**ASSIGNMENT FOR 2ND SEMESTER 1ST Year**

**DEPARTMENT OF BUSINESS ADMINISTRATION**

**SUBJECT BUSINESS STATISTICS**

**DEAR STUDENTS.**

This is inform to you that below mentioned task is being assigned to you as assignment. Please note that last date for submission of this assignment is **27 January 2021.**

Questions/Topics of discussion

Exercise of four chapter which are given below

**NOTE:**

For acquiring the relevant knowledge readout my handouts and take help from Recommended book (\_Statistical\_Techniques\_in\_Business\_and\_Economics\_by\_Lind\_Douglas\_)

This learning task carries **40** Marks

**Important Instructions:**

* The assignment will open and close on above specified date and time. Please note that no grace day or extra time will be given for this.
* What you have to do simple make assignment in word form or if you are doing paperwork take images and attached those images on MS word file along answer sheet in one folder.
* Do not copy or exchange your answer with other students. Two identical / copied comments will be marked Zero (0) and may damage your grade in the course.
* Assignment should should be submitted through email mentioning your Name and Roll No.
* Assignment sends to ***CR*** then he will be submitted to me

Chapter 2 Assignment

describing Data: Frequency Distributions and Graphic Presentation

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Roll No\_\_\_\_\_\_\_\_\_\_

**Part I** Select the correct answer and write the appropriate letter in the space provided

\_\_\_\_\_ **1**. A grouping of data into classes giving the number of observations in each class is called a(an)

**a** bar chart.

**b**. frequency distribution.

**c**. pie chart.

**d**. cumulative frequency distribution.

\_\_\_\_\_\_ **2**. The distance between consecutive lower class limits is called the

**a**. class interval.

**b**. frequency distribution.

**c**. class midpoint.

**d**. class frequency.

\_\_\_\_\_\_ **3**. The class midpoint is

**a**. equal to the number of observations.

**b**. found by adding the lower class limits of two consecutive classes and dividing by 2.

**c**. equal to the class interval.

**d**. all of the above.

\_\_\_\_\_\_ **4**. The number of observations in a particular class is called the

**a**. class interval.

**b**. class frequency.

**c**. frequency distribution.

**d**. none of the above.

\_\_\_\_\_\_ **5**. A bar chart is used most often when

**a**. you want to show frequencies as compared to total observations.

**b**. you want to show frequencies by class intervals.

**c**. you want to display frequencies by category.

**d**. you want to organize data along certain time interval.

\_\_\_\_\_\_ **6**. In a *relative frequency* distribution

**a**. the class frequencies are divided by 100.

**b**. the data are related to each other rather than mutually exclusive.

**c**. the class frequency is divided by the total number of observations.

**d**. the frequencies are added together to give a relative set of numbers.

\_\_\_\_\_\_ **8**. The suggested interval size of the class intervals for a histogram can be estimated by:

**a**. consecutive lower class limits divided by 2.

**b**. consecutive lower class limits divided by the total number of observations.

**c**. using the formulas: 

CHAPTER 3 ASSIGNMENT

Describing Data: numerical Measures

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Roll No \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Part I** Select the correct answer and write the appropriate letter in the space provided.

\_\_\_\_\_\_ **1**. The arithmetic mean is computed by

**a**. finding the value that occurs most often.

**b**. finding the middle observation and dividing by 2.

**c**. summing the values and dividing by the number of values.

**d**. selecting the value in the middle of the data set.

\_\_\_\_\_\_ **2**. To compute the arithmetic mean at least the

**a**. nominal level of measurement is required.

**b**. ordinal level of measurement is required.

**c**. interval level of measurement is required.

**d**. ratio level of measurement is required.

\_\_\_\_\_\_ **3**. The value that occurs most often in a set of data is called the

**a**. mean.

**b**. median.

**c**. geometric mean.

**d**. mode.

\_\_\_\_\_\_ **4**. What level of measurement is required to determine the mode?

**a**. at least nominal level

**b**. at least ordinal

**c**. at least interval level

**d**. ratio

\_\_\_\_\_\_ **5**. For a symmetric distribution

**a**. the mean is larger than the median.

**b**. the mode is the largest value.

**c**. the mean is smaller than the median.

**d**. the mean and median are equal.

\_\_\_\_\_\_ **6**. Which of the following is ***not*** true about the arithmetic mean.

