

Candidate Number:

The Institute of Animal Technology



CERTIFICATE EXAMINATION 2000

Section A - ANIMAL TECHNOLOGY

Morning, Wednesday 7th June

(TOTAL TIME: TWO AND A HALF HOURS)

Part I

Short Answer Questions

Part II

Long Answer Questions

Equal marks are allowed for each part

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 quarter 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. List **five** characteristics of an ideal method of identification.

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

(5)

2. State **one** method of identification for each of the following groups.
Give a **different** method for each.

	Method of identification
20 black mice	
1 pair of breeding cats	
4 white rabbits	
3 chickens	
10 albino guinea pigs	

(5)

3. List **three** methods of administering substances orally.

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

(3)

4. List **four** reasons why laboratory animals may be required to be killed.

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

(4)

5. List **four** factors that may influence your choice of method for euthanasia.

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

(4)

6. Describe the care of a clinical thermometer after use.

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

(4)

7. What is the normal body temperature of a rabbit?

.....

(1)

8. Name **two** methods of euthanasia suitable for laboratory rodents.

.....
.....
(2)

Questions 9 - 13 relate to the Animals (Scientific Procedures) Act 1986

9. List **four** responsibilities of the Certificate Holder.

.....
.....
.....
.....
(4)

10. State the titles of the **two** people that the Certificate Holder must nominate.

.....
.....
(2)

11. To what type of person is the Certificate of Designation issued?

.....
.....
(2)

12. Who is responsible for submitting the statistical return of procedures by the 31st January each year?

.....
(1)

13. Procedures are classified within **four** severity bands under the Act. What are they?

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

(4)

14. What is meant by the term 'stocking density' in relation to the housing of animals?

.....
.....

(2)

15. In which Home Office document would you find the guidelines for stocking density?

.....
.....

(2)

16. Give **two** factors, which limit the number of animals that may be housed in a room.

.....
.....

(2)

17. Complete the following statement by inserting the missing word in the spaces provided:

Inbreeding is the mating of individuals that are _____ to each other. A strain is said to be inbred when it has been maintained by mating _____ x _____ or _____ x _____ for _____ consecutive _____.

(7)

18. State **one** way, **different** in each case, that the onset of oestrus may be detected in the:

rabbit
.....
..... (1)

mouse
.....
..... (1)

hamster
.....
..... (1)

19. Define the following terms:

implantation
.....
..... (2)

parturition
.....
..... (2)

gestation
.....
..... (2)

20. The table below shows breeding information for three common laboratory species. Complete the **five** empty boxes:

	Mechanism of ovulation	Age at first mating	Gestation period	Weaning age	Recurrence of oestrus after parturition
Cat	induced by mating or spontaneous	F 9 months M 12 months		6 - 8 weeks	
Guinea pig		F 3 months M 4 months	about 9 wks	2 weeks (180 - 200g)	post-partum then end of lactation
Syrian hamster	spontaneous		16 days		post-partum then end of lactation

(5)

21. What is the term used for the number of young dying between birth and the end of lactation?

.....

How is this figure usually expressed?.....

(2)

22. State **four** locations that should be **avoided** when siting a maximum / minimum thermometer in the animal room.

.....

.....

.....

.....

(4)

23. State **three** methods of arranging cages/racks within the animal room.

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

(3)

24. Complete the following statement by inserting the missing word in the spaces provided:

Ideally, the design of the animal house is aimed to provide maximum _____ in the use of animal rooms for different _____.

(2)

25. Give **three** reasons for handling an experimental animal.

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

(3)

26. Give **three** reasons why it is important to be trained and competent when handling animals.

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

(3)

27. List **three** observable characteristics in a young rat that would indicate it is approximately ten days old

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

(3)

28. State **three** occasions when it is necessary to sex laboratory animals.

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

(3)

29. State **two advantages** for each of the following cage features:

solid floor

.....

(2)

grid floor

.....

(2)

30. Name **two** types (not manufacturers) of cage washing machines.

.....

.....

(2)

31. Complete the table to name **five** bedding materials (not trade names) and give **one** advantage and **one** disadvantage for each, **different** in each case.

Bedding Material	Advantage	Disadvantage

(15)

End of Part I

Part II

Long answer questions

Attempt THREE of the four questions

Write your answers on the paper provided

Start each answer on a fresh sheet of paper

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

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

Credit will be given for diagrams which make your answer clearer

You are advised to spend 25 minutes on each question

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

Please turn over

Attempt THREE questions

- 1.** (a) What does the Animals (Scientific Procedures) Act 1986 regulate and which government office enforces this Act? **10%**
- (b) Name and briefly describe the three documents that need to be in place before work under the above Act can start. **30%**
- (c) Define the term 'NACWO' and describe the NACWO's role. **60%**
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- 2.** (a) Distinguish between the terms 'oestrus' and 'oestrous cycle'. **10%**
- (b) List the information that may be included in records for the management of a breeding colony. **20%**
- (c) Briefly describe a breeding system suitable for ferrets. **70%**

- 3.** (a) Define the term 'euthanasia'. **10%**
- (b) Describe a method of euthanasia suitable for a group of ten adult rats by the inhalation of carbon dioxide. **80%**
- (c) State three methods by which death can be confirmed before disposal of the cadaver. **10%**

- 4.** Laboratory animals spend almost all of their lives within a cage or pen. With this in mind describe the essential features for housing a laboratory rabbit. **100%**

End of Part II