JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF AGRICULTURAL AND FOOD SCIENCES

THIRD YEAR SECOND SEMESTER UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN AGRIBUSINESS MANAGEMENT

2023/2024 ACADEMIC YEAR

SIAYA

COURSE CODE: APB 9403

COURSE TITLE: Crop Protection

EXAM VENUE: **STREAM: BSc. Agribusiness Management**

DATE: **EXAM SESSION:**

TIME: 2 HOURS

Instructions:

1. **Answer ALL questions in section A and ANY other 2 Questions in section B.**
2.   **Candidates are advised not to write on question paper.**
3. **Candidates must hand in their answer booklets to the invigilator while in the examination room.**

Answer ALL questions from this Section

1. Explain the following terminologies in relation to Crop Protection   **[30 MARKS]**

(a) Viral disease symptoms caused by latent viruses often visible on a host plant.

(b) Genetic resistance is one of the agronomic practices for controlling viral diseases.

(c) Overhead irrigation spreads foliar and other nematodes, which attack the above-ground parts of susceptible plants; if nematodes are present.

(d) Overusing nitrogen fertilizer is not considered an agronomic or horticultural practice for controlling insect infestation.

(e) An introduced weed is a pest, while the opposite is true for exotic weed.

(f) A classic example of biological control is the intentional use of a member of the Arthropod phylum to control insect pests.

(g) Fumigant pesticide acts on the pest through inhalation or absorption of vapor.

(h) Insects feed on and recycle animal and plant wastes dead animals.

(i) A non-systemic insecticide is more volatile than systemic insecticides.

(j) The mode of parasitism is irrelevant to the classification of nematodes.

(k) Host range refers to the host debris where part of a pest cycle is completed.

(l) Nontarget pests are often targets of nonselective pesticides.

(m) The process of assessing whether a pest, disease or weed is likely to become a major pest is referred to as risk assessment.

(n) The structure of a female reproductive system is more important than the target organ of plants when it comes to the classification of nematodes.

(o) Using net covers is a type of pest mechanical control.

(p) ELISA is a serological test in which an enzyme carries an antibody that releases a colorless compound.

(q) Hyphae is necessary for the survival and spread of bacteria

(r) The position of the oesophageal glands can be used to classify orders, suborders and families of the Phylum Nematoda

(s) Orchids in tropical areas with both chlorophyll and aerial roots are hemiparasites

(t) True parasitic plants often possess tap roots.

(u) Pheromones for bio-control of pests originate from female pests

(v) Transgenic cotton expressing the Bt gene is resistant to bacteria, fungi and viruses

(w) Epiphytes depend entirely on their host plants for food and water. Some are native; others are introduced.

(x) A farmer's lack of knowledge of the mode of action of insecticides is a potential reason for insects developing resistance against pesticides.

(y) Marijuana can be a source of TMV that can infect tomato plants

(z) Nematodes use a pair of special limbs to swim in thin film of water between and around soil particles.

(aa)   Parasitism occurs when one organism benefits to the detriment of the other.

(ab)   Stunting is a common virus disease symptom.

(ac)   Phytoplasmas are smaller than bacteria.

(ad)   Viruses can multiply in both living and dead cells.

2. List TEN agronomic and cultural practices for creating favorable conditions for host plants and TEN practices for creating unfavorable conditions for pests. **[20 MARKS]**

3. Describe TEN mechanisms through which weeds can become serious pests: **[20 MARKS]**

4a. Describe the STEPS for an effective and environmentally friendly approach you will devise for managing parasitic plants **[10 MARKS]**

4b. Using a diagram, describe the life cycle of nematodes **[10 MARKS]**