

KING FAHD UNIVERSITY OF PETROLEUM & MINERALS

DEPARTMENT OF MATHEMATICS & STATISTICS

DHAHRAN, SAUDI ARABIA

STAT 211: BUSINESS STATISTICS I

*Semester 131**Major Exam One**September 30, 2013***Allowed time 60 minutes**

Please check/circle your instructor's name

MUHAMMAD RIAZ

Section 03 (9:00am – 9:50am)

MOHAMMED SALEH

Section 05 (11:00am – 11:50am)

Name:

Student ID#:

Serial #:

Directions:

- 1) You must **show all work** to obtain full credit for questions on this exam.
- 2) **DO NOT round** your answers at each step. Round answers only if necessary at **your final step to 4 decimal places.**
- 3) You are allowed to use electronic calculators and other reasonable writing accessories that help write the exam. Try to define events, formulate problem and solve.
- 4) Do not keep your mobile with you during the exam, turn off your mobile and leave it aside

Question No	Full Marks	Marks Obtained
<i>Q1</i>	<i>12</i>	
<i>Q2</i>	<i>12</i>	
<i>Q3</i>	<i>26</i>	
<i>Total</i>	<i>50</i>	

Question One (12 points)

Three professors at KFUPM compared two different approaches to teaching courses in the school of business. At the time of the study, there were 2500 students in the business and 92 students were involved in the study. Demographic data collected on these 92 students included class (freshman, sophomore, junior, senior), age, gender, major and the GPA.

1. Describe the population of interest. *(1 point)*

2. Describe the sample that was collected. *(1 point)*

3. For each variable, indicate if they are categorical or numerical (and if numerical, continuous or discrete) *(5 points)*

4. For each variable, indicate the level of measurement. *(5 points)*

Question Two(12 points)

The following table provided the summary based on a recent survey that asked people where they prefer to spend their summer vacations. The most common preferences are with the respective percentages are given as:

Banking preference	Percentage (%)
USA	19
UK	10
Australia	15
Canada	24
Europe	32

1. Construct a pie chart and a pareto chart for this information. (10 points)

2. Find the suitable measure of central tendency. Find it. (2 points)

Question Three(26 points)

A bank branch located in a commercial district of a city has developed an improved process for serving customer during the noon-to-1:00 p.m. lunch period. The waiting time, in minutes (defined as time the customer enters the line to when he or she reaches the teller window), of a sample of 15 customers during this hour is recorded over a period of one week.

4.21 5.55 3.02 5.13 4.77 2.34 5.54 3.20
0.38 5.12 6.46 6.19 6.79 6.10 4.50

1. Construct a stem and leaf plot, comment on the shape. (4 points)

2. Compute the mean, and the standard deviation. (3 points)

3. Check the empirical rule for the given dataset. (4 points)

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4. Using the z scores. Are there any outliers in the data? (4 points)
5. Construct the box – plot, comment on variability of the data set. (5 points)
6. Construct a frequency histogram starting at 0, with class width 2. (3 points)
7. Based on your answer in part (6) above, approximate the sample mean and the sample standard deviation. (3 points)