



**NATIONAL OPEN UNIVERSITY OF NIGERIA**  
**PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI - ABUJA**  
**FACULTY OF SCIENCE**  
**DEPARTMENT OF PURE AND APPLIED SCIENCE**  
**September 2020 EXAMINATION**

**BIO 414: Applied Entomology**

**Time: 2½ Hours**

**Credit Units: 3**

**Instruction: Answer FIVE questions only. QUESTION 1 is compulsory.**

- 1a. Give five reasons why insects are the most successful organism. **(2mks)**
  - 1b. In an orderly manner state the major hierarchy in classification of organism. **(3 mks)**
  - 1c. Give an account of the economic classification of insects. **(2mks)**
  - 1d. Enumerate the four important stages in the life cycle of itch mite. **(2mks)**
  - 1e. In what ways have pest imposed burden on human population. **(3mks)**
  - 1f. List two examples each of inorganic and organic pesticides. **(2mks)**
  - 1g. According to mode of application, pesticides are formulated in two forms what are the forms? **(1mk)**
  - 1h. What do you understand by pesticides formulation? **(1mk)**
  - 1i. Enumerate the ways in which man and his animal encounters organic insecticide chemicals. **(4mks)**
  - 1j. What do you understand by the phenomenon of selective toxicity. **(2mks)**
- 2 Elucidate six advantages of host plant resistance on a component of integrated pest management? **(9mks).**
- 2b. In an orderly manner what are the methods of developing resistance varieties? **(3mks)**
- 3a. Write short notes on the following; insect predator and insect parasitoids. **(4mks)**
- 3b. In what ways do insect predators locate and accept their prey? **(4mks)**
  - 3c. The choice of a stimulus to be used for behavioral manipulation is usually dependent upon a number of attribute. What are these attributes? **(4mks).**
- 4a What is meant by sterile-insect techniques? **(2mks).**
- 4b. What are the circumstances for the application of sterile-insect technique? **(4mks).**
  - 4c. Requirements of sterile –insect programmes are very important for its use in pest management. List the requirements. **(6mks).**
- 5a. List the three basic components of pest surveillance. **(3mks).**
- 5b. What are the objectives of pest surveillance? **(5mks).**
  - 5c. Write short notes on the following (i) Pest forecasting, (ii) pest survey, (iii) economic injury level. **(4mks).**
- 6a. In a tabular form give an account of the major differences between male and female produced pheromones. **(9mks).**
- 6b. List three ways by which insect sex pheromone are used in insect pest management (IPM). **(3mks)**