CHUKA  **UNIVERSITY**

UNIVERSITY EXAMINATION

RESIT/SPECIAL EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE

BOTA 302: BIOSTATISTICS

STREAMS: **TIME: 2 HOURS**

DAY/DATE: WEDNESDAY 05/05/2021 **8.30 A.M – 10.30 A.M**

INSTRUCTIONS:

Answer all questions in Section A and two questions in Section B

SECTION A (30 marks)

1. Explain five sources of data in scientific study (5 marks)
2. Differentiate between the following terms (5 marks)
   a. Binomial and Poisson distribution
   b. Descriptive and inferential statistics
   c. Systematic and stratified sampling
   d. One tailed and two tailed hypothesis
   e. Empirical and a priori probability
3. The weights of individuals participating in a sport were approximately normally distributed with a mean of 140 kgs and standard deviation of 25 kgs. What is the probability that a person picked at random will weigh between 100 and 170 kgs? (5 marks)
4. Explain five common sampling designs (5 marks)

5. A sample of 25 female students is found to have a mean height 158.65 cm. Can it be reasonably regarded as a sample from a large population with mean height 168.45 cm and standard deviation 4.25 cm? Test at 5% level of significance (5 marks)

6. Outline the assumptions of ANOVA (5marks)

SECTION B (40 Marks)

7. Discuss steps in hypothesis testing (20 marks)

8. Discuss the importance of information technology in research (20marks)

9. A sample of 15 rabbits was studied for change in serum cholesterol (mg/100 ml) following treatments with three different chemicals. The results are as recorded below:-

Rabbit 1	**Rabbit 2**	**Rabbit 3**
15	16	17
22	20	13
17	19	16
16	25	18
16	25	12

Carry out a one way ANOVA at 5% confidence level to test an appropriate hypothesis (20 marks)
