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| **ST. JOSEPH’S COLLEGE (AUTONOMOUS), BANGALORE-27** |
| **B.Com/ BPS - II SEMESTER** |
| **SEMESTER EXAMINATION: APRIL 2018** |
| **BC2416/BPS 2416 – Business Statistics** |
|  |  |  |  |  |  |  |
| **Time- 2 1/2 hrs** |  | **Max Marks-70** |  |
|  |  |  |  |  |  |  |
| **This paper contains three printed pages and four parts** |

**Section A**

1. Answer **any five** of the following: 5X2=10
2. Define statistics.
3. What is weighted average mean? Write the formula.
4. Mention any four methods of calculating dispersion.
5. State the uses of Index numbers.
6. Mention the components of Time series.
7. Determine the interpolation formula of Mode and Median.
8. Write the formula for finding Fisher’s Index Number.

**Section B**

1. Answer **any three** of the following: 5X3=15
2. State the situations under which primary data is preferred over secondary data.
3. The deviations from their respective means of X and Y series are given below:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| X | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| Y | 3 | -3 | -4 | 0 | 4 | 1 | 2 | -2 | -1 |

Calculate Karl Pearson’s Coefficient of Correlation from the above data.

1. You are given the following incomplete information and its mean 25. Find out the missing frequencies.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| C.I | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 |
| F | 5 | - | 15 | 9 | 5 |

**BC2416-A-18**

1. Find Q1 and Q3 from the following data:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Marks | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 |
| No. of Students | 2 | 4 | 7 | 13 | 10 | 6 | 3 | 1 |

1. Explain the significance of correlation analysis.

**Section C**

1. Answer **any three** of the following: 10X3=30
2. The following information is related to the TRP rating of Star networks. From this you are required to find out :
3. Which reality show has more ratings on an average?
4. Which show is more consistent in their ratings?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| TRP rating | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 |
| Bigg Boss(kannada) | 9 | 13 | 20 | 10 | 8 |
| Bigg boss (tamil) | 5 | 12 | 24 | 12 | 7 |

1. Calculate the modal value using grouping and analysis table:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Daily income | 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. Explain the scope of statistics.
2. a) From the following data obtain the regression equation X on Y

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| X | 6 | 4 | 8 | 10 | 2 |
| Y | 9 | 8 | 7 | 5 | 11 |

b) Compute Fisher’s Ideal index number and check for 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 by least squares’ method of a sugar factory:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Year | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
| Production in ‘000 units | 154 | 176 | 188 | 170 | 182 | 196 | 180 |

1. Show the actual and trend values on the graph sheet
2. Estimate the production for the year 2016.

**Section D**

1. Compulsory question: 15X1=15
2. a) The number of fully formed apples on 100 trees counted with the following results.

|  |  |
| --- | --- |
| 2 trees had | 0 apple |
| 5 trees had | 1 apple |
| 7 trees had | 2 apples |
| 11 trees had | 3 apples |
| 18 trees had | 4 apples |
| 24 trees had | 5 apples |
| 12 trees had | 6 apples |
| 8 trees had | 7 apples |
| 6 trees had | 8 apples |
| 4 trees had | 11 apples |
| 3 trees had | 12 apples |

1. How many fully formed apples were there in all?
2. What was the average number of apples per tree?
3. What was the modal number of apples?

b) 10 students obtained the following marks in Statistics and Accountancy. Calculate Rank correlation.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Marks in Statistics | 81 | 90 | 21 | 87 | 98 | 80 | 98 | 90 | 98 | 70 |
| Marks in Accountancy  | 75 | 73 | 85 | 70 | 76 | 82 | 65 | 76 | 68 | 80 |

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