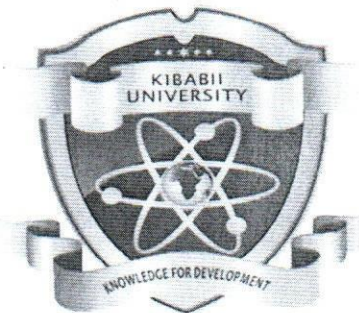


126 (126)



*(Knowledge for Development)*

**KIBABII UNIVERSITY**  
**UNIVERSITY EXAMINATIONS**  
**2022/2023 ACADEMIC YEAR**  
**MAIN**  
**THIRD YEAR SECOND SEMESTER**  
**FOR THE BACHELORS DEGREE**  
**IN**  
**CRIMINOLOGY & SOCIAL WORK**

**COURSE CODE: SCR 326**

**COURSE TITLE: SOCIAL STATISTICS**

**DATE: 28<sup>TH</sup> APRIL 2023**

**TIME: 2PM-4PM**

**INSTRUCTIONS TO CANDIDATES**

Answer question one (compulsory) and any other two questions

TIME: 2 Hours

Kibabii University observes ZERO tolerance to examination cheating

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

### Question one (20 Marks)

- a) Define the following terms;
- A population
  - Measures of normality
  - A parameter (6 Marks)
- b) Discuss the three objectives of measures of dispersion. (6 Marks)
- c) Compute the mean absolute deviation of 12,17,20,22,24,25,27,29,32 (5 Marks)
- d) Find the coefficient of skewness  $\alpha_3$ . And the coefficient of kurtosis  $\alpha_4$  for the following data 5, 6, 7, 6, 9, 4, 5 (7 Marks)
- e) Draw a frequency polygon using the following data.
- |                     |     |     |     |     |           |
|---------------------|-----|-----|-----|-----|-----------|
| No. of hours worked | 1-3 | 3-5 | 5-7 | 7-9 |           |
| No of days          | 3   | 5   | 1   | 1   | (6 Marks) |

### Question Two (20 Marks)

- a) Draw scatter plots to illustrate the few types of correlation between two variables. (4 Marks)
- b) Obtain the correlation coefficient of the following data
- |                      |       |       |       |       |      |      |      |
|----------------------|-------|-------|-------|-------|------|------|------|
| Mean Temperature (x) | 14.2  | 14.3  | 14.6  | 14.9  | 15.2 | 15.6 | 15.9 |
| Pirates (y)          | 35000 | 45000 | 20000 | 15000 | 5000 | 400  | 17   |
- (8 Marks)
- c) Scores made by students in an exam are as follows. Develop a regression equation to predict final examination scores. (8 Marks)
- |          |    |    |     |    |    |    |    |    |    |    |
|----------|----|----|-----|----|----|----|----|----|----|----|
| Student  | 1  | 2  | 3   | 4  | 5  | 6  | 7  | 8  | 9  | 10 |
| Mid Term | 98 | 66 | 100 | 96 | 88 | 45 | 76 | 60 | 74 | 82 |
| Final    | 90 | 77 | 98  | 88 | 80 | 62 | 78 | 74 | 86 | 80 |

### Question Three (20 Marks)

Use the following data to answer the questions that follows;

Class	340-349	350-359	360-369	370-379	380-389
Frequency	2	3	7	5	3

- a) Draw a histogram and use it to estimate mode. (7 Marks)
- b) Find;
- Mean
  - Median
  - Standard Deviation
  - Coefficient of skewness (13 Marks)

**Question Four (20 Marks)**

A Sociologist is interested in the long-term effects of divorce in a family. A sample was obtained of  $n=10$  children whose parents were divorced at least five years ago. Each child was given a personality questionnaire measuring depression. In the general population form a normal distribution with mean=80 and  $\sigma=12$ . The scores of this sample were as follows: 83,81,75,92,84,107,63,112,92,88. The Sociologist predicted that children form divorced families would be more depressed than children from general population.

Test this hypothesis using  $\alpha=0.05$

**Question five (20 Marks)**

- a) Discuss any two disadvantages of mean absolute deviation. (4 Marks)
- b) Highlight any three uses of range in social statistics. (3 Marks)
- c) The following distribution gives the difference in age between husbands and wives in a particular community.

Difference in years	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40
Frequency	449	705	507	281	109	52	16	4

What light does it throw on the social conditions of the community? (13 Marks)