

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF EDUCATION
SCIENCE AND BACHELOR OF SCIENCE IN BIOLOGY**

ZOOL 220: ARTHROPOD BIOLOGY

STREAMS: BED (SCI), BSC (BIOLOGY) Y2S2

TIME: 2 HOURS

DAY/DATE: TUESDAY 16/04/2019

11.30 A.M. – 1.30 P.M.

INSTRUCTIONS:

- Answer all questions in section A and any two from section B.
- Use illustrations where applicable.

SECTION A (30 MARKS)

- Q1. (a) Giving examples differentiate the following terms. (3 marks)
- (i) Periopods and uropods
 - (ii) Metamerism and tagmatization
 - (iii) Nauplius and Zoea larvae
- (b) State the function of the following structures in arthropods. (3 marks)
- (i) Malpighian tubules
 - (ii) Gastric ceca
 - (iii) Book lungs
- Q2. Give three morphological differences between
- (a) Diplopoda and chilopoda (3 marks)
 - (b) Scorpionida and Aranae (3 marks)
- Q3. Outline the factors that have led to insect dominance in terrestrial habitats. (6 marks)
- Q4. (a) Give the sensory structures found in the class malacostraca. (2 marks)
- (b) Outline the general characteristics of copepoda. (4 marks)

Q5. Explain the ecological role of arthropods in terrestrial ecosystems. (6 marks)

SECTION B (40 MARKS)

Q6. Illustrate and describe the structure and function of exoskeleton in arthropods. (20 marks)

Q7. Describe the following processes

(a) Excretion in arachnids (10 marks)

(b) Digestion in mandibulate insects (10 marks)

Q8. Write an essay on “communication and behaviour in arthropods.” (20 marks)
