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Register Number:

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**ST. JOSEPH’S COLLEGE (AUTONOMOUS), BENGALURU-27**

**SEMESTER EXAMINATION**

**B.COM: II SEMESTER April 2017**

**BC 2416: Business Statistics**

**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 one mark. (5x2=10)**

1. Define Statistics.
2. State the uses of Index numbers.
3. What is combined mean? Write the formula
4. Given, Mode= 19, Median = 20.84, Calculate Arithmetic mean.
5. Write the types of Correlation.
6. Write the formula for finding Fisher’s Index Number.
7. State the uses of time series analysis.

**SECTION B**

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

1. “Statistics are like clay, of which you can make a God or a Devil as you please”. Explain.
2. Compute Q1 and Q3 from the following data.

|  |  |
| --- | --- |
| Age in years | No of Persons |
| 0-10 | 5 |
| 10-20 | 15 |
| 20-30 | 30 |
| 30-40 | 25 |
| 40-50 | 20 |
| 50-60 | 12 |
| 60-70 | 06 |
| 70-80 | 12 |

BC-2415-A-17

1. Briefly discuss the different methods of studying dispersion or variation.
2. Calculate Karl Pearson’s Correlation coefficient from the following data:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **X** | 1 | 3 | 5 | 7 | 9 | 11 |
| **Y** | 2 | 3 | 4 | 3 | 2 | 4 |

1. Following particulars relate to wages paid by two factories ‘A’ and ‘B’ relating to the same industry:

|  |  |  |
| --- | --- | --- |
| **Particulars** | **Factory ‘A’** | **Factory ‘B’** |
| Number of workers | 856 | 684 |
| Average wages | Rs.552 | Rs.574 |
| Variance | 144 | 196 |

1. Which factory pays greater total wages?
2. Which factory has greater variability in wages?

**SECTION C**

**Answer any three of the following questions. The question carries ten marks. (3x10=30)**

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

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Wages** | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 | 80-90 |
| **No. of workers** | 4 | 44 | 38 | 28 | 6 | 8 | 12 | 2 | 2 |

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** |
| A | 15 | 25 | 25 | 20 |
| B | 20 | 60 | 60 | 35 |
| C | 15 | 60 | 50 | 48 |
| D | 10 | 10 | 20 | 13 |
| E | 30 | 16 | 40 | 16 |

1. Fit a straight line trend to the following by the method of least squares:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Year** | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
| **Sales (Rs. In lakhs)** | 80 | 90 | 92 | 83 | 94 | 99 | 92 |

1. Plot the given data and trend values on the graph sheet; and
2. Estimate the sales for the year 2017 and 2018

**SECTION D**

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

In a small town, a survey was conducted in respect of profit made by 1000 retail shops. The following results were obtained:

|  |  |
| --- | --- |
| **Profit/Loss (Rs.000’s)** | **No. of Shops** |
| -4 to -3 | 4 |
| -3 to -2 | 10 |
| -2 to -1 | 22 |
| -1 to 0 | 28 |
| 0 to 1 | 38 |
| 1 to 2 | 56 |
| 2 to 3 | 40 |
| 3 to 4 | 24 |
| 4 to 5 | 18 |
| 5 to 6 | 10 |

1. Calculate:
2. The average profit made by a retail shops.
3. Total profit made by all the shops.
4. The coefficient of variation of earnings.
5. Briefly explain the objectives of measuring variation.

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