**a**. all the values are used in its calculation

**b**. half of the observations are always larger than the mean

**c**. it is influenced by a large value

**d**. it is found by summing all the values and dividing by the number of observations

\_\_\_\_\_\_ **7**. In a *negatively* skewed distribution

**a**. the mean is smaller than the median.

**b**. the mean is larger than the median.

**c**. the mean and median are equal.

**d**. the median and the mode are equal.

\_\_\_\_\_\_ **8**. What is the lowest level of measurement required for the median?

**a**. nominal **b**. ordinal

**c**. interval **d**. ratio

\_\_\_\_\_\_ **9**. The Dow Jones Industrial Average increased from 6110 at the end of the first quarter in 1996 to 11,109 at the end of the first quarter in 2006. The annual rate of increase is best described by the

**a**. geometric mean. **b**. weighted mean.

**c**. median. **d**. mode.

\_\_\_\_\_\_ **10**. What is the shape of a frequency distribution with an arithmetic mean of 12,000 pounds, a median of 12,000 pounds, and a mode of 12,000 pounds?

**a**. flat **b**. symmetric

**c**. geometrically skewed **d**. positively skewed

\_\_\_\_\_\_ **11**. The mean deviation

**a.** is the average of all the values.

**b**. is the midpoint of the range.

**c**. is the average of how far each value is from the median.

**d**. is the average of how far each value is from the mean.

\_\_\_\_\_\_ **12**. The sum of the deviations from the mean is always

**a**. equal to the mean.

**b**. equal to zero.

**c**. always positive.

**d**. equal to the median.

\_\_\_\_\_\_ **13**. The square of the standard deviation is equal to

**a**. the mean.

**b**. the variance.

**c**. the median.

**d**. the mean deviation.

\_\_\_\_\_\_ **14**. What is the shape of a frequency distribution with an arithmetic mean of 800 pounds, median of 758 pounds, and a mode of 750 pounds?

**a**. negatively skewed **b**. symmetric

**c**. geometrically skewed **d**. positively skewed

**Part II** Find the answers to each of the following questions. Show essential calculations.

**1**. A study conducted by the Toledo police at the intersection of Byrne and Heatherdowns for the 7 to 9 AM drive time revealed the following number of vehicles proceeded through the intersection after the light changed. The information reported below is for a sample of seven days during a six month period

6 12 7 12 8 4 5

**a**. Compute the range.

**a**.

**b**. Compute the sample mean.

**b**.

**c**. What is the median?

**c**.

**d**. What is the mode?

**d.**

**e**. Describe the skewness.

**e**.

**2**. A shipment of packages to the Solomon Company included 10 packages weighing 7.4 pounds, 12 weighing 8.2 pounds and 6 weighing 8.7 pounds. What value would you use as a typical amount for the weight of a package?

**2**.

**3**. From 1985 to 2006 the net sales for the J.M. Smucker Company increased from $157 million to $687 million. Compute the mean annual percent increase in net sales.

**3**.

**4**. The numbers of orders placed online with Jaysmart Electronics for the last 12 months were:

1136 1090 1273 1104 1180 1271 1211 887 1008 1300 1370 1263

**a**. Compute the range.

**a.**

**b**. Compute the mean deviation.

**b**.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

**c**. Compute the standard deviation.

**c**.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

|  |  |
| --- | --- |
| Hours spent Searching | Number of Unemployed |
| 0 up to 10 | 3 |
| 10 up to 20 | 7 |
| 20 up to 30 | 15 |
| 30 up to 40 | 10 |
| 40 up to 50 | 5 |
| **TOTAL** | 40 |

**5**. The Ohio Bureau of Employment gathered the following sample information on the number of hours unemployed workers spent looking for work last week.

**a**. Determine the mean.

**a.**

**b**. Determine the variance and the standard deviation.

**b**.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

CHAPTER 4 ASSIGNMENT

Describing Data: displaying AND exploring data

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Roll No\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Part I** Select the correct answer and write the appropriate letter in the space provided.

\_\_\_\_\_\_ **1.** A dot plot shows the range of values along the:

**a**. vertical axis. **b**. ( *x, y* ) diagonal axis.

**c**. median axis. **d**. horizontal axis.

\_\_\_\_\_\_ **2**. When displaying data with a dot plot, we:

**a**. do not lose the identity of an individual data point

**b**. are able to show the range of the values.

**c**. are able to see the shape of the distribution.

**d**. all of the above are correct.

\_\_\_\_\_\_ **3**. A scatter diagram is a graphic tool used to portray:

**a.** the mean of the data values. **b**. the range of the data values.

**c.** the midpoint of data values. **d**. the relationship between variables.

\_\_\_\_\_\_**4**. In a stem and leaf display:

**a**. the leaf is the leading digit or digits of the number.

**b**. the stem is the leading digit or digits of the number.

**c**. the stem or the leaf can be the leading digit or digits of the number.

**d**. the stem is the trailing digit.

\_\_\_\_\_\_**5**. Which one of the following measures of dispersion does *not* divide a set of observations into equal parts?

