



FIJI NATIONAL UNIVERSITY
COLLEGE OF AGRICULTURE, FISHERIES AND FORESTRY

Trade Diploma in Agriculture, Semester I – 2018, Final Examination

ENT 411: Basic Agricultural biology

Time Allowed: 3.00 hours plus (10 minutes reading time)

Total Marks: 100

INSTRUCTIONS:

1. This paper consists of ten pages including one Answer Sheet.
2. Please check to see that all your paper is complete.
3. Answer all the Objective Type Questions on the Answer Sheet and Descriptive Type Question in the Answer Booklet only.
4. The Answer sheet of the Objective Type Questions will be collected 30 Minutes after the start of Examination.
5. No written or printed material and mobile phones are allowed in the examination hall.
6. Marks allocated for each question appears at the side of each question so allocate your time accordingly.
7. This paper has two parts. The first part contains Objective Type Questions which is having Three Sections – A, B and C. The second part contains Descriptive Type Questions.

I. OBJECTIVE TYPE QUESTIONS

(50 Marks)

To be answered only on the Answer Sheet.

Section A: Fill in the blanks.

(15 Marks)

Section B: True or False Questions.

(15 Marks)

Section C: Multiple choice Questions.

(20 Marks)

II. DESCRIPTIVE TYPE QUESTIONS

(50 marks)

There is one part in descriptive type questions. It is compulsory to attempt five (5) questions. Write your answer on the Answer Booklet. Answer every question from a new page to facilitate evaluation.

I. OBJECTIVE TYPE QUESTIONS

Total Marks: 50

A. Fill in the blanks. (15 x 1= 15 Marks)

1. All living organisms share similar characteristics. The characteristic that best supports the statement below is
“Animals move to find food, to take shelter and to also run away from their natural enemies. Plants on the other hand do not move from one locality to another like animals, however, they move in position to face the sunlight”.
2. All living organisms share similar characteristics. The characteristic that best supports the statement below is
“Every living organism has the ability to produce offsprings to keep their species alive. The modes or types of reproduction may vary from one species to another but the underlying fact remains that all living organisms in one or way or another have the ability to produce their offsprings”.
3. All living organisms share similar characteristics. The characteristic that best supports the statement below is
“All living organisms are sensitive to their environments. Insects for e.g. have very special sensors to sense the changing temperatures in their surroundings. Likewise for plants and for other animals”.
4. All living organisms share similar characteristics. The characteristic that best supports the statement below is
“Living organisms required food for survival. Animals require food for respiration while plants require mineral from the soil”.
5. All living organisms share similar characteristics. The characteristic that best supports the statement below is
“Living organisms have their own natural processes in getting rid of unwanted materials from their system. For instance unwanted water is usually excreted from both animals and plants”.
6. All living organisms share similar characteristics. The characteristic that best supports the statement below is
“Living organisms have their own natural processes in getting rid of unwanted materials from their system. For instance unwanted water is usually excreted from both animals and plants”.

7. All living organisms share similar characteristics. The characteristic that best supports the statement below is
"Every living organism has the ability to turn food into energy".
8. All living organisms share similar characteristics. The characteristic that best supports the statement below is
"Every living organism has the ability to grow larger and stronger. Living organisms goes through various growth and developmental stages in their lives. In doing so, they grow stronger and larger from one life stage to another".
9. The inactive stage of an insect is known as the
10. The are the immature stages of an insect that look like young adults
11. For insect pests, reproduction usually occurs during the stage.
12. Incomplete metamorphosis is also known as metamorphosis
13. Insects with metamorphosis undergoes three life stages.
14. The green pigment that is present in all plant species is known as
15. The outer covering of an insect body which protects it from injuries is known as the

B. True or False questions: Select the correct answer. (15 x 1= 15 Marks)

16. The economic injury level refers to the minimum number of insects that causes economic damage
17. The economic threshold refers to the number of insects that once detected, will indicate that management is needed.....
18. Taxonomy is the process of grouping, describing and naming living organisms of similar characters.....
19. Classification is the science used in the process of grouping, describing and naming living organisms of similar characters.....
20. The Biosecurity Promulgation 2008 is made up of seventeen sections.....
21. A comb cutter is used to cut and remove old and worn out combs in beekeeping.
22. These accidental introductions of living species are sometimes referred to as "alien" or "exotic" or "non-native" species
23. All organisms that are classified under the class insecta have six pairs of legs
24. All organisms that are classified under the phylum arthropoda have three segmented bodies.....
25. The abdomen of an insect generally contains the wings of an insect.
26. The reproductive parts of an insect are generally located on the thorax.....
27. The abdomen of an insect contains the antennae.

28. In beekeeping a veil is worn over the cloths so that the bees cannot get under them to sting a person.
29. Giant African Snail, an invasive species is an important pest that has already established its population in Fiji.....
30. The taro beetle is an important flora in Fiji because it causes a lot of damage to our taro industry

C. Multiple choice questions: Select the correct answer. (20x1=20 Marks)

31. are those insects which occur mostly during a particular part of the year.

A. Seasonal pests	B. Regular pests
C. Sporadic pests	D. Migrant Pests

32. The assume pest status occasionally in certain years in a few isolated localities

A. Seasonal pests	B. Regular pests
C. Sporadic pests	D. Migrant Pests

33. The are those insects that occur most frequently on a crop and such insects have close association with a particular crop.

