

Fiji National University
College of Agriculture, Fisheries and Forestry
Final Examination: 2014
Bachelor of Science in Agriculture – Year 3: Trimester I
ENT 603 - Nematology

TOTAL MARKS: 50

TIME ALLOWED: 3:10 HOURS

INSTRUCTIONS:

Answer all questions in the answer booklet.

- Number your answers correctly in the provided answer booklet.
- Write your student ID number on all pages including additional sheets.
- Write your student ID number on question paper.
- Don't write answers on question paper; write answers only in answer book let.

“MOBILE PHONES ARE PROHIBITED IN THE EXAMINATION HALL”

SECTION NO.	TYPE	TOTAL MARKS
I	MULTIPLE CHOICES	10
II	SHORT ANSWER QUESTIONS	10
III	FILL IN THE BLANKS	5
IV	DIFFERENTIATE	5
V	LONG ANSWER QUESTIONS	10
VI	LONG ANSWER QUESTIONS	10
TOTAL MARKS		50

Q I. Choose the correct answer from the following (0.5 marks each)

10 Marks

1. The scientific name of Root-Knot Nematode is
 - a. *Longidorus*
 - b. *Heterodera*
 - c. *Xiphinema*
 - d. *Meloidogyne*
2. The scientific name of Needle Nematode is
 - a. *Longidorus*
 - b. *Heterodera*
 - c. *Xiphinema*
 - d. *Meloidogyne*
3. The scientific name of Dagger Nematode is
 - a. *Longidorus*
 - b. *Heterodera*
 - c. *Xiphinema*
 - d. *Meloidogyne*
4. The scientific name of seed gall Nematode is
 - a. *Longidorus*
 - b. *Anguina tritici*
 - c. *Xiphinema*
 - d. *Meloidogyne*
5. The scientific name of Citrus Nematode is
 - a. *Tylenchulus*
 - b. *Heterodera*
 - c. *Xiphinema*
 - d. *Meloidogyne*
6. The ectoparasitic Nematode is
 - a. *Tylenchulus*
 - b. *Heterodera*
 - c. *Xiphinema*
 - d. *Meloidogyne*
7. The sedentary semi endo parasitic Nematode is
 - a. *Tylenchulus*
 - b. *Heterodera*
 - c. *Xiphinema*
 - d. *Meloidogyne*
8. The sedentary endo parasitic Nematode is
 - a. *Tylenchulus*
 - b. *Longidorus*
 - c. *Xiphinema*
 - d. *Meloidogyne*
9. The odonto stylet is present in
 - a. *Tylenchulus*
 - b. *Heterodera*
 - c. *Xiphinema*
 - d. *Meloidogyne*
10. Slow decline is the symptom caused by
 - a. *Tylenchulus*
 - b. *Heterodera*
 - c. *Xiphinema*
 - d. *Meloidogyne*

11. Cyst is formed in
- | | |
|-----------------------|-----------------------|
| a. <i>Tylenchulus</i> | c. <i>Xiphinema</i> |
| b. <i>Heterodera</i> | d. <i>Meloidogyne</i> |
12. Sexual dimorphism can be seen in
- | | |
|-----------------------|-----------------------|
| a. <i>Tylenchulus</i> | c. <i>Meloidogyne</i> |
| b. <i>Heterodera</i> | d. All |
13. Sense organs present inside the nematode body is
- | | |
|------------|-------------|
| a. Amphids | c. Phasmids |
| b. Both | d. None |
14. Rice root nematode is caused by
- | | |
|---------------------------|-----------------------|
| a. <i>Hirschmanniella</i> | c. <i>Xiphinema</i> |
| b. <i>Heterodera</i> | d. <i>Meloidogyne</i> |
15. The root-knot nematode was first discovered by Berkley in 1855 in
- | | |
|----------------|------------|
| a. Cucumber | c. Cabbage |
| b. Cauliflower | d. Carrot |
16. Bacteria act as biological control of plant parasitic nematode
- | | |
|-----------------------|--------------------|
| a. <i>Xanthomonas</i> | c. <i>Bacillus</i> |
| b. <i>Pseudomonas</i> | d. none |
17. The larval stage present inside the egg shell is
- | | |
|-------|-------|
| a. J1 | c. J3 |
| b. J2 | d. J4 |
18. Cyst is produced in the life cycle of nematodes
- | | |
|---------------------|----------------------|
| a. <i>Globodera</i> | c. <i>Heterodera</i> |
| b. Both | d. <i>None</i> |
19. Cyst nematode causing infection in solanaceous crop mainly potato
- | | |
|-----------------------|----------------------|
| a. <i>Globodera</i> | c. <i>Heterodera</i> |
| b. <i>Tylenchulus</i> | d. <i>Xiphinema</i> |
20. Larvae embedded inside the seed embryo and remain in dormant condition for longer period of time.
- | | |
|---------------------------|-----------------------|
| a. <i>Longidorus</i> | c. <i>Xiphinema</i> |
| b. <i>Anguina tritici</i> | d. <i>Meloidogyne</i> |

Q II. Write short notes on any five

10 Marks

- a. Root Knots/ galls
- b. Sexual dimorphism with example
- c. Stylet
- d. Nematode distribution
- e. Parthogenesis
- f. Typical life cycle of plant parasitic nematode
- g. Soil solarization
- h. Annulation
- i. History of phytonematology
- j. Classification of plant parasitic nematode on the basis of parasitism

Q III. Give the name of nematode infecting the following crops:

5 Marks

- 1. Potato-----
- 2. Soyabean-----
- 3. Citrus-----
- 4. Vegetables crops-----
- 5. Pulses-----
- 6. Cereals-----
- 7. Rice-----
- 8. Wheat-----
- 9. Banana-----
- 10. Sugarbeet-----

Q IV Differentiate between (Answer any two questions)

5 Marks

- 1. Root knot nematode and cyst nematode
- 2. Odonto stylet and Stomato stylet
- 3. *Heterodera* and *Globodera*

Q V. Describe integrated nematode management in detail, its concept and principle. Also describe the following methods adapted **10 Marks**

- a. Cultural method
- b. Biological method
- c. Physical method
- d. Chemical method

Q VI. Describe any one of the following **10 Marks**

Systematic position, Nematode Biology, Nature of damage, General symptoms, economic importance, disease cycle and management of root- knot nematode, *Meloidogyne* spp

Or

Systematic position, Nematode Biology, Nature of damage, General symptoms, economic importance, disease cycle and management of Seed - gall nematode, *Anguina tritici*.