**a**. quartiles **b.** deciles

**c**. percentiles **d**. standard deviations

\_\_\_\_\_\_**6**. The interquartile range is the difference between:

**a.** the second and third quartile. **b**. the second and fourth quartile.

**c.** the first and third quartile. **d**. the first and last quartile.

**\_\_\_\_\_\_7.** A box plot is based on:

**a**. the mean. **b**. percentiles.

**c**. deciles. **d**. the first and third quartile, the median, the maximum and the minimum**.**

\_\_\_\_\_**\_8.** A contingency table :

**Part II** Show all of your work. Write the answer in the space provided.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 76 | 74 | 71 | 78 | 80 | 67 |
| 80 | 82 | 67 | 88 | 72 | 78 |
| 85 | 76 | 84 | 82 | 83 | 80 |
| 72 | 82 | 77 | 79 | 86 | 89 |
| 69 | 70 | 82 | 86 | 78 | 77 |

**1**. The ages of a sample of 30 people living in assisted living facilities in Columbia, South Carolina are shown in the table.

Construct a dot plot for the data.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

~~| | | | | | | | | | | | | | | | | | | | | | |~~

|  |  |
| --- | --- |
| STEM | LEAF |
| 5 | 6 8 |
| 6 | 1 2 2 4 8 |
| 7 | 0 4 6 6 |
| 8 | 0 4 4 6 6 6 6 6 |
| 9 | 0 2 6 |
| 10 | 0 |

**2.** The following stem and leaf plot shows the scores on a recent test of Pre-Calculus students.

**a**.

**a.** How many students took the test?

**b**.

**b.** What were the highest and lowest scores?

**c**.

**c.** How many students scored 70 or higher?

**d**.

**d**. What percent of the students scored lower than 70?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 15 | 17 | 23 | 26 | 27 | 35 |
| 72 | 88 | 91 | 98 | 102 |  |

**3.**  The revenues of the top eleven personal computer manufacturers are given (in hundred millions).

**a**. Compute the first quartile.

|  |
| --- |
| **a***. Q*1 |
| **b***. Q3* |
| **c.** M |

**b**. The third quartile.

**c**. Determine the median.

**d**. Draw a box plot for the data.

~~| | | | | | | | | | | | | | | | | | | | | | |~~

**e.**

**e.** Calculate Pearson’s coefficient of skewness.

**4.** **Listed to the right are the selling prices (in thousands of dollars) for a sample of 19 lakeside lots in Pinnacle Peak, a vacation home community in the Blue Ridge mountains.**

|  |  |  |  |
| --- | --- | --- | --- |
| 86 | 61 | 148 | 81 |
| 39 | 142 | 140 | 65 |
| 28 | 85 | 90 | 92 |
| 25 | 50 | 85 | 85 |
| 82 | 120 | 137 |  |

Determine the following:

**a**. the first quartile

**a.**

**b**. the third quartile

**b.**

**c**. the median

**c.**

Chapter 5 Assignment

A Survey of Probability Concepts

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Roll No \_\_\_\_\_\_\_\_\_

**Part I** Select the correct answer and write the appropriate letter in the space provided.

\_\_\_\_\_\_ **1**. Which of the following statements regarding probability is always correct?

**a**. A probability can range from 0 to 1.

**b**. A probability close to 0 means the event is not likely to happen.

**c**. A probability close to 1 means the event is likely to happen.

**d**. all of the above are correct.

\_\_\_\_\_\_ **2**. According to the classical definition of probability

**a**. All the events are equally likely.

**b**. The probability is based on hunches.

**c**. Divide the number of successes by the number of failures.

**d**. One outcome is exactly twice the other.

\_\_\_\_\_\_ **3**. The observation of some activity or the act of taking some measurement is called

**a**. an outcome. **b**. an experiment.

**c**. a probability. **d**. an event.

\_\_\_\_\_\_ **4**. The particular result of an experiment is called

**a**. an experiment. **b**. an event.

**c**. a probability. **d**. an outcome.

\_\_\_\_\_\_ **5**. An event is the collection of one or more

**a**. outcomes. **b**. combinations.

**c**. probabilities. **d**. experiments.

\_\_\_\_\_\_ **6**. If *A* and *B* are mutually exclusive events then *P*(*A* or *B*) equals

