



**NATIONAL OPEN UNIVERSITY OF NIGERIA**  
**PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI - ABUJA**  
**FACULTY OF SCIENCE**  
**2020\_2 Examination...**

**BIO 414: Applied Entomology**

**Time: 2½ Hours**

**Credit Units: 3**

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

- 1a. Discuss the objectives of classification in entomology (6 marks)
- 1b. Give a classification of pesticides based on the organisms against which they are used (8 marks)
- 1c.i Explain the relationship that exists between *Pseudomyrmex* Ants and *Acacia*. (4 marks)
  - ii. What benefits do they derive from each other? (4 marks)
2. Attempt a classification of the given organisms according to the major categories used in animal classification: **Kingdom, Phylum, Class, Order, Family, Genus, and Species.** (*No marks will be given for misspelt words*)
  - a. Western Honey Bee (6 marks)
  - b. Itch Mite (6 marks)
3. Discuss the role of the following in the entry of pesticides into Ground water
  - i. Surface runoff (6 marks)
  - ii. Leaching (6 marks)
4. List and explain four mechanisms through which insects can become resistant to insecticides (12 marks)
- 5a. Explain the term 'Pseudo resistance' (4 marks)
- 5b. Give a brief description of the following categories of Pseudo resistance.
  - i. Host Evasion (4 marks)
  - ii. Host Escape (4 marks)
- 6a i. Define the term 'semio-chemicals' (1 mark)
  - ii. List 2 goals of using semio-chemicals (2 marks)
  - iii. Enumerate 3 advantages of using semio-chemicals (3 marks)
- 6b. Explain the role of the following Pheromones in insects
  - i. Alarm Pheromones
  - ii. Aggregation Pheromones
  - iii. Epideictic Pheromones (6marks)