To scan - Exam

2404/305
ANIMAL AND PLANT HUSBANDRY,
PHARMACOLOGY, TOXICOLOGY,
ENTOMOLOGY AND PLANT PATHOLOGY
Oct./Nov. 2018
Time: 3 hours

THE KENYA NATIONAL EXAMINATIONS COUNCIL

DIPLOMA IN APPLIED BIOLOGY

ANIMAL AND PLANT HUSBANDRY,
PHARMACOLOGY, TOXICOLOGY,
ENTOMOLOGY AND PLANT PATHOLOGY

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 paper consists of 3 printed pages.

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

SECTION A (40 marks)

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

1. Explain the benefits of using biological control agents in eliminating plant pests. (4 marks)

2. State the purpose for seedbed preparation. (4 marks)

3. Differentiate between the male and female diosophila. (4 marks)

4. Distinguish between:

   (a) supplements and concentrates as used in animal feeding. (2 marks)
   (b) economic threshold and economic injury level in relation to insect pest populations. (2 marks)

5. The following are two cases of drug action in the body:

   Case I - A chelating agent is administered to a victim of lead poisoning to inactivate the heavy metal.
   Case II - In a 45 year old man, administration of Noradrenaline raised arterial pressure by acting on the heart while Histamine lowered the arterial pressure by causing vasodilation. Distinguish between the two types of drug antagonisms. (4 marks)

6. Explain the following terms:

   (a) tolerance; (2 marks)
   (b) dependence. (2 marks)

7. Explain the toxicity of tetanospasmin. (4 marks)

8. Draw a labelled diagram of a typical insect leg. (4 marks)

9. (a) Distinguish between monozygous and Harem systems of breeding. (2 marks)

   (b) List any **two** advantages of the Harem system of breeding. (2 marks)

10. Name the order for each of the following insects:

    (a) wasps;
    (b) crickets;
    (c) termites;
    (d) moths. (4 marks)

SECTION B (60 marks)

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

11. (a) Give the commercial applications of ethenes in plant growth. (3 marks)

(b) Explain the:

(i) functions of water in seed germination; (10 marks)
(ii) effects of gibberellins in plant growth. (7 marks)

12. (a) Explain **four** precautions undertaken to ensure that specific pathogen free (SPF) animals are derived and maintained. (4 marks)

(b) Discuss diapause in insects. (16 marks)

13. (a) Explain the different barrier considerations relating to animal house. (6 marks)

(b) Discuss the methods used in killing laboratory animals. (14 marks)

14. Explain:

(a) the effects of ethyl alcohol consumption on the GIT; (10 marks)

(b) why oral administration of a drug lowers its bioavailability. (10 marks)

15. Describe the various forms of necrosis as a manifest of plant disease symptom. (20 marks)

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