**a**. *P*(*A*) + *P*(*B*) − *P*(*A* and *B*) **b**. *P*(*A*) × *P*(*B*)

**c**. *P*(*A*) + *P*(*B*) **d**. *P*(*A*|*B*) + *P*(*B*|*A*)

\_\_\_\_\_\_ **7**. If *A* and *B* are independent events, then *P*(*A* and *B*)) equals

**a**. *P*(*A*) + *P*(*B*|*A*). **b**. *P*(*A*) × *P*(*B*).

**c**. *P*(*A*) + *P*(*B*). **d**. *P*(*A*|*B*) + *P*(*B*|*A*).

\_\_\_\_\_\_ **8**. Which formula represents the probability of the complement of event *A*?

**a**. 1 + *P*(*A*) **b**. 1 − *P*(*A*)

**c**. *P*(*A*) **d**. *P*(*A*) −1

\_\_\_\_\_\_ **9**. The simultaneous occurrence of two events is called

**a**. prior probability **b**. subjective probability

**c**. conditional probability **d**. joint probability

\_\_\_\_\_\_ **10**. If the probability of an event is 0.3, that means

**a**. the event has a 70% chance of not occurring.

**b**. the complement of the event has a 30% chance of occurring.

**c**. the event has a 30% chance of not occurring.

**d**. the complement of the event has a 70% chance of not occurring.

**Part II** Answer each question below. Be sure to show all of your work.

**1**. A recent study of young executives showed that 30 percent run, 20 percent bike and 12 percent do both. What is the percent of young executives who run or bike?

**1**.

**2**. A survey of publishing jobs indicates that 92 percent are completed on time. Assume that three jobs are selected for study.

**a**. What is the probability they are all completed on time?

**a**.

**b**. What is the probability that at least one was not completed on time?

**b**.

**3**. Today’s local newspaper lists 20 stocks “of local interest.” Of these stocks, ten increased, five decreased and five remained unchanged yesterday. If we decide to buy two of the stocks, what is the likelihood that both increased yesterday?

**3**.

**4**. Six employees of a marketing firm had effectiveness ratings as follows: 0.72, 0.46, 0.59, 0.64, 0.81 and 0.76. Find the probability of selecting an employee with the indicated effectiveness rating.

**a**.

**a**. Greater than 0.75.

**b**.

**b**. Less than 0.75 but greater than 0.5.

**c**. Greater than the mean.

**c**.

**d**. Not less than 0.9.

**d**.

**5**. A freight train is going to carry four tankers, six coal cars, and ten lumber cars. How many different arrangements of cars are possible?

**5**.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Women** | **Men** | **Total** |
| Under 30 | 30 | 8 | 38 |
| 30 to 50 | 25 | 14 | 39 |
| 50 & over | 18 | 5 | 23 |
| Totals | 73 | 27 | 100 |

**17**. A market analyst is hired to provide information on the type of customers who shop at a particular store. A random survey is taken of 100 shoppers at this store. Of these 100, 73 are women. The shoppers are grouped in three age categories, under 30, 30 up to 50 and 50 and over. The data is summarized in the table.

Let *W* be the event that a randomly selected shopper is a woman.

Let *A* be the event that a randomly selected shopper is under 30.

**a**. Find the probability of ~*W*.

**a**.

**b**. Find the probability of *A*.

**b**.

**c**.

**c**. Find the probability of *A* and *W*.

**d**.

**d**. Find the probability of *A* or ~*W*.

**e**.

**e**. Find the probability of *A* given *W*.

**18.** Perry’s Garden Center sells three brands of riding mowers—Ranger, Turfmaster, and Colt. Fifty percent of the riding mowers they sell are Rangers, thirty five percent Turfmasters, and fifteen percent Colts. Each brand of mower comes with a one-year parts and labor warranty. Based on their records, Perry knows that the chance of a warranty claim is five percent for the Ranger, 15% for the Turfmaster, and 25% for the Colt. If Perry’s service manager tells him that a riding mower has just been brought in for a repair covered by the warranty,

**a.** What is the chance that the riding mower is a Colt?

**a.**

**b.** What is the chance that the riding mower is a Turfmaster?

**b.**

**c.** What is the chance that the riding mower is a Ranger?

**c.**