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| **ST. JOSEPH’S COLLEGE (AUTONOMOUS), BANGALORE-27** | | | | | | |
| **BBA Regular- II SEMESTER** | | | | | | |
| **SEMESTER EXAMINATION: APRIL 2020** | | | | | | |
| **BBA2319 – QUANTITATIVE TECHNIQUES II** | | | | | | |
|  |  |  |  |  |  |  |
| **Time- 2 1/2 hrs** | |  | **Max Marks-70** | | |  |
|  |  |  |  |  |  |  |
| **This paper contains two printed pages and four parts** | | | | | | |

**Section A**

1. Answer any **five** from the following. Each question carries two marks. **2X5=10**
2. Define statistics.
3. How do you convert inclusive series to exclusive series? Give an example.
4. How are Index numbers classified?
5. Mention the sources of primary and secondary data with an example.
6. Mention the various types of correlation.
7. The Arithmetic mean age of a group of 75 boys is 10 years and that of a group of 15 girls is 20 years. Find the arithmetic mean age of both boys and girls together.

**Section B**

1. Answer any **three** from the following. Each question carries five marks.**5X3=15**
2. Explain the scope of statistics.
3. Calculate mean under step deviation method.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Mid-point** | 5 | 15 | 25 | 35 | 45 | 55 |
| **frequency** | 4 | 7 | 12 | 30 | 17 | 2 |

1. Calculate the regression equation Y on X from the following data:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **X** | 2 | 4 | 6 | 8 | 10 |
| **Y** | 8 | 5 | 6 | 10 | 11 |

Also calculate the value of Y if X = 5

1. In a contest, two judges ranked eight candidates in order of their performance. Calculate Spearman’s rank correlation from the given data:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Judge A** | 5 | 2 | 8 | 1 | 4 | 6 | 3 | 7 |
| **Judge B** | 4 | 5 | 7 | 3 | 2 | 8 | 1 | 6 |

**Section C**

1. Answer any **TWO** from the following. Each question carries fifteen marks. **15X2=30**
2. A) Differentiate between Primary and secondary data.

B) Calculate median from the given data:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **C.I** | >10 | >20 | >30 | >40 | >50 | >60 | >70 |
| **Frequency** | 100 | 75 | 60 | 24 | 12 | 5 | 2 |

**(5+10)**

1. Calculate Karl Pearson’s Co-efficient correlation from the given data:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **X** | 249 | 251 | 248 | 252 | 258 | 269 | 271 | 272 | 280 | 275 |
| **Y** | 237 | 238 | 236 | 240 | 245 | 255 | 254 | 252 | 258 | 251 |

1. Fit a straight line trend by the method of least squares. Show the trend line on graph and estimate the income for 2025 and 2026.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Year** | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
| **Income(lakhs)** | 300 | 700 | 600 | 800 | 900 | 700 | 1000 |

**Section D**

1. **Compulsory question:**  **15X1=15**
2. Calculate Fisher’s Index numbers from the data given below and show that it satisfies Time reversal Test and factor reversal test.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Products** | **A** | **B** | **C** | **D** | **E** |
| **2015- Price** | 6 | 2 | 4 | 10 | 8 |
| **2015-Quantity** | 50 | 100 | 60 | 30 | 40 |
| **2020-