

2914/105
ANIMAL HUSBANDRY, MUSEUM
AND HERBARIUM TECHNIQUES
Oct./Nov. 2018
Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL

DIPLOMA IN APPLIED BIOLOGY

MODULE I

ANIMAL HUSBANDRY, MUSEUM AND HERBARIUM TECHNIQUES

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:

Answer booklet;

Non-programmable scientific calculator (battery operated).

*This paper consists of **TWO** sections; **A** and **B**.*

*Answer **ALL** the questions in section **A** and any **THREE** questions from section **B**.*

*Each question in section **A** carries **4** marks while each question in section **B** carries **20** marks.*

Maximum marks for each part of a question are indicated.

Candidates should answer the questions in English.

This question paper consists of 3 printed pages.

Candidates must check the question paper to ascertain that all the pages are printed and that no questions are missing.

SECTION A (40 marks)

Answer **ALL** the questions in this section.

1. (a) A common feature of an animal house is that the floor slopes upwards at the point of contact with the wall. Give reason. (1 mark)
- (b) Name any **three** materials used in the construction of an animal house floor. (3 marks)
 Terazo - Quarry tiles
 - plain cement
 - Asphalt
2. Explain the importance of managing the following factors in an animal house: (2 marks)
 (a) humidity; (2 marks)
 (b) lighting. (2 marks)
3. State any **four** factors that should be considered in choosing a suitable humane killing method for laboratory animals. (4 marks)
 - Species - Size
 - Purpose
 - Behaviour
4. Explain how an older hamster would be picked from an animal house. (4 marks)
5. Identify any **four** administrative records kept in the laboratory animal house. (4 marks)
 - Drug - Health
 - Water book
6. List the advantages of wet preparations of museum specimens. (4 marks)
7. State the functions of a museum. (4 marks)
 - Research ~~and~~ - Social role
 - Entertainment
 - Employment
 - Education
8. Describe the dry skin method of conserving mammal specimens in the museum. (4 marks)
9. Describe the different types of nets used for collecting insects. (4 marks)
 - Sweep net
 - Butterfly net
10. Outline the process of filing specimen in a herbarium. (4 marks)

SECTION B (60 marks)

Answer any **THREE** questions from this section.

11. Describe the different physical forms of laboratory animal feeds. (20 marks)
12. (a) Describe the following procedures as carried out on mice: (6 marks)
 (i) sexing; (8 marks)
 (ii) handling.

(b) Describe the **three** suitable methods of identifying the laboratory animals. (6 marks)

Quarantine
Quarantine

13. (a) Compare and contrast the breeding cycles of a rat and a mouse. (10 marks)

(b) Explain the importance of a herbarium. (10 marks)

14. (a) Identify the information that should be included in the field notebook during the collection of a herbarium specimen. (6 marks)

(b) Outline the preparation of herbarium specimen after collection in the fields. (14 marks)

15. (a) (i) Outline the methods of defleshing bones for museum display. (5 marks)

(ii) Explain the display of bones in a museum. (7 marks)

(iii) Describe the sub-divisions of an animal house. (8 marks)

- Adminstration rooms
- Experimental rooms
- Rooms for healthy stock designed for experiments
- Quarantine rooms
- Isolation for unhealing animals
- Accommodation for equipment feeds
- Rooms for changing of working personnel
- Rooms for "growing" animals
- Corridors for access
- pregnant animals

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to study
Humidity: 50-65%
Age: 3 WKS
Gestation: 4-5 days
Litter size: 4
Frequency: 3 p.a.
Gestation Per: 21
opt temp: 21°C
accommadation
accommad

12
Rat
Age: 3 WKS
Gestation: 4-5 days
Litter size: 4
Frequency: 3 p.a.
Gestation Per: 21
opt temp: 21°C
accommadation
accommad
Rat
post parturition
10-20 hrs
4-5 days
post parturition
1 mice

- Extinct seeds
- Teaching botany
- Specimen label
- Pharmacognosy
- Taxonomic research
- Estimating global diversity
- Conserving keystone species
- plant population
- proper identification
- Employment