Candidate Number: .....

The Institute of Animal Technology

CERTIFICATE EXAMINATION 2001

Section A - ANIMAL TECHNOLOGY

Morning, Wednesday 13th 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 **three** methods for personal hygiene adopted in animal units for the protection of the health and well being of the animals.

……..……..

……..…..

……

(3)

2. Give a use, **different** for each, of the following within the animal unit:

incinerator ..…….……..….

……..

(1)

autoclave ..…….

……

(1)

washing machine ……..……..

……

(1)

macerator ……..……..

……

(1)

3. Complete the following table of terms relating to animal breeding:

Term	Definition
	The length of time from mating to giving birth
	The organ by which the foetus is attached to the uterus
	The act of giving birth
	The secretion of milk for suckling
	The act of mating

(5)

4. Give **two** special features that may be incorporated into fire alarms specifically designed for animal units.

……

……

……

……

(2)

5. State a type of fire extinguisher, **different** in each case, suitable for application in fires involving the following materials:

flammable gases...…..……...….

(1)

flammable liquids…….

(1)

paper, wood and fabric …..……..……..

(1)

electrical equipment……..……..

(1)

6. Give **two** examples of the ways in which food can be used to provide environmental enrichment for laboratory animals.

……

……

(2)

7. From the list provided circle **five** ingredients that you would expect to find in a pelleted laboratory diet suitable for rabbits:

middlings	ground oats	ascorbic acid	bran
white fishmeal	grassmeal	linseed oil	wheatmeal
dark fishmeal	vitamins/mineral supplements	gravy	sugar beet

(5)

8. **a)** Name **two** species of laboratory animals that require the inclusion of ascorbic acid in their diet.

.....

.....

(2)

b) List **three** methods of including ascorbic acid in the diet of such animals.

.....

.....

.....

(3)

9. Complete the following table to give **one** advantage and **one** disadvantage for these methods of diet presentation and name a species for which each method is suitable.

Method	Advantage	Disadvantage	Species
Food bowl			**Dog**
Hopper			
Wire meshed basket			

(4)

10. State **one** sign of infestation or deterioration of diet, **different** in each case, caused by each of the following pests:

flour moth .....

(1)

grain weevil .....

(1)

grain beetle .....

(1)

11. Name a laboratory animal species, **different** in each case, for which each of the following statements apply:

has a gestation period of 42 days ……..……..……

(1)

first mated at 6 weeks of age ……

(1)

ovulation is induced by mating ……..……

(1)

has a post-partum recurrence of oestrus…..……..……..……

(1)

12. Define the following terms:

enteral……..……

……..……

(2)

intraperitoneal ……..……..…

……..……

(2)

intradermal ……..……

……..……

(2)

13. Define the term 'euthanasia'.

……

……..……

(2)

14. List **five** reasons why laboratory animals are killed.

……

……

……

……

……

(5)

15. List **two** physical and **two** chemical methods of euthanasia.

……

……

……

……

(4)

16. State **two** different adverse effects of each of the following on laboratory animals:

a) light ……

(1)

……

(1)

b) personnel ……

(1)

……

(1)

17. Define the term 'relative humidity'.

……

……

……

……

(4)

18. Give **two** reasons why there is a need to maintain records of temperature and relative humidity that are independent of main control systems.

……

……

(2)

19. Give **six** properties of an ideal bedding material.

……

……

……

……

……

……

(6)

20. Give **three** reasons for providing nesting materials for laboratory animals.

……

……

……

(3)

21. Give **three** reasons for rejecting a bale of hay for laboratory animal use.

……

……

……

(3)

22. What do the letters '**COSHH**' stand for?

……

(1)

23. List **six** daily work procedures suitable for the care and maintenance of guinea pigs.

……

……

……

……

……

……

(6)

24. Give **one** function of circuit breakers.

……

(1)

25. What is the purpose of portable appliance testing?

……

(1)

26. Give **four** precautions you would take when using equipment with a long electrical flex in the animal unit.

……

……

……

……

(4)

27. State **two** roles of a qualified First Aider.

……

……

(2)

28. List **two** actions to be taken by someone who is not qualified in First Aid if they come across a person who is unconscious.

……

……

(2)

29. State **two** reasons why it is necessary to perform regular health checks on laboratory animals.

……

……

(2)

30. List **six** signs that, if found in a recently vacated rabbit cage, would indicate the previous occupant was unwell.

……

……

……

……

……

……

(6)

31. State **three** signs that may indicate an animal is in pain.

……

……

……

(3)

32. What is the normal rectal temperature range for small mammals?

……

(1)

Questions 33 - 37 relate to the Animals (Scientific Procedures) Act 1986

33. Give **five** items of information that a Personal Licensee is required to record on a cage label for animals undergoing scientific procedures.

……

……

……

……

……

(5)

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

A "_____ procedure" is defined as any _____ or other _____ procedure applied to a protected animal, which may have the effect of causing that animal _____, suffering, _____ or lasting harm.

(5)

35. Give a schedule 1 method, **different** for each, by which the following may be humanely killed.

3kg rabbit ……

(1)

600g guinea pig ……

(1)

20g mouse ……

(1)

36. List **four** methods for confirming death specified in the current Schedule 1 of the Animals (Scientific Procedures) Act 1986.

……

……

……

……

(4)

37. What are the **three** main purposes of the Act?

a/ ……

……

(2)

b/ ……

……

(2)

c/ ……

……

(2)

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 answer 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) Give **two** different methods for each of the following types of identification:

i) non-invasive
ii) subtractive
iii) additive

25%

(b) Explain the correct application and precautions you would take to use **one** of the methods from each of i), ii) and iii) above. For each example you have given explain the limitations of this method for a named species.

75%

2. Briefly describe two suitable breeding systems for Syrian hamsters and explain how behavioural and economic factors should be taken into account when selecting these systems.

100%

3. A laboratory animal that was suspected of carrying a zoonotic disease had a blood sample taken for analysis prior to the animal being killed.

(a) Describe the precautions that should be taken for the safe handling and disposal of all contaminated materials resulting from these procedures.

80%

(b) Explain why these precautions are necessary.

20%

End of Part II