

**Department of Computer Science**

**Bahria University**

**GSC-122: Probability & Statistics**

**Semester03 (Fall 2023)**

**ASSIGNMENT 01**

Marks: 05

# NAME:

# CLASS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# REG #: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Marks Obtained:**

**CLO 2, PLO2 & BT level C2 (applicable to all questions of this assignment)**

**Q 1.** The following data give the number of people living in each of 50 buildings from a certain locality

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 21 | 50 | 35 | 39 | 48 | 46 | 36 | 54 | 42 | 30 | 29 | 42 | 32 | 40 | 34 |
| 31 | 45 | 35 | 37 | 52 | 44 | 39 | 43 | 37 | 33 | 51 | 53 | 33 | 46 | 43 |
| 47 | 41 | 26 | 38 | 52 | 48 | 25 | 34 | 37 | 33 | 36 | 27 | 54 | 36 | 41 |
| 33 | 29 | 28 | 44 | 32 |  |  |  |  |  |  |  |  |  |  |

Demonstrate and illustrate frequency table taking suitable class intervals also mention midpoints, class boundaries, cumulative frequency and relative frequency of the intervals.

**Q 2.** Demonstrate by presentingfrequency distribution and histogram by taking 10 as a class interval and 45 as a lowest limit for the data mentioned below:

109 74 49 103 95 90 118 52 104 88 101 96 72 56 64 110 97 77 59 62 96 82 65 85 105 116 89 91 83 99 52 76 84

**Q 3.** Demonstrate and illustrate a Pie chart for the following data:

Items Expenditure (Rs)

Food 950

Clothing 320

House Rent 500

Medical Care 230

Others 400

**Q 4.** (1.13) A manufacturer of electronic components is interested in determining the lifetime of a certain type of battery. A sample, in hours of life, is as follows:

123,116,122,110,175, 120,125, 111, 118, 117.

(a) Demonstrate sample mean and median.

(b) Demonstrate the feature in this data set, responsible for the substantial difference between the two?

**Q 5.** (1.18) The following scores represent the final examination grade for an elementary statistics course:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 23 | 60 | 79 | 32 | 57 | 74 | 52 | 70 | 82 |
| 36 | 80 | 77 | 81 | 95 | 41 | 65 | 92 | 85 |
| 55 | 76 | 52 | 10 | 64 | 75 | 78 | 25 | 80 |
| 98 | 81 | 67 | 41 | 71 | 83 | 54 | 64 | 72 |
| 88 | 62 | 74 | 43 | 60 | 78 | 89 | 76 | 84 |
| 48 | 84 | 90 | 15 | 79 | 34 | 67 | 17 | 82 |
| 69 | 74 | 63 | 80 | 85 | 61 |  |  |  |

(a) Illustrate a stem-and-leaf plot for the examination grades in which the stems are 1, 2, 3,... . 9.

(b) Demonstrate a relative frequency histogram and draw an estimate of the graph, the mean, median, and standard deviation of the frequency data.

**Q 6.** (1.24) The following are historical data on staff salaries (dollars per pupil on 30 schools sampled in the eastern part of the United States in the early 1970s).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 3.79 | 2.99 | 2.77 | 2.91 | 3.10 | 1.84 | 2.52 | 3.22 |
| 2.45 | 2.14 | 2.67 | 2.52 | 2.71 | 2.75 | 3.57 | 3.85 |
| 3.36 | 2.05 | 2.89 | 2.83 | 3.13 | 2.44 | 2.10 | 3.71 |
| 3.14 | 3.54 | 2.37 | 2.68 | 3.51 | 3.37 |  |  |

Demonstrate sample mean, sample standard deviation of the data.

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