KABARAK   **UNIVERSITY**

EXAMINATIONS

2008/2009 ACADEMIC YEAR

FOR THE DEGREE OF BACHELOR OF COMMERCE

COURSE CODE: BMGT 210

COURSE TITLE: BUSINESS STATISTICS I

STREAM: Y2S1

DAY: FRIDAY

TIME: 9.00 – 11.00 A.M.

DATE: 20/03/2009

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INSTRUCTIONS:

- Question ONE is compulsory. Answer THREE questions in total.

- Question ONE carries 30 Marks while other questions carry 20 Marks each.

- Illustrate where possible.

PLEASE TURN OVER

QUESTION ONE

a)   Distinguish between the following concepts

        i)   Deductive and inductive statistics   (3mks)

        ii)   Validity and reliability in data collection instruments   (3mks)

        iii)   A statistic and a parameter   (3mks)

        iv)   Marginal probability and joint probability   (3mks)

        v)   Bar diagram and Histogram   (3mks)

        vi)   Independent events and dependent events   (3mks)

        vii)   Binomial and Poisson distributions.   (3mks)

        viii)   Indexation and deflation   (3mks)

b)   i)   What is sampling error?   (1mk)

        ii)   Explain the causes of sampling error   (4mks)

        iii)   What is the major solution to sampling error?   (1mk)

QUESTION TWO

a)   i)   What is sampling?   (2mks)

        ii)   Explain what you understand by Simple Random Sampling (4mks)

        iii)   Suppose in Nakuru last year 1118 mortgages were taken out and that a Simple Random Sample is taken in order to estimate the mean amount of these mortgages. The population standard deviation historically is Ksh. 20,000. If a 95% confidence interval for the population mean must extend an amount Kshs. 4,000 on each side of the sample mean, how many sample observations are needed if a simple random sample is taken?

                                                          (6mks)

b)   A consulting firm intends to conduct a survey on prospective business opportunities for its small scale enterprises (SSE) clients. Available information shows that there are 2000 successful SSEs in Nakuru. 20% of these engage in transport, 25% are in hotels, 18% are small scale manufacturers while the rest are in wholesale and retail business.

        i)   Suggest, with reasons, a suitable sampling method for this study.

                                                          (4mks)

        ii)   Using the selected sampling method in [b(i)], show how the researcher could obtain to final sample whose size is 20% of the target population.

                                                          (4mks)

QUESTION THREE

a)   i)   What is measurement?   (2mks)

      ii)   Explain the interval level of measurement   (3mks)

b)   Suppose you are provided with the following weekly earning of employees of a certain milling firm in Nakuru's industrial area:

500	775	800	2000
500	800	1050	1340
500	700	1100	1400
600	750	950	2000
550	900	1250	1500
650	925	1000	1450
550	800	1050	1400
620	925	1300	2000
700	800	1050	1550
670	950	1300	1300

      i)   Establish an interval frequency distribution table for the above earnings.

                                             (7mks)

      ii)   Draw a histogram for the distribution above and comment on the skew.

                                             (3mks)

c)   i)   State the Kuznet's hypothesis   (2mks)

      ii)   Using hypothetical Lorenz curves, explain the Kuznet's hypothesis.

                                             (3mks)

QUESTION FOUR

a)   What is Geometric mean and when is it applied?   (3mks)

b)   The data below gives the distribution of wages of employee of Bahati dairy firm:

Wages (Ksh).	No. of employees
500 – 599	8
600 – 699	10
700 – 799	16
800 – 899	14
900 – 999	10
1000 – 1099	5
1100 – 1199	2

i) Calculate the mean of this distribution (4mks)

ii) Calculate the distribution's variance and explain the weaknesses of variance as a measure of dispersion. (8mks)

c) i) When is coefficient of variation used? (2mks)

ii) The coefficient of variation of two series of data are 58% and 69% and their corresponding standard deviations are 21.2 and 15.6 respectively. What are their arithmetic means? (3mks)

QUESTION FIVE

a) A random sample of 50 households in Ravine town has been selected to establish a price index for household needs and the following data was obtained:

| | Prices | | Quantities | |
	2006	2007	2006	2007
Food	2.00	2.50	100	200
Clothing	3.00	3.60	50	60
Utilities	10.00	11.00	20	20

i) Calculate the Laspeyres and Paasch price indices (8mks)

ii) Giving reasons, which of the two indices above would you deem more appropriate. (2mks)

b) The following joint probability table shows the characteristics of a randomly selected employee.

| | College Education | | marginal probability |
Rank	Yes	No.	
Management	0.15	0.05	-
Unionisable employee	0.10	0.70	-
Marginal Probability	-	-	1.00

i) Complete the table (2mks)

ii) Determine the conditional probability the selected person is in management given that he/she did not go to college (2mks)

iii) Determine the conditional probability the selected person is unionisable given that he/she went to college. (2mks)

c) Explain the two types of probability (4mks)