



The Co-operative University of Kenya

END OF SEMESTER EXAMINATION DECEMBER-2016

EXAMINATION FOR THE DEGREE OF BACHELOR OF CO-OPERATIVE AND COMMUNITY DEVELOPMENT (BCCD YR II SEM I)

UNIT CODE: CMCC 2201

UNIT TITLE: STATISTICS II

DATE: 7TH DECEMBER, 2016

TIME: 9:00 AM – 11:00 AM

INSTRUCTIONS:

- Answer question **ONE (compulsory)** and any other **TWO** questions

QUESTION ONE

- (a) Define the term “regression analysis” (3 marks)
- (b) In the following table are recorded data showing the tests scores made by salesmen on an intelligence tests and their weekly sales

Sales	1	2	3	4	5	6	7	8	9	10
Test score	40	70	50	60	80	50	90	40	60	60
Sales (000)	2.5	6.0	4.0	5.0	4.0	2.5	5.5	3.0	4.5	3.0

Required:

- Calculate the regression equation of sales on test scores (8 marks)
 - Estimate the probable weekly sales volume if a salesman makes a score of 100 (3 marks)
- (c) IN a correlation study the following values are obtained
- | | | |
|------|-----|-----|
| | X | Y |
| Mean | 65 | 67 |
| S.D | 2.5 | 3.5 |
- Coefficient of correlation $r = 0.8$
- Find the two regression equations (7 marks)
- (d) Define the term rank correlation coefficient (3 marks)
- (e) Interpret the following value of r : $r=0$, $r=1$, $r=+1$, $r=0.25$ (6 marks)

QUESTION TWO

- (a) Discuss the following sampling techniques
- Random sampling (7 marks)
 - Non Random sampling (8 marks)

QUESTION THREE

- (a) Define the term “multiple regression” (3 marks)
- (b) Given $Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + U$
- Required:**
- Interest β_0 , β_1 , β_2 , β_3 and U (7 marks)
- (c) Explain how the constants of the above regression can be computed (5 marks)

QUESTION FOUR

- (a) Define the term “time series” (3 marks)
- (b) Explain the following components as applied in time series
 - i. Trend (3 marks)
 - ii. Seasonal variation (3 marks)
 - iii. Residual variation (3 marks)
 - iv. Long-term cyclic factor (3 marks)