KABARAK UNIVERSITY

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: WEDNESDAY

TIME: 11.00 – 1.00 P.M.

DATE: 13/8/2008

INSTRUCTIONS:

1. Answer questions **ONE** and any other two questions.
2. Question **ONE** carries **30 marks** while the rest carry **20marks** each**.**
3. Illustrate where possible

PLEASE TURN OVER

QUESTION 1

(a) Distinguish between the following pairs of concepts:

(i) Indexation and deflation. **(3mks)**

(ii) Validity and reliability **(3mks)**

(iii) A statistic and a parameter **(3mks)**

(iv) Deductive statistics and inductive statistics **(3mks)**

(v) Sampling unit and sampling frame **(3mks)**

(b) (i) what is sampling error? **(2mks)**

(ii) Explain the causes of sampling error **(5mks)**

(c) (i) Explain clearly what is simple random sampling **(3mks)**

(ii) The mean amount of the 812 mortgages taken out in Nakuru town in the past year needs to be estimated. Based on the previous experience, a real estate broker knows that the population standard deviation is likely to be about Ksh 20,000. If a 95% confidence interval for the population mean is to extend Ksh 2000 on each side of the sample mean, how many sample observations are needed if a simple random sample if taken? **(5mks)**

QUESTION 2

(a) Explain why sample survey is preferred to complete enumeration **(5mks)**

(b) (i) What is stratified sampling? Explain the circumstances under which this technique is used. **(5mks)**

(ii) Suppose we wish to take a stratified random sample to estimate the mean number of orders per restaurant of a new food item when the numbers of restaurants in the three estates are; $N_1 = 60$, $N_2 = 50$ and $N_3 = 45$. If the experience of the restaurant chain suggests that the population standard deviations for the three estates are approximately: $\sigma_1 = 13$, $\sigma_2 = 11$ and $\sigma_3 = 9$. If we require a 95% confidence interval for the population mean extending an amount three orders per restaurant on each side of the sample point estimate, how many sample observations in total are needed? **(7mks)**

(c) A random sample of workers in a firm may be obtained by taking every tenth name in the firm's payroll list. Do you agree? Explain. **(3mks)**

QUESTION 3

(a) Explain the reasons why mail questionnaire is at times preferred to personal interview **(4mks)**

(b) (i) What do you understand by measurement? **(2mks)**

(ii) Explain the levels of measurement **(8mks)**

(c) What is an expected value? **(2mks)**

(d) Distinguish between a Histogram and a Bar diagram and explain the circumstances under which each is used. **(4mks)**

QUESTION 4

(a) The data below represents the distribution of daily wages of workers at the Menengai distillers:

Wages (Ksh)	Number of workers
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, median and mode of the wage distribution given above. **(11mks)**

(ii) From your knowledge of statistics, what measure of central tendency is more appropriate in explaining the distribution above? **(2mks)**

(b) (i) Explain the weaknesses of variance as a measure of dispersion **(4mks)**

(ii) Under what circumstances is the coefficient of variation applicable? **(3mks)**

QUESTION 5

(a) What are the uses of index numbers? **(8mks)**

(b) Given the following data on the consumer price index (CPI) for Kenya between 1977 and 2002 as:

YEAR	CPI
1977	98
1998	100.8
1999	101.5
2000	103.1
2001	104.2
2002	105.4

(i) Generate CPI series with 2000 as the base year. **(3mks)**

(ii) Generate CPI series with the average of 1999 – 2001 data as the base year. **(3mks)**

(c) (i) If E_1 is the event "drawing an ace from a deck of cards" and E_2 is the event "drawing a king" determine the probability of drawing either an ace or a king in a simple draw. **(3mks)**

(ii) If E_1 is the event "drawing an ace from a deck of cards" and E_2 is the event "drawing a spade", determine the probability of drawing either an ace or a spade. **(3mks)**