A. Seasonal pests	B. Regular pests
C. Sporadic pests	D. Migrant Pests

34. The are highly mobile and can infest crops for short periods of time through movement.

A. Seasonal pests	B. Regular pests
C. Sporadic pests	D. Migrant Pests

35. is used occasionally in the literature and refers to a minor pest species that could become a major pest following some change in the agro ecosystem

A. Potential pests	B. Serious pest
C. Secondary pest	D. Economic pest

36. The family of bees that are known to be the major producers of honey is known as the

A. Apidae	B. Meliponidae
C. Bombidae	D. Lycanidae

37. Honeybees belong to the order

A.	Coleoptera	B.	Diptera
C.	Hymenoptera	D.	Lepidoptera

38. The is a commonly introduced european species of honeybees to most countries due to its good honey gathering quality.

A.	<i>Apis mellifera</i>	B.	<i>Apis indica</i>
C.	<i>Apis dorsata</i>	D.	<i>Apis florea</i>

39. The honeybees were introduced in the by European missionaries in Fiji.

A.	middle of the eighteenth century		Beginning of the twentieth century
C.	middle of the nineteenth century		middle of the seventeenth century

40. A is used to brush off the bee from a honey comb before it is taken away for extraction.

A.	bee brush	B.	smoker
C.	cold uncapping knife	D.	Conical queen cage

41. A is used to drive the bees out of supers in which lie the frames containing honey and out of brood boxes also, if needed. It also breaks down bee communication.

A.	bee brush	B.	smoker
C.	cold uncapping knife	D.	Conical queen cage

42. The is used to remove the caps that seal the honey cells after filling before the combs are placed in the honey extractor..

A.	bee brush	B.	smoker
C.	cold uncapping knife	D.	Conical queen cage

43. Ais used in the transportation of queen bees

A.	bee brush	B.	smoker
C.	cold uncapping knife	D.	Conical queen cage

44. In a bee colony the males are known as

A.	<i>drones</i>	B.	<i>kings</i>
C.	<i>workers</i>	D.	<i>queens</i>

45. In a bee colony the usually dies after copulation.

A.	<i>drones</i>	B.	<i>kings</i>
C.	<i>workers</i>	D.	<i>queens</i>

46. Which of the following best describes taro beetle.....

A.	Established invasive species	B.	<i>Apis mellifera</i>
C.	Non-established invasive species	D.	smoker

47. The Giant African Snail is already present in

A.	Northern parts of Fiji	B.	Western parts of Fiji
C.	Eastern parts of Fiji	D.	None of the above

48. The..... is a commonly introduced European species of honeybees to most countries due to its good honey gathering quality.

A.	<i>Apis mellifera</i>	B.	<i>Apis indica</i>
C.	<i>Apis dorsata</i>	D.	<i>Apis florea</i>

49. The Asian Gypsy moth is already present in

A.	Northern parts of Fiji	B.	Western parts of Fiji
C.	Eastern parts of Fiji	D.	None of the above

50. The taro beetle is present in

A.	<i>Rotuma</i>	B.	<i>Koro</i>
C.	<i>Kadavu</i>	D.	<i>None of the above</i>

II. Descriptive type Questions

(40 Marks)

Note: Attempt FIVE Questions Only. FIVE questions from this part are compulsory. All carries ten (10) marks each.

1) Classification of phylum arthropoda up to class level

- i) Mr. Anthony, a cabbage farmer showed you an arthropod and asked you what it was. You observed that it has all the characteristics of an insect. List and explain five characteristics of an insect that distinguish it from all other arthropods. (5 marks)
- ii) You are to explain in the form of a drawing to a Yr 13 student about the characteristics of an insect. Draw and label the morphological structure of an insect. (5 marks)

2) Distribution, life cycle and economic importance of selected agriculturally important flora and fauna of Fiji. Categories of pest and their general life cycle

- i) You were asked by Mr. Jone, a taro farmer about how insect pests develop. Draw and label the life cycle of an insects that undergoes complete metamorphosis (5 marks)
- ii) Some other insects undergo incomplete metamorphosis. Draw and label the life cycle of an insects that undergoes incomplete metamorphosis (5 marks)

3) Apiculture

- i) You were approached by Mrs. Prasad, a beekeeper from the Sigatoka valley to tell her more about the morphological structures of a honeybee. Draw and label the morphological structures of a honeybee. (5 marks)
- ii) Mr. David, a beekeeper from Tailevu asks you about the different equipments used in beekeeping. You decided to introduce five beekeeping equipments to Mr. David. Name five beekeeping equipments (2.5 marks) and briefly explain their function. (2.5 marks)

4) Definition of pest, pest organisms, causes of pest outbreaks

- i) You were tasked to present the importance of classification of living organisms to some taro farmers in Namosi. List and explain five reasons on why classifications are important to taro farmers (10 marks)

5) Plant protection equipment and their Function

- i) You visited a group of young farmers in Naitasiri to demonstrate the proper usage of a knapsack sprayer. Draw and Label the structure of a knapsack sprayer. (5 marks)
- ii) The same group of young farmers was interested to know more about the proper maintenance and care of a mist blower. Explain five important guidelines that a farmer should follow when keeping a mist blower. (5 marks)

Student I D No..... Date:

Student I D No..... Date:

Marks obtained:

Trade Diploma in Agriculture First Year First Semester Final Examination- 2018

ENT 411: Basic Agricultural Biology

Objective Type Questions - Answer Sheet

Time: 0.30 hrs.

Total Marks: 50

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