



CS

**UNIVERSITY EXAMINATIONS  
2017/2018 ACADEMIC YEAR**

**THIRD YEAR FIRST SEMESTER MAIN EXAMINATION  
FOR THE DEGREE  
OF  
BACHELOR OF SCIENCE IN BIORESOURCES CONSERVATION  
AND MANAGEMENT**

**COURSE CODE:** SBC 311

**COURSE TITLE:** ECOLOGICAL DESIGN AND ANALYSIS

**DATE:** 12<sup>th</sup> January 2018

**TIME:** 9:00 -11:00 a.m.

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**INSTRUCTIONS TO CANDIDATES**

Answer Question One **compulsory (30mks)** and any other Two Questions **(20mks)** each.

TIME: 2 Hours

KIBU observes ZERO tolerance to examination cheating

This Paper Consists of 2 Printed Pages. Please Turn Over. ►

### QUESTION ONE (30MARKS)

- a. State and briefly explain five types of research that can be applied in ecological studies (5marks)
- b. State and explain briefly five qualities of a good research process (5marks)
- c. State five applications of chi square (5marks)
- d. State any five sections that form the preliminary section of a research project (5marks)
- e. Define research design. State the four types of a research design (5marks)
- f. State and briefly explain five types of data that are collected during any ecological study (5marks)

### QUESTION TWO

To study the performance of three detergents and three different water temperatures, the following whiteness readings were obtained with a specifically designed equipment

Water temperatures	detergents		
	A	B	C
Cold water	57	55	67
Warm water	49	52	68
Hot water	54	46	58

- a. State the null and alternative hypotheses that can be tested from this data (6 marks)
- b. Assuming the data is normally distributed, test the hypothesis stated above (14 marks)

### QUESTION THREE

Describe the techniques used in ecological qualitative data collection and analysis (20marks)

### QUESTION FOUR

Describe with examples the nature of an ecological experiment (20marks)

### QUESTION FIVE

The research process consists of a number of closely related activities which overlap continuously rather than follow a prescribed sequence. Describe the steps provides a useful procedural guideline regarding any ecological research process (20marks)