

Candidate Number:

The Institute of Animal Technology



CERTIFICATE EXAMINATION 2003

Section A - ANIMAL TECHNOLOGY

Morning, Tuesday 10th June

(TOTAL TIME: 2½ HOURS)

Part I

Short Answer Questions

Part II

Long Answer Questions

Write your candidate number at the top of this cover

Read the instructions for each part carefully

Part I

Short answer questions

Attempt ALL Questions

Write your answers in the spaces provided

Numbers in brackets indicate the marks available for each question

You are advised to spend one and a half hours on this part

***Hand in this book, together with your answers to Part II,
at the end of the examination***

Attempt ALL parts

1. State **three** reasons why it is necessary to handle animals.

.....

.....

.....

(3)

2. List **six** signs that may indicate an animal is in pain.

.....

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.....

(6)

3. Give **three** reasons why an animal has not eaten any food over a 24 hour period.

.....

.....

.....

(3)

4. Give **one** advantage and **one** disadvantage, **different in each case**, for each of the following means of caging animals.

(a) Floor pens

Advantage.....

.....

Disadvantage.....

.....

(b) Cages on shelves

Advantage.....

.....

Disadvantage.....

.....

(c) Wheeled racks with suspended caging

Advantage.....

.....

Disadvantage.....

.....

(6)

5. Define the term "relative humidity".

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.....

(4)

6. a) List **six** laboratory animal bedding materials. (*Do not use brand names*).

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(6)

b) List **three** laboratory animal nesting materials. (*Do not use brand names*).

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(3)

7. List **six** routine tasks to be performed within a stock animal room during the course of a week.

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.....

(3)

8. Complete the following table giving **one** advantage and **one** disadvantage, **different in each case**, for each method of cleaning.

METHOD	ADVANTAGE	DISADVANTAGE
Dusting and sweeping		
Mopping		
Vacuum cleaning		
Hosing		
High pressure hosing with steam		

(10)

9. Give **two** reasons for wearing a mask in the animal unit.

.....

(2)

10. List the stages in measuring the daily food intake of group housed rats.

.....

(6)

11. Define the term “carcinogen”.

.....

.....
(2)

12. What does COSHH stand for?

.....
(1)

13. List **eight** measures designed to protect laboratory animal diets within the animal facility food storage area.

.....

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.....

.....

.....
(4)

14. Give an example, **different in each case**, of a breeding system for the following:

guinea pigs

inbred mice

(2)

15. What is a “closed colony”?

.....

.....
(2)

16. Define the term “genetically modified”.

.....

.....

.....

(3)

17. Define the term “breeding season”.

.....

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(2)

18. Define the term “oestrus”.

.....

.....

(1)

19. What are the signs of oestrus in the ferret?

.....

.....

(2)

20. Complete the following table:-

Species	Mechanism of ovulation	Age at first mating	Average litter size	Duration of economic breeding life
Outbred mouse				6 litters
NZW rabbit		Male Female		
Dog	spontaneous	Male Female		

(6)

21. a) Give **four** advantages of using fur staining as a method of identification.

.....
.....
.....
.....

(2)

b) Give **four** disadvantages of using ear punching as a method of identification.

.....
.....
.....
.....

(2)

22. Describe the correct method of transporting gas cylinders around the animal facility from the store.

.....
.....

(2)

23. How should poisonous substances be stored?

.....
.....

(2)

24. Give **two** purposes of a fire door.

.....
.....

(2)

25. What are the **three** main roles of a qualified first aider when dealing with an accident situation?

.....

.....

.....

(3)

26. With reference to the routes commonly used for the administration of medication or experimental substances, complete the following table;-

Route of administration	Definition or brief description	Is the route enteral or parenteral ?
	Injection directly into one of the chambers of the heart of an anaesthetised animal.	
Subcutaneous		
	Insertion of drops into the ear.	
Intraperitoneal		
Dermal or percutaneous		
	Inspiration of gases, vapours or aerosols into the lungs.	
	"Forced feeding". A tube is passed down the oesophagus and substances are carefully introduced	

(7)

27. Give **three** measures that may eliminate or reduce the exposure to allergens in the animal unit.

.....

.....

.....

(3)

28. Complete the following statement.

The of an allergic..... , once sensitised,
with the frequency of exposure and the level
of the

(4)

29. The ages of rats may be estimated from their physical and behavioural development. Complete the following table listing the signs of development that you would expect to see at the given ages.

Age in days	Signs of development
2-3 days	
8-10 days	
10 days approx.	
12-14 days	
49 days approx.	

(5)

30. List **four** indications of death exhibited by animals.

.....
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.....
.....

(4)

***The remaining questions, 31 – 35, all refer to the
Animals (Scientific Procedures) Act 1986.***

31. List **four** methods of confirming death as specified in the current Schedule 1 of the Act.

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.....
.....

(4)

32. State the **three** main purposes of the Act.

a)

.....

(2)

b)

.....

(2)

c)

.....

(2)

33. Complete the following statements:-

a) A “..... Procedure” is defined as any

or other procedure applied to a protected

animal, which may have the effect of causing that animal

..... or lasting harm.

(3)

b) A “protected animal” is defined as any vertebrate,
other than man including *Octopus vulgaris* and includes mammals,
..... , and from
halfway through or
It also extends to fish and from the time
they at which they become capable of

(4)

34. With reference to the Act, name the **three** types of premises which may be designated.

.....
.....
.....

(3)

35. What are the titles of the persons named on the “Certificate of Designation”?

.....
.....

(2)

End of Part I.

Part II

Long answer Questions

Attempt TWO of the three Questions

Write your answers on the paper provided

**Start each answer on a fresh sheet of paper
Write on one side of the paper only**

**Write your candidate number in the top right hand corner and
the question number in the top left hand corner of each sheet**

Equal marks are available for each question

**The approximate percentage of marks available for each
section of the question is indicated**

**Credit will be given for diagrams that make your answer
clearer**

You are advised to spend 30 minutes on each question

**You must hand in all answer sheets together with this book at
the end of the examination**

Attempt TWO questions

1. a) Describe the general principles of handling laboratory animals. **20%**

b) Explain the factors which may affect your choice of technique. **80%**

2. Compare the diets of adult stock male ferrets and guinea pigs under the following headings:-

a) Suitable ingredients **60%**

b) Form of diet and method of presentation **30%**

c) Frequency of feeding **10%**

3. You are responsible for 12 female NZW rabbits which are group housed in floor pens. During your daily checks one rabbit gives cause for concern. Describe in detail how you would check this animal and what you would be looking for.

100%

End of Part II