



"Investing in Africa's Future"

FACULTY OF MANAGEMENT AND ADMINISTRATION

**MBA 503:QUANTITATIVE METHODS
END OF FIRST SEMESTER EXAMINATIONS**

NOVEMBER/DECEMBER 2016

LECTURER: (P TARAMBAWAMWE)

DURATION: (3 HRS)

INSTRUCTIONS

Answer ALL Questions

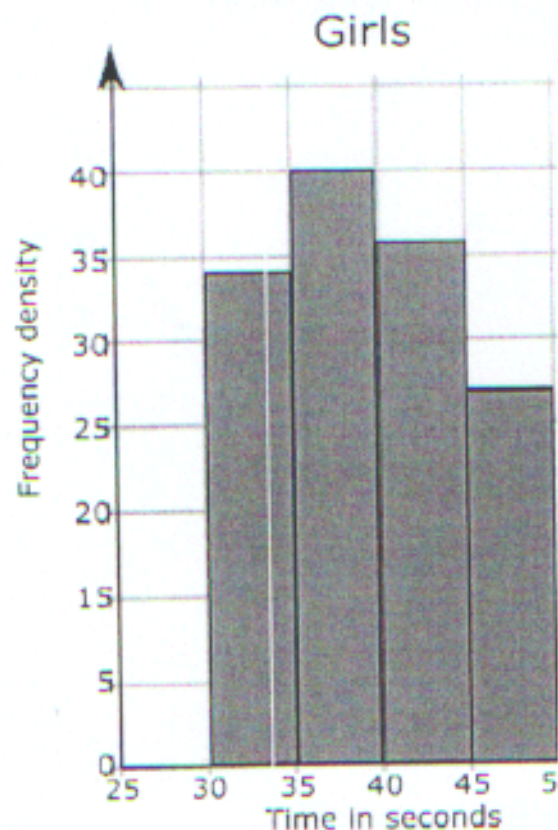
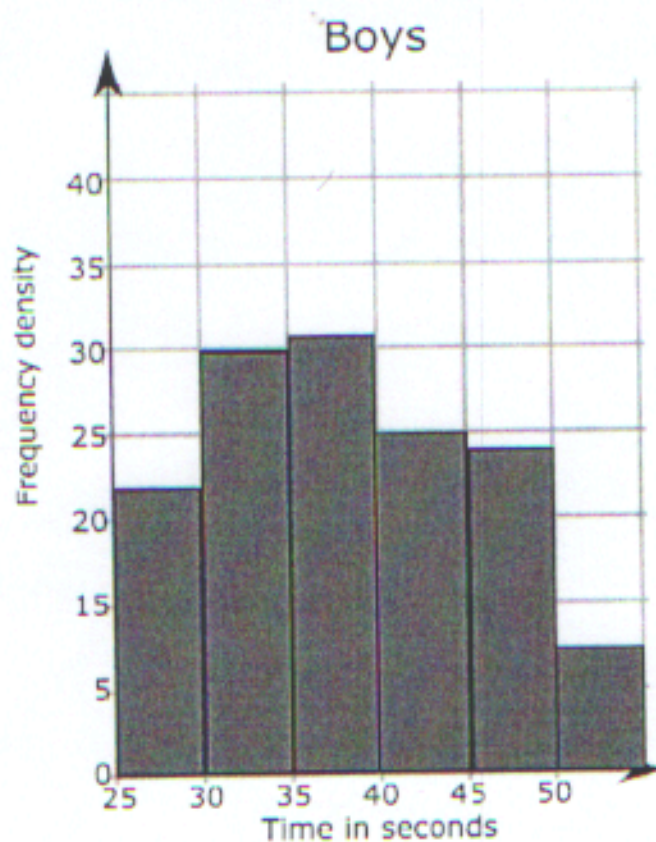
MARKS FOR EACH QUESTION ARE SHOWN AT THE END OF EACH QUESTION

Q1i. With suitable examples, highlight the rules relating to the tabulation of data.

[6 marks]

ii. Discuss the various types of measurement scales.[12 marks]

iii. The charts below show the results of pupils in a Year Group answering twenty mental arithmetic questions.



What information from the diagrams can be used to support or counter each of these statements?

(a) Girls are better at mental arithmetic than boys.[2 marks]

(b) The range of the boys' times is greater than the range of the girls' times.[2marks]

The Head of the school would like to use this data to make statements about all of the pupils in the school.

(c) Comment on whether any conclusions can be drawn for the whole school population from the results of this Year Group.[3marks]

Q2.

- a. Briefly explain the concept of mean, median, mode, skewness and standard deviation. [6 marks]
- b. Random samples of 1000 persons have been obtained for three countries and their incomes have been measured. The summary statistics for the per capita income distribution over the three countries is given below.

STATISTIC	A	B	C
MEAN	10000	10000	10000
MEDIAN	14000	8000	10000
STANDARD DEVIATION	2000	1500	1000
LOWER VALUE	9000	7000	8500
HIGHEST VALUE	15000	12000	12000

Using *Pearson's coefficient of skewness*, *cv* and *range* discuss the differences and similarities of the income patterns in the three countries. [10 marks]

c.

- i. Calculate coefficient of variation for the information given below and interpret the results. [3 marks]

Factory	Av. weekly wages	Standard .	No. of Workers.
A	34.5	5.0	476
B	28.5	4.5	542

ii.

Mazikana Enterprises is a small company which sales freezits. The company employs two sales persons and the manager at Mazikana Enterprises is interested in determining the sales performance of the salespersons. A record of sales for 50 consecutive days was kept. The following data was obtained.

Daily Sales (\$)	Salesperson A	Salesperson B
60 000 - < 70 000	3	5
70 000 - < 80 000	13	11
80 000 - < 90 000	17	22
90 000 - < 100 000	11	7

100 000 - < 110 000	4	2
110 000 - < 120 000	2	3

As part of the analysis, the manager calculated the mean, mode and median of the daily sales for salespersons A and B. The summary statistics for salespersons A and B are given below:

Statistic	A	B
Mean	86 200	84000
Median	85 294	85000
Mode	84 000	86 200
sd	12 204	11 890

What advice can the manager give to Mazikana Enterprises about the performance of its sales persons? Justify your response.

[10 marks]

Q3

a. What does a correlation coefficient tell? **[3 marks]**

b. Explain the difference between correlation analysis and regression analysis? Use examples to justify your answer. **[10 marks]**

c. Briefly explain the assumptions in regression analysis. **[5 marks]**

d. In a multiple regression analysis, while using income, product experience as independent variables and family size as the dependent variable, the estimated R square is 0.35. What does this tell us? Explain. **[3marks]**

Q4 a. What is a hypothesis? What are the various ways of formulating hypotheses?

[8marks]

b. Discuss the various steps involved in testing a hypothesis. **[5 marks]**

c. Explain the relationship between a confidence level and a significance level.

[4 marks]

d. What are t test and F test? In which situation are these applied? **[4 marks]**

e. Discuss the two kinds of errors in test of significance. **[4 marks]**