

Candidate Number:

The Institute of Animal Technology



CERTIFICATE EXAMINATION 2002

Section A - ANIMAL TECHNOLOGY

Morning, Wednesday 12th June

(TOTAL TIME: 2 1/2 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.** List the **three** documents that have to be authorised by the Home Office before a regulated procedure can be performed upon a protected animal.

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.....
.....

(3)

- 2.** Define the following terms:

In-breeding

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(2)

Inbred strain

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(2)

Random breeding

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(2)

Out-breeding

.....

(2)

- 3.** Define the following:

Pre weaning mortality rate

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(4)

Economic breeding life

.....

(4)

4. Define the term “zoonosis”.

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(4)

5. Give **two** methods by which it would be safe to dispose of the carcass of a rat that was suspected to have died from an infectious disease.

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(4)

6. State **one** method for the safe disposal of hypodermic needles.

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(1)

7. Give **three** reasons why appropriate techniques should be used when handling animals.

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(3)

8. Give **four** characteristics of an ideal method of identification.

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(4)

9. List **five** ways in which inappropriately applied identification could harm animals.

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(5)

10. Name **three** factors which influence the choice of methods of identification.

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.....

(3)

11. Give **three** consequences of failing to sex animals correctly.

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(3)

12. State **two** reasons for assessing health status when selecting animals for breeding.

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(2)

13. Name these **different metals**, which are commonly used for animal cages, fixtures and fittings.

- a) is used for its relative lightness.
- b) is very strong, does not oxidise or contaminate but is attacked by acid.

(2)

14. Name these **different plastics**, which are commonly used for animal cages, fixtures and fittings.

- a) is durable, autoclavable and may be clear.
- b) is cheap but brittle, may be used for disposable rodent caging.
- c) is very hard, often used for bottle tops.

(3)

15. List **five** essential features of the design of animal cages and pens.

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(5)

16. Complete the following statements, with regard to the fundamental principles of the design of animal facilities:

a) The positioning of services and facilities should be largely governed by the within the unit.

b) Ideally the design is aimed to provide maximum of the use of animal rooms for different and purposes.

c) The six essential services for the well being of the animals are , , ,and drainage.

(9)

17. List **four** places to **avoid** siting a maximum-minimum thermometer

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(4)

18. State **two** different methods of measuring relative humidity

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(2)

19. Complete the following table:

Species	Gestation Period (days)	Average litter Size	Age at weaning (days)
Syrian Hamster			21
Out bred Mouse			
Out bred Rat	20 - 23		
Guinea Pig			
Dog		4	
Cat	63		

(7)

20. Name **four** factors that should be considered before lifting a load manually.

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

(4)

21. Give **two** reasons why personal hygiene is important in the animal unit.

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(2)

22. Give **two** reasons why accidents should be reported.

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(2)

23. State the main danger of:

a) using an extension cable whilst it is coiled.

.....

b) using multiple adapters.

.....

(2)

24. Give **two** possible consequences of having an electric current pass through the body.

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(2)

25. For each of the following, give **one** possible hazard associated with use and **one** basic safety precaution which should be employed when using them.

Make your answers different in each case.

a) Ultra-violet light sources;

Hazard

Safety precaution

b) X-rays;

Hazard

Safety precaution

c) Radioactive materials;

Hazard

Safety precaution

d) Lasers;

Hazard

Safety precaution

(8)

26. a) Define what is meant by the term "hazard".

.....
.....

(2)

b) Define what is meant by the term "risk".

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.....

(2)

27. a) Give **three** enteral routes by which substances may be administered.

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(3)

b) Give **four** parenteral routes by which substances may be administered.

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(4)

28. List **five** causes of ill health in laboratory animals.

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(5)

29. Why is it important to include ascorbic acid into the diets of primates and guinea pigs?

..... (2)

30. Give **two** simple methods to relieve the condition of sore hocks in rabbits.

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..... (2)

31. List **three** factors that must be considered when deciding the capacity of water bottle to use.

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..... (3)

32. Give an example of how you may present water, **different in each case**, to the following species:

- a) rats
- b) rabbits
- c) dogs (3)

33. Name **two** tasks that may be delegated to assistants not holding a Home Office Licence whilst within reach of the Personal Licensee.

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..... (2)

34. a) What is outlined by Schedule 1 of the Animals (Scientific Procedures) Act 1986?

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(2)

b) Who may perform the methods outlined in Schedule 1?

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(2)

35. List the basic procedure for dealing with a chemical spillage.

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(3)

36. State the age at which the following events occur in an outbred mouse, the answer should be given in days.

Stage of development	Answer in days
The pinnae start to lift from the head?	
Most of the body covered by short, fine fur?	
The teats become visible and the upper incisors erupt?	
The eyelids open?	
They start to move out of the nest?	

(5)

37. Complete the following table:

	Birth Weight	Weaning Weight	Adult Weight
Out bred Mouse	1 - 1.5(g)		
Out bred Rat			
Guinea Pig		180 - 200(g)	
Dutch Rabbit			2.5 - 3.5(kg)
NZW Rabbit			

(6)

End of Part I

Please Turn Over →

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 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) With reference to the Animals (Scientific Procedures) Act 1986 state the main responsibilities of the following:

- i) Home Office Inspector
- ii) Personal Licensee
- iii) Certificate Holder

80%

b) Define the following terms:

- i) Protected Animals
- ii) Regulated Procedures

20%

2. Briefly describe how the following elements of the environment may affect animals and explain the importance for the maintenance of optimum conditions

- a) light
- b) noise
- c) other animals
- d) personnel
- e) temperature
- f) humidity

100%

3. a) Name **five** pests or organisms which may adversely affect animal foodstuffs and explain how they may be recognised.

50%

b) Describe simple routine and procedure to prevent infestation of laboratory animal diets.

50%

End of Part II