Prince Sultan University
STAT 101
Major I Examination
Fall Semester 2008, Term 081
Tuesday, November 18, 2008
Dr. Quazi Abdus Samad

Time Allowed**: 90 minutes**

Name: _____ _____ _____
(First) (Middle) (Last)

ID Number: _____

Section No.: _____

Important Instructions:

You may use CASIO scientific calculator that does not have programming or graphing capabilities
You may **NOT borrow** a calculator from anyone.
There should be **NO talking** during the examination.
Your exam will be taken **immediately** without any warning if your mobile is seen or heard
You must show all your work beside the problem. Be organized.
You may use the back of the pages for extra space, but be sure to indicate that on the page with the problem.
This examination has **06** problems with several parts in each case. Make sure that your paper has all these problems.

Problems	Max points	Student's Points
1	10	
2	12	
3	08	
4	10	
5	10	
6	10	
Total	**60**	

Q.1. (10 points) The grade point averages (GPAs) of 6 students were recorded as follows:

59, 63, 70, 75, 80, 82.

a. Find the mean of the grade point averages (GPAs).

b. Obtain the variance of the GPAs using the computing formula.

c. Find the standard deviation of the GPAs using the computing formula.

d. Find the range of the GPAs.

e. The range is approximately how many standard deviations?

Q.2. (12 points) Twelve applicants interested in working for the Food Stamp program took an examination designed to measure their aptitude for social work. The scores appear below:

46, 59, 63, 66, 68, 70, 74, 76, 78, 80, 85, 105.

a. Construct a box plot using the above data.

b. Identify any outlier(s), if any.

c. Compute the z-scores for the smallest and largest observations.

Q.3. (8 points) A study was performed to examine preferences for various types of potatoes: Mashed, French Fries, Hash browns, Steak Fries, and Baked. The following data were recorded regarding the preferences of 150 people:

Type of Potato	Frequency
Mashed	24
French Fries	54
Hash browns	15
Steak Fries	12
Baked	45

a. What is the variable being measured? Is it qualitative or quantitative?

b. Construct a pie chart to describe the data.

c. What proportion of people prefers French Fries or Steak Fries?

Q.4. (10 points) The pulse rates of 15 students were recorded as follows:

70, 88, 70, 84, 66, 84, 66, 72, 90, 70, 96, 96, 62, 78, 101.

a. Draw a stem and leaf display to describe the data.

b. Comment on the shape of the distribution of student pulse rates.

c. Construct a relative frequency histogram **using 5 classes.**

Q.5. (10 points) The lengths of time (in months) of 10 patients between the onset of a particular illness and its recurrence were recorded. Suppose you know nothing about the size and shape of the distribution.

32.3 9.9 9.0 6.6 14.7 9.6 16.7 7.4 8.2 19.2

a. Use the range approximation to find an approximate value for **s**.

b. Find the average length of time using the data given above.

c. Find the median length of time.

d.What percent of the observations will fall in the interval between **0.51** and **26.21**?

e. What percent of the observations will fall in the interval between **-5.92** and **32.64**?

Q.6. (10 points) Data on two measurements, **X** and **Y**, are given below where **X** is the independent and **Y** is the dependent variable:

X	2	4	5	6	7	8
Y	3	5	7	8	9	9

a. Draw the scatterplot using the data of X and Y.

b. Find the correlation coefficient between X and Y.

c. Find the best fitting line of Y on X.

d. Draw the best fitting line through the points in **a above**.

e. What does the correlation coefficient, **r** indicate?