

Date:24-4-19

**ST. JOSEPH’S COLLEGE (AUTONOMOUS) BANGALORE**

**SEMESTER EXAMINATION -APRIL 2019**

**B.COM II SEMESTER**

**BPS2416/BC2416: Business Statistics**

**Supplementary candidates only.**

**Attach the question paper with the answer booklet**

**TIME- 2 ½ HOURS MAX. MARKS: 70**

**This paper contains three printed page and four parts**

**SECTION A**

**Answer the following questions. Each question carries two marks. (5x2=10)**

1. Give the Meaning of Statistics.
2. Define Time Series.
3. What is weighted mean? Write the formula
4. What are index numbers? Mention its merits.
5. What is Standard Deviation?
6. Given, Mean= 27, Median = 29, Calculate Mode.
7. State the uses of Index Numbers.

**SECTION B**

**Answer any three of the following questions. The question carries five marks. (3x5=15)**

1. Explain the functions of statistics.
2. State the situations under which primary data is preferred over secondary data.
3. Calculate Karl Pearson’s Correlation coefficient from the following data using Actual Mean:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **X** | 25 | 35 | 45 | 52 | 20 | 33 | 40 | 30 |
| **Y** | 20 | 15 | 10 | 14 | 23 | 18 | 22 | 30 |

1. A Company paid bonus to the workers on the following basis.

|  |  |
| --- | --- |
| **Monthly Salary (Rs)** | **Bonus (Rs)** |
| 700-800 | 500 |
| 800-900 | 580 |
| 900-1000 | 630 |
| 1000-1100 | 700 |
| 1100-1200 | 750 |
| 1200-1300 | 810 |
| 1300-1400 | 900 |
| 1400-1500 | 960 |

**The actual salaries paid to the 40 workers are as follows:**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 725 | 1450 | 780 | 1210 | 1050 | 910 | 850 | 930 | 820 | 1320 |
| 1070 | 980 | 720 | 930 | 1270 | 1340 | 1435 | 1390 | 890 | 970 |
| 770 | 1020 | 940 | 910 | 990 | 1250 | 870 | 740 | 1220 | 1330 |
| 1440 | 950 | 1490 | 1115 | 960 | 1500 | 700 | 960 | 1150 | 920 |

**Calculate the total bonus paid by the company and also calculate the average bonus paid.**

1. **Compute the Price Index Number by Fisher’s Index Number.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Commodities** | **2016** | | **2017** | |
| **Price** | **Quantity** | **Price** | **Quantity** |
| **I** | 9 | 15 | 15 | 20 |
| **II** | 15 | 25 | 25 | 30 |
| **III** | 12 | 20 | 18 | 25 |
| **IV** | 21 | 32 | 20 | 35 |
| **V** | 8 | 40 | 9 | 30 |

**SECTION C**

**Answer any three of the following questions. The question carries ten marks. (1x10=10)**

1. What is Correlation? Explain the types of Correlation.
2. Compute modal value from the following data using grouping and analysis table.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Daily Income (Rs)** | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 | 80-90 | 90-100 |
| **No. of Families** | 4 | 5 | 15 | 9 | 11 | 14 | 8 | 13 | 7 | 8 |

1. Calculate Fisher’s Index Number and then test the consistency of it by:
2. Time reversal test
3. Factor reversal test.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Commodities** | **Base Year** | | **Current Year** | |
| **Price (Rs)** | **Quantity** | **Price (Rs)** | **Quantity** |
| Rice | 12 | 75 | 30 | 90 |
| Milk | 3 | 22.5 | 9 | 15 |
| Firewood | 1.5 | 30 | 3 | 37.5 |
| Sugar | 3 | 15 | 7.5 | 12 |
| Cloth | 1.5 | 60 | 4.5 | 4.5 |

1. Find out the regression equation X on Y and Y on X from the following data.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| X | 20 | 30 | 40 | 50 | 60 | 70 | 80 |
| Y | 21 | 35 | 45 | 53 | 70 | 77 | 84 |

1. The sale of bicycle manufactured by a company for the last Eight years are given below. Fit a straight line trend by the method of least squares and plot the original data and trend line in a graph sheet:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Year** | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
| **No of Units Manufactured (in 000’s)** | 12 | 13 | 13 | 16 | 19 | 23 | 21 | 23 |

**SECTION D**

**Answer the following question. The Compulsory question carries fifteen marks.**

1. From the following data calculate:
2. Median
3. Q1 & Q3
4. Standard Deviation
5. Coefficient of Variation

|  |  |
| --- | --- |
| **X** | **F** |
| 0-5 | 14 |
| 5-10 | 26 |
| 10-15 | 32 |
| 15-20 | 45 |
| 20-25 | 39 |
| 25-30 | 12 |
| 30-35 | 9 |
| 35-40 | 2 |

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