**Session Two Tasks**

**Question 1 :**

**The following are the hemoglobin levels (g/100ml) of a sample of 10 children who are receiving treatment for a certain disease**

**6.7, 9.1, 10.0, 11.4, 12.4, 9.8, 8.3, 9.9, 9.1, 7.5**

**Compute the sample mean and median and mode and measure of dispersion.**

**ANSWER**

**Median = 6.7+ 9.1+10.0+11.4+12.4+ 9.8+8.3+9.9+9.1+7.5 / 10 = 9.42**

**Median = 9.1+9.8 / 2 = 9.95**

**Mode = 9.1**

**Dispersion = 12.4 – 6.7 = 5.7**

**Question 2 :**

1. **Consider below the boxplot for a sample of the time it takes a taxi-driver to take a trip from airport to downtown.**

**A graph with a box and numbers

Description automatically generated with medium confidence**

**Median = ..24.5.. & Lower Quartile Q1 = ..22.. & Upper Quartile Q3 = ..27.5..**

**Minimum = …20… & Maximum = ……29…….**

**Question 3 :**

**Consider the following data**

**A: 3,5,7,9,11 B: 3,7,7,7,11**

1. **Find the standard deviation of each set of data.**

**A B**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **X** | **X-7** | **(X-7)^2** |  | **X** | **X-7** | **X-7)^2** |
| **3** | **-4** | **16** |  | **3** | **-4** | **16** |
| **5** | **-2** | **4** |  | **7** | **0** | **0** |
| **7** | **0** | **0** |  | **7** | **0** | **0** |
| **9** | **2** | **4** |  | **7** | **0** | **0** |
| **11** | **4** | **16** |  | **11** | **4** | **16** |

**40/5-1 = 10 32/5-1=8**

1. **Which of the two sets of data is more dispersed ?**

**Both have the same dispersion**

**Question 4**

**Find the value of the correlation coefficient from the following table:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Age x** | **43** | **21** | **25** | **42** | **57** | **59** |
| **Glucose level y** | **99** | **65** | **79** | **75** | **87** | **81** |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **X** | **Y** | **XY** | **X^2** | **Y^2** |
| **43** | **99** | **4257** | **1849** | **9801** |
| **21** | **65** | **1365** | **441** | **4225** |
| **25** | **79** | **1975** | **625** | **6241** |
| **42** | **75** | **3150** | **1764** | **5625** |
| **57** | **87** | **4959** | **3249** | **7569** |
| **59** | **81** | **4779** | **3481** | **6561** |
| **247** | **486** | **20485** | **11409** | **40022** |

**R = 0.632**

**Question 5 :**

**In a study conducted by the Department of Mechanical Engineering at Virginia Tech, the steel rods supplied by two different companies were compared. Ten sample springs were made out of the steel rods supplied by each company, and a measure of flexibility was recorded for each. The data are as follows**

|  |  |
| --- | --- |
| **Company A** | **Company B** |
| **9.3** | **6.7** |
| **8.8** | **8.0** |
| **6.8** | **6.5** |
| **8.7** | **9.2** |
| **8.5** | **7.0** |

**Calculate the sample mean and median for the data for the two companies and the correlation coefficient?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **A** | **B** | **AB** | **A^2** | **B^2** |
| **9.3** | **6.7** | **62.31** | **86.49** | **44.89** |
| **8.8** | **8** | **70.4** | **77.44** | **64** |
| **6.8** | **6.5** | **44.2** | **46.24** | **42.25** |
| **8.7** | **9.2** | **80.04** | **72.25** | **84.64** |
| **8.5** | **7** | **59.5** | **72.25** | **49** |

**R=0.361**

**Mean A =8.42**

**Mean B = 7.48**

**Median A =8.7**

**Median B=7**