**University of Business and Technology**

**College Of Business Administration**

**(Spring 2021)**

**Homework 2 Word File Part**

**Name:**…………………………………………………… **I.D** ……………

 **Section: Date: Course Code:**

 **STAT 121**

**Introduction to Statistics**

|  |  |  |
| --- | --- | --- |
| **The Questions** | **Maximum Marks** | **Marks Obtained** |
| **Question 1** | 3 |  |
| **Question 2** | 2 |  |
| **Totals** | 5 |  |

**INSTRUCTIONS:**

The student will be subject to the enforcement of the university plagiarism regulation once it is proved that he broke it.

**Question #1.** A marketing firm wished to determine whether the number of television commercials **(X)** broadcast was correlated with the sales **(Y)** (in hundred thousands of dollars) of its product. The data are given in the table below:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| $$X$$ | $$Y$$ | $$X^{2}$$ | $$Y^{2}$$ | $$XY$$ |
| 14 | 8 |  |  |  |
| 17 | 9 |  |  |  |
| 12 | 8 |  |  |  |
| 15 | 12 |  |  |  |
| 9 | 5 |  |  |  |
| 17 | 9 |  |  |  |
| 11 | 7 |  |  |  |
| 7 | 6 |  |  |  |
|  |  |  |  |  |

1. Complete the above table
2. Calculate **SS(X), SS(Y), SS(XY)** and **(r)** for the given data.
3. Select the correct choice:

The variables X and Y have a

|  |  |
| --- | --- |
| weak positive linear correlation. | weak negative linear correlation. |
| moderate positive linear correlation. | moderate negative linear correlation. |
| high positive linear correlation | high negative linear correlation |

**Question #2.** From question 1, answer the following:

1. Calculate $b\_{1}$ and $b\_{0}$ and write the equation of the line of best fit.
2. If 13 television commercials are broadcasted, what are the expected sales?