CHUKA   **UNIVERSITY**

UNIVERSITY EXAMINATIONS

RESIT/SPECIAL

THIRD YEAR EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN COMMUNITY DEVELOPMENT/CRIMINOLOGY/SECURITY STUDIES

SOCI 302/353: SOCIAL STATISTICS I

STREAMS: SPECIAL/RESIT EXAMINATION   **TIME: 2 HOURS**

DAY/DATE: TUESDAY 02/02/2021   **8.30 A.M. – 10.30 A.M.**

INSTRUCTIONS: i) Do not write on the question paper

ii) Answer questions one and any other two

QUESTION ONE

a) Construct a frequency distribution table for the data below using class intervals of 1-10, 11-20, 21-30 ….   [10 marks]

35,	35,	50,	30,	40,	42,	30,	60,	65,	60,	55,	50,
50,	40,	45,	35,	35,	30,	50,	45,	50,	50,	60,	48,
35,	92,	59,	35,	55,	45,	50,	45,	56,	48,	40,	61,
72,	49,	24,	21,	95,	87,	70,	69,	37,	64,	43,	36,

b) Represent the following information on a bar graph   [10 marks]

Days	Mon	Tue	Wed	Thu	Fri
Number of events	15	40	35	10	20

c) Explain the meaning of the following terms   [10 marks]
   i.   Sample
   ii.   Statistics
   iii.   Data
   iv.   Variable
   v.   population

d) Based on data in the table below work out :
   i. The 80th percentile [5 marks]
   ii. The 4th decile [5 marks]

Class	11-20	21-30	31-40	41-50	51-60	61-70
Frequency	5	9	15	8	6	3

QUESTION TWO
   a) Use data in the table below to answer the questions that follow

Class	2-4	5-7	8-10	11-13	14-16	17-19
Frequency	1	3	7	12	5	2

Compute:
   i. Mode [3 marks]
   ii. Median [4 marks]
   iii. Mean [3 marks]
   b) Two dice are tossed together. What is the probability that the sum of the two upper faces will be: [10 marks]
   i. Seven
   ii. Nine
   iii. Less than four
   iv. Greater than eight
   v. At least three
   c) Based on information in the table below work out the interquartile range [10 marks]

Class	16-25	26-35	36-45	46-55	56-65	66-75
Frequency	5	15	20	16	10	4

QUESTION THREE
   a) A bag contains eight blue balls and five green balls. If two balls are drawn from the bag, one at a time, find the probability of drawing a blue ball and a green ball:
   i. Without replacement [5 marks]
   ii. With replacement [5 marks]
   b) Draw a histogram for the following data [12 marks]

Weight	10 - 14	15 – 19	20 - 24	25 - 29	30 - 34	35 – 39
No. of goats	3	11	19	22	6	2

   c) Distinguish between descriptive statistics and inferential statistics [8 marks]

QUESTION FOUR

a) Discuss five ways in which knowledge of statistics may benefit a social scientist

[10 marks]

b) Elaborate the meaning of the following measurement scales
   i.   Nominal scale   [3 marks]
   ii.   Ordinal scale   [3 marks]
   iii.   Interval scale   [3 marks]
   iv.   Ratio scale   [3 marks]

c) Use data in the following table to compute
   i.   Range   [2 marks]
   ii.   Variance   [4 marks]
   iii.   Standard deviation   [2 marks]

Class	15-19	20-24	25-29	30-34	35-39	40-44
Frequency	6	3	13	12	7	2