KING FAHD UNIVERSITY OF PETROLEUM & MINERALS
DEPARTMENT OF MATHEMATICS AND STATISTICS
Term 142

STAT 211 BUSINESS STATISTICS I

Please circle your instructor name:

W. Al- Sabah M. Saleh

Name: _____ ID #:_____Section #:____

Important Note:

- Show all your work including formulas, intermediate steps and final answer

Question No	Full Marks	Marks Obtained
1	8	
2	5	
3	12	
4	20	
Total	45	

Q1 (1 *point each*): The manager of the customer service division of a major consumer electronics company is interested in determining whether the customers who have purchased a Blu-ray player made by the company over the past 12 months are satisfied with their products.

1. In the following questions, specify the type of the variable

   a. "What is your annual income rounded to the nearest thousands?" are values from a_____ variable.

   b. "Are you happy, indifferent, or unhappy with the performance per dollar spent on the Blu-ray player?" are values from a_____ variable.

   c. "How much time do you use the Blu-ray player every week on the average?" are values from a _____ variable.

   d. "How would you rate the quality of your purchase experience with 1 = excellent, 2 = good, 3 = decent, 4 = poor, 5 = terrible?" are values from a _____ variable.

2. In the following questions, specify the measurement level.

   a. "How many Blu-ray players made by other manufacturers have you used?" result in _____ variable.

   b. "Are you happy, indifferent, or unhappy with the performance per dollar spent on the Blu-ray player?" result in _____ variable.

   c. "What is your annual income rounded to the nearest thousands?" result in _____ variable.

   d. "What brand of Blu-ray player did you purchase?" result in _____ variable.

Q2(1 *point each*): Define the following

a. Population:

b. Sample:

c. Parameter

d. Statistic:

e. inferential statistics:

Q3: In a comparative study of traffic congestion in U.S cities, the time needed to drive from the Central Business District (CBD) to the airport in two different cities has been observed for 50 working days during the afternoon rush hour. The respective frequency distributions of the travel time for the two cities are shown hereafter.

Travel time (in minutes)	City 1	City 2
05 – 15	5	5
15 – 25	10	14
25 – 35	30	21
35 – 45	5	10

a. Calculate the mean travel times in each city. *(3 pts)*

b. Calculate the standard deviation of the travel times in each city. *(3 pts)*

c. Which city exhibits greater variability in the travel time from the CBD to the airport? *(3 pts)*

d. Find the cumulative frequency distribution for the sample obtained in city 1, and sketch it graphically. *(3 pts)*

Q4: An oil company has 20 oil wells operating in the Gulf. The output of these wells in barrels is recorded, as follows:

75	200	250	300	340	450	500	700	700	1200
100	230	250	340	400	500	670	700	800	1900

a. Compute the mean, the median, the mode. The standard deviation. Comment on the shape using these numbers. *(5 pts)*

b. Do the data satisfy the first condition of the Empirical Rule? Explain. *(4 pts)*

c. Using the z-score, is there any outlier? Explain. *(3 pts)*

d. The company will cease oil production in those oil wells that are below the 33rd percentile. Determine which oil wells will be closed. *(3 pts)*

e. Draw a box plot and comment on it? *(5 pts)*