



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF BUSINESS & ECONOMICS
UNIVERSITY EXAMINATION FOR THE DIPLOMA OF BUSINESS
ADMINISTRATION WITH IT
2ND YEAR 1ST SEMESTER 2015/2016 ACADEMIC YEAR
KISII CAMPUS-PART TIME

COURSE CODE: BBM 2216

COURSE TITLE: STATISTICS AND QUANTITATIVE TECHNIQUES

EXAM VENUE: LR 18

STREAM: (DIPLOMA)

DATE: 14/12/16

EXAM SESSION: 2.00 -3.30PM

TIME: 1 ½ HOURS

Instructions:

- 1. Answer Question ONE (COMPULSORY) and ANY other 2 questions**
- 2. Candidates are advised not to write on the question paper.**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room.**

QUESTION ONE

a. Define the following terms

- i. Hypothesis(2marks)
- ii. Type 1 error(2marks)
- iii. Type 11 error(2marks)

b. Highlight the limitations of the mean as a measure of central tendency (2marks)

c. A box contains 50 pens of which 10 are red 15 are blue and 25 are black a pen is picked at random. What is the probability that the pen picked .is.

- i. 1.red (2mark)
- ii. 2.black(2 mark)
- iii. 3.black and red(2marks)

d..Use tables of area under standard normal distribution to find the following.

- i. $1.P(0 \leq Z \leq 1.3)$ (2 marks)
- ii. $P(-1 \leq Z \leq 3)$ (2 marks)
- iii. $3.P(Z \geq 1.54)$ (2marks)

e.The ages of a sample of students attending Jaramogi oginga odinga university school of business and economics last semester was

19,17,15,20,23,41,33,21,18,20,18,33,32,29,24,19,18,20,17,22,55,19,22,25,28,30,44,19,20,39.

Required

- i. Construct a frequency distribution table with intervals 15 -19,20-24,25-29,30-34,34 and older.(2 marks)
- ii. Estimate the modal value (3 marks)
- iii. compute the mean of the raw data(3marks)
- iv. Compare your mean and mode above and comment on which of the two is a better measure of central tendency and why?(2marks)

QUESTION TWO

The following information was extracted from average monthly balances of 600 customers of mwalimu Sacco (shillings thousands)

CLASS	FREQUENCY
0-49.99	78
50-99.99	123
100-149.99	187
150-199.99	82
200-249.99	51
250-299.99	47
300-349.99	13
350-399.99	9
400-449.99	6
450-499.99	4

Required: Determine

- i. 1.mean (5 marks)
 - ii. 2.median (5 marks)
 - iii. 3.mode (5 marks)
- b.Explain the term measure of dispersion and list the most preferred measures of dispersion (5marks)

QUESTION THREE

a..From past experience a machine is known to be set up correctly on 90% of occasions. If the machine is set up correctly, the 95% of the parts are expected to be good, but if the machine is not set up correctly the probability of a good part is 30%.On a particular day the machine is set .

- i. 1.What is the probability that the machine is set up correctly given that the first product to come out is a good product(5 marks)

- ii. 2.If the first component to come out was a bad product, what is the probability that the machine is incorrectly set(5 marks)
- b.list and explain the steps that are followed in hypothesis testing(10marks)

QUESTION FOUR

A.A bakery bakes cakes under the brand name (supper cakes) Shawn the manager does not know the cost of each cake. He therefore gathers data on the total cost of each day`s production for the last ten days. The results are Shawn in the table below

DAY	NUMBER OF CAKES (KSHS 000)	TOTAL COST (KSHS 000)
1	24	236
2	20	210
3	28	262
4	22	223
5	30	275
6	20	210
7	24	236
8	26	249
9	18	197
10	18	197

Required

- i. Estimate the total cost function in the form $Y=a+bx$ using ordinary least squares method and identify the fixed cost and unit cost(7 marks)
- ii. If the bakery projects a production level of 200 units on a particular day due to demand from weddings .How much would the bakery incur in terms of cost(3 marks)

b. The table below shows the ratings that were given to 10 students by 2 lecturers (Anyango and Mumbi) at Jaramogi oginga odinga university. Calculate the coefficient of correlation and interpret your findings

	ANYANGO	MUMBI	
1	3	5	
2	4	2	
3	2	1	
4	6	3	
5	5	7	
6	1	4	
7	7	6	
8	8	8	
9	9	10	
10	10	9	(10 marks)

QUESTION FIVE

a. List the two generally used focusing techniques and outline the advantages and disadvantages of each (10 marks)

b. Given the following time series data with t representing period and y representing output,

YEAR PERIOD (t)	OUTPUT(y)
1990	50
1991	80
1992	90
1993	49
1994	75
1995	58
1996	82
1997	73
1998	95

Required

Using the least square method, estimate the trend equation for the variable y (10 marks)