



The Co-operative University College of Kenya
(A Constituent College of Jomo Kenyatta University of Agriculture & Technology)

END OF SEMESTER EXAMINATION APRIL-2015

EXAMINATION FOR THE DIPLOMA IN CO-OPERATIVE MANAGEMENT
(DCM SEPT 2014)

UNIT TITLE: STATISTICS

DATE: 27TH APRIL, 2015

TIME: 9.00 A.M. – 11.00 A.M.

INSTRUCTIONS:

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

QUESTION ONE

- (a) The data below relates to prices sugar for five years

Year	2010	2011	2012	2013	2014
Prices	9450	1105	107	109	103

Construct a chain base index and comment on the result. (5 marks)

- (b) Explain the importance of probability in decision making. (5 marks)

- (c) Distinguish between

i. Positive and negative correlations. (2 marks)

ii. Linear and Non-linear correlations. (2 marks)

- (d) The data below relates to sales and advertising

Sales (sh. millions)	10.1	11.2	9.3	8.5	13.2
Advertising (sh. 000')	50	52	47	47	60

Determine the regression equation of Y and X and interpret the results. (8 marks)

- (e) Explain the steps in hypothesis testing. (8 marks)

QUESTION TWO

- (a) By use of a diagram explain;

i. Union of sets. (3 marks)

ii. Intersection of sets (3 marks)

- (b) A committee of 6 is to be chosen from 5 men and 3 women. Find probability of setting 4 men and 2 women. (6 marks)

- (c) A company with three departments X, Y Z each producing 50%, 40% and 10% of total output. Defective items are 5%, 3% and 1% respectively. Determine probability that an item selected at random is defective. (8 marks)

QUESTION THREE

- (a) Explain the following;

i. Type 1 error (2 marks)

ii. Type 11 error (2 marks)

- (b) Explain any TWO features of a normal curve. (2 marks)
- (c) Find the area covered by the following normal curves
- i. Left of $Z = -1.79$ (3 marks)
 - ii. Between $Z = -1.34$ and $Z = +1.49$ (4 marks)
 - iii. Right of $Z = +2.13$ (3 marks)
- (d) Differentiate between regression and correlation. (4 marks)

QUESTION FOUR

(a) The data below is an extract from the books of accounts at Remic Ltd.

Sales (sh. millions)	45	39	61	60	56	57	61
Advertising (sh. 000')	150	129	152	149	145	145	147

Required:

- (a) Determine the relationship of Y and X (8 marks)
- (b) Determine the Pearson's correlation (8 marks)
- (c) Compute co-efficient of determination (4 marks)

QUESTION FIVE

- (a) Explain by use of diagrams the component of time series. (8 marks)
- (b) The data below relates to Farut Ltd (12 marks)

Year	2007	2008	2009	2010	2011	2012	2013	2014
Prices	340	238	308	310	328	300	290	240

Fit a trend line by

- i. Method of least squares
- ii. Method of semi average (Plot the graph and show trend line)