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GIET UNIVERSITY, GUNUPUR - 765022
B. Sc. (Ag.) (Third Semester) Regular Examinations, January - 2024
PPT-212 - Fundamentals of Nematology

Time: 2 hrs

Maximum: 50 Marks

The figures in the right-hand margin indicate marks.

PART - A

Q.1. Fill in the blanks with suitable word / figure.

(0.5 x 10 = 5 Marks)

- a. Nematode eggs are _____ in shape.
- b. Nematode suck the sap of the plant with the help of _____.
- c. Male root knot nematodes are _____ in shape.
- d. Nematodes are placed under phylum _____.
- e. Nematode feeding stimulates the development of a typical nurse cell system called _____.
- f. Muscle cells are connected to each other by means of _____ and have nerve connections.
- g. The body cavity of nematodes is known as _____.
- h. The longitudinal alae delimit the later fields and are known as _____.
- i. The *Meloidogyne spp.* causes root galls on cucumber plants was first determined by _____.
- j. The plant parasitic forms are called _____ and the study is known as _____.

Q. 2. Define (or) Explain the following in one or two sentences.

(1 x 5 = 5 Marks)

- a. Root proliferation
- b. Necrosis
- c. Migratory endo parasites
- d. Punctuations
- e. Inverted 'U' shaped tubular type excretory system

Q3. Match the following

(0.5 x 10 = 5 Marks)

Column - A		Column - B	
(a)	Grape vine fan leaf	(i)	<i>Trichodorus similis</i>
(b)	Tobacco rattle virus	(ii)	<i>Xiphinema index</i>
(c)	quarantine	(iii)	Antagonistic effect
(d)	α - terthinyl	(iv)	40 days
(e)	Seed gall nematode	(v)	<i>Hemicycliophora spp.</i>
(f)	Stubby-root nematode	(vi)	<i>Anguina tritici</i>
(g)	Sheath nematode	(vii)	Stubby-root nematode
(h)	Guinea worm	(viii)	<i>Globodera spp.</i>
(i)	Cyst nematode	(ix)	<i>Trichodorus spp.</i>
(j)	<i>Paratrichodorus spp.</i>	(x)	<i>Dracunculus medinensis</i>

Q4. Write True or False against each statement

(0.5 x 10 = 5 Marks)

- a. The immature stage of the nematode is called as juvenile.
- b. Stunting symptoms seen in below ground plant parts.
- c. The lateral roots produce excessive rootless is known as coarse root.
- d. Arrest of the growth of lateral roots is known as stubby roots.
- e. Tundu disease of wheat is associated with the bacteria *Anguina tritici* and the nematode *Clavibacter tritici*.
- f. A report of root-knot nematode and *Fusarium* complex in vascular wilt of cotton was given by Atkinson.
- g. Journal of Nematology was first published by the Society of Nematologists, USA.
- h. The descriptions of the morphology of free-living nematodes by given for the first time by Butschli.
- i. The stem and bulb nematode, *Ditylenchus dipsaci* infesting the heads of teasel reported by Berkeley.
- j. Discovery of wheat seed gall nematode *Anguina tritici*, the first plant parasitic nematode was done by Schacht.

PART – B

Attempt ANY FIVE questions. All question carries equal marks

(6 x 5 = 30 Marks)

5. Briefly described about the biology of cyst nematodes with well labelled diagram.
6. List down the different methods of nematode control and briefly describe about the cultural methods of nematode control.
7. Write down the habitat, parasitism and morphology of root knot nematode.
8. Describe in detail the stomodeum of a nematode's inner body tube.
9. Write the history and development of nematology in India.
10. Write about the male reproductive system of nematode with labelled diagram.

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