KING FAHD UNIVERSITY OF PETROLEUM & MINERALS

DEPARTMENT OF MATHEMATICS & STATISTICS

DHAHRAN, SAUDI ARABIA

STAT 211: BUSINESS STATISTICS I

Semester 101
Major Exam One
Tuesday Nov 2, 2010
Allowed time 90 minutes

Instructors: Hassen A. Muttlak Mohammad Saleh

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
Q1	12	
Q2	7	
Q3	10	
Q4	15	
Q5	15	
Q6	9	
Q7	6	
Q8	6	
Total	80	

Question One (12 points)

Fill in the missing components of the following frequency distribution constructed for a sample size of 50. Then estimate the sample mean and the sample standard deviation.

Class	Frequency	Relative frequency	Cumulative relative frequency
7.85 -			0.12
8.05-			0.48
		0.24	
		0.10	

Question Two (4+3=7 points)

A company offers two different mutual funds. The stocks in the growth fund have generated an average return of 8% with standard deviation of 2%. The stocks in the specialized fund have generated an average return of 18% with standard deviation of 6%.

1. Which of these funds as exhibited rater relative variability?

2. Suppose the distributions for the two stocks funds had a bell shaped distribution. The best fund will be the fund if the range of returns to be 95% of the time. Which fund appears to be the best investment, assuming future returns will mimic past returns?

Question Three (3+7= 10 points)

A fast-food restaurant monitors its drive-thru service times electronically to ensure that its speed of service is meeting the company's goals. A sample of 28 drive-thru times was recently taken and is shown her

Speed of Service (time in seconds)						
68	71	73	74	78	79	83
85	88	90	92	93	103	105
110	116	119	130	134	138	145
146	147	156	156	162	178	181

1. Construct a stem and leaf diagram of the speed of service times.

2. Construct a box plot. Comment of the shape. Is there any outlier (use the z – score)?

Question Four (5+5+3+2 = 15 points)

The 34 students who attended the Statistics course during last summer they achieved the following grades:

C, C, B, C, A, C, C, B, A, D, B, B, A, D, B, B, A, B, C, D, A, D, C, C, F, C, D, C, A, A, A, F, C, A.

1. Construct a frequency distribution for the data.

2. Construct a bar chart for the frequency distribution.

3. Find the suitable measure of central tendency.

4. What are your final conclusions about the grad of the students?

Question Five (6+2+4+3 = 15 points)

Considering the following data set

3, 3, 7, 5, 12, 6, 4, 10, 9, 8, 7, 6, 10

1. Find the mean, the median and the mode.

2. For these sample data, which measure of location provides the best measure of the center of the data? Discuss.

3. Find the coefficient of variation. What does the coefficient of variation tells you about the variability of the data set?

4. Suppose that the number of the data set is 32 instead of the last number 10. What effect, if any, does this value have on each of the three measures of location? Discuss.

Question Six (3+3+3= 9 points)

A building contractor has an urgent electrical wiring job to complete on one of his sites. He is usually subcontractor electrical work to one of two small firms. The probability subcontractor A will be able to perform the job at such short notice is equal to 0.65, while for subcontractor B the probability is equal to 0.7. The probability that neither subcontractor is available to perform this job is equal to 0.2.

1. Calculate the probability that at least one of the two is available for this job.

2. Calculate the probability that both subcontractors are available for this job.

3. Calculate the probability that subcontractor B is available given that the other subcontractor is unable to take on the job.

Question Seven (2+2+2= 6 points)

The probability that a forward player scores a goal when shooting is 0.4. A football team has three forward players. Find the following probabilities

1. They all score?

2. They all miss?

3. At least one scores?

Question Eight (3+3= 6 points)

On an exam questions 60% of the class will search through the text looking for the answer. The remaining are well prepared and do not need the text. Students not using the text get the correct answer 75% of the time, while those using the text get the correct answer only 25% of the time. Find the probability that

1. The first exam graded will have the correct answers.

2. A person who got the correct answers used the text.