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

Register Number:

Date: XX/ /2020

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| --- |
| **BBA SF – II SEMESTER** |
| **SEMESTER EXAMINATION: APRIL 2020** |
| **BBA SF 2219 – QUANTITATIVE TECHNIQUES - II** |

**Time: 2 ½ Hours Max Marks: 70**

**Section-A**

**Answer any five of the following 5 x 2 = 10**

1. Define Statistics.
2. Distinguish between primary and secondary data.
3. State any two merits of index numbers.
4. The table below gives the number of accidents for the last 10 years at a particular road junction. Calculate the Upper and lower quartile-

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 14 | 15 | 14 | 12 | 10 | 15 | 13 | 15 | 12 | 11 |

1. The number of students from three sections was 70, 65 and 60. The average marks scored are 66, 68 and 78.9 respectively. Find the average marks of all the students.
2. Mention any two methods of correlation.

**Section B**

**Answer any three of the following 3 X 5 = 15**

1. Briefly discuss the functions of statistics.
2. Find the missing frequency where average is 0.84

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **X** | -21 | -14 | -7 | 0 | 7 | 14 | 21 |
| **F** | 2 | ? | 19 | 29 | 20 | 13 | 5 |

1. Compute the Consumer price Index number from the following data using aggregate expenditure method.

|  |  |  |  |
| --- | --- | --- | --- |
| Commodity | Units consumed in base year | Price in base year | Price in current year |
| Wheat | 200 | 1.00 | 1.20 |
| Rice | 50 | 3,00 | 3,50 |
| Sugar | 40 | 2.50 | 4.00 |
| Pulses | 50 | 4.00 | 5.00 |
| Oil | 100 | 10.00 | 15.00 |

1. Compute the standard deviation from the following data:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Marks | 20 – 25 | 25 – 30 | 30 – 35 | 35 – 40 | 35 – 40 |
| No. Of students | 24 | 42 | 64 | 40 | 20 |

**Section- C**

III. Answer any **TWO** questions. Each question carries **15 marks**. (2x15=30)

1. a) Calculate the coefficient of correlation from the following data: (7 marks)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| X | 100 | 200 | 300 | 400 | 500 | 600 | 700 |
| Y | 30 | 50 | 60 | 80 | 100 | 110 | 130 |

b) Calculate the coefficients of regression from the following data: (8 marks)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| X | 12 | 9 | 8 | 10 | 11 | 13 | 7 |
| Y | 14 | 8 | 5 | 9 | 11 | 12 | 3 |

1. a) Fit a straight line trend on a graph sheet by the method of least squares to the following data: (7 marks)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Year | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 |
| Sales (in lakhs) | 125 | 128 | 133 | 135 | 40 | 141 | 143 |

b) The marks scored by 170 students of a college is given below: (8 marks)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Marks | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 |
| No. of Students | 10 | 20 | ? | 40 | ? | 25 | 15 |

The median value is 35. Find out the missing frequencies.

1. The following data represents the price per unit and the quantity (in Cores) of five particular commodity for the years 2017 and 2018 respectively

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Commodity | 2017 | | 2018 | |
| Price per Unit | Quantity  (in Cores) | Price per Unit | Quantity  (in Cores) |
| A | 6 | 50 | 10 | 56 |
| B | 2 | 100 | 2 | 120 |
| C | 4 | 50 | 6 | 60 |
| D | 10 | 30 | 12 | 24 |
| E | 8 | 40 | 12 | 36 |

Calculate the index number using **Fisher’s Ideal Price Index method and verify time reversal test and factor reversal test.**

**Section D**

**Compulsory Question 1 X 15 = 15**

1. a) The following are the number of goals scored by the two teams A and B in last 5 matches (7 marks)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Team A | 6 | 10 | 7 | 9 | 3 |
| Team B | 3 | 4 | 5 | 5 | 3 |

Calculate:

1. Which team is more consistent?
2. Which team has more goals per match?

b) Calculate mode (using grouping table and analysis table) from the following data:

(8 marks)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Marks | 25 | 26 | 27 | 28 | 29 | 30 |
| No. of Students | 12 | 24 | 25 | 23 | 12 | 8 |