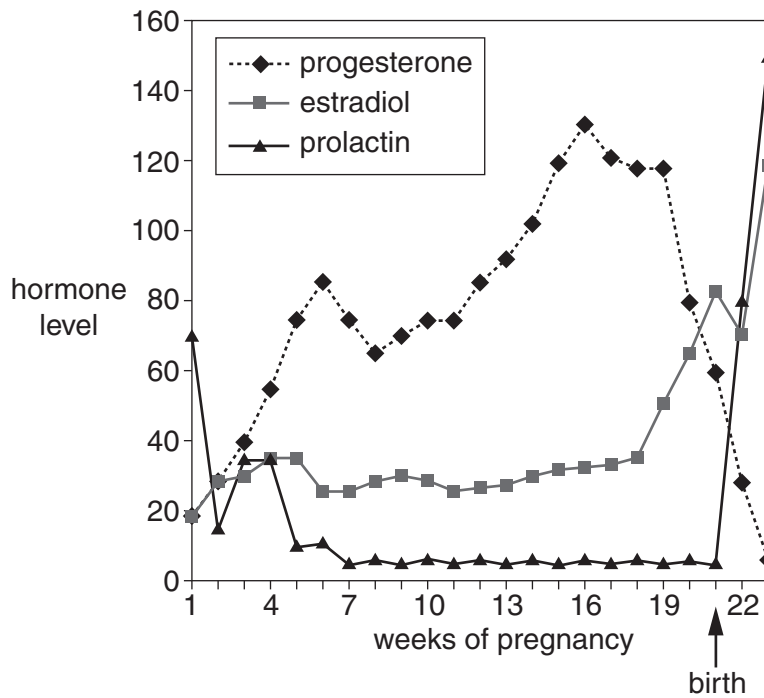
[1]

(c) After how many days of gestation is the lamb born?

..... days.

[1]

14 The graph shows the changing levels of three hormones during pregnancy.



Use evidence from the graph to answer the following:

(a) Which hormone causes the onset of labour as its level falls in the body?

hormone

reason for your choice

..... [1]

(b) Which hormone causes the onset of labour as its level gradually increases in the body?

hormone

reason for your choice

..... [1]

(c) Which hormone causes the onset of milk production?

hormone

reason for your choice

..... [1]

15 The photographs show piglets being reared under extensive and intensive conditions.



Suggest **two** reasons why piglet mortality is often higher on extensive farms than those reared in intensive conditions.

.....

.....

.....

..... [2]

16 The photograph shows a farmer trimming the feet of a bull.



(a) Identify the hazards if you were to carry out a risk assessment for this activity.

What recommendations would you make to the farmer to make the task safer?

.....

.....

.....

.....

.....

.....

.....

..... [3]

(b) The farmer is preparing this animal for sale at a market 70km from his farm.

Explain in detail the legal requirements the farmer must meet if he is to transport the bull legally.

.....

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.....

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.....

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..... [3]

END OF QUESTION PAPER

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