



(Knowledge for Development)

**KIBABII UNIVERSITY**  
**UNIVERSITY EXAMINATIONS**  
**2017/2018 ACADEMIC YEAR**

**FOURTH YEAR FIRST SEMESTER**  
**MAIN EXAMINATION**

**FOR THE DEGREE OF BACHELOR SCIENCE (BIOLOGY) AND  
BACHELOR OF EDUCATION (SCIENCE)**

**COURSE CODE: SZL 411**

**COURSE TITLE: GENERAL ENTOMOLOGY**

**DATE: 15<sup>th</sup> December 2017**

**TIME: ~~3:00 - 5:00 p.m.~~**

11:30 - 1:30 PM

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**INSTRUCTIONS TO CANDIDATES**

Answer question **ONE** [1] and **ANY** other **TWO** [2] questions

TIME: 2 Hours

This paper consists of 2 printed pages. Please Turn Over



KIBU observes ZERO tolerance to examination cheating

1.
  - (i). Distinguish between **plumose** and **aristate** types of antennae [4mks]
  - (ii) Give the succinct use of each of the following structures. [3mks]
    - a. Haltere.
    - b. Mandible.
    - c. Malpighian tubules.
  - (iii) Illustrate by labeled diagrams only: [4mks]
    - a. The segments of an **insect thorax**.
    - b. The structure of **insect wing**.
  - (iv) Describe **four types of pupae** found in insects. [4 mks]
  - (v) State **three beneficial roles** of insects in an ecosystem [3mks]
  - (vi) Describe the structural functionality of the **insect hindgut** .[4 mks]
  - (vii) Explain how do nocturnal **haematophagus insects** locate their hosts? [4 mks]
  - (viii) Briefly describe with examples the role of insects to a country's food insecurity [4 mks]
2.
  - (a) Describe **five types of mouth parts** giving an example of an insect bearing each.[10mks]
  - (b) List **four** patterns of spiracles arrangement on insectan **abdomen** [4mks]
  - (c) Briefly describe **three distinctive** features of **odonatans**. [6mks]
3.
  - (i) List **three** sub-layers of the **procticle**. [3mks]
  - (ii) State **three** excretory structures in the **lepidopterans** [3mks]
  - (iii) Discuss reproduction in insects. [14mks]
4. Write an essay on **anatomical characteristics** of insects.[20mks]
5. Discuss **physical and chemical** modes of communication in insects. [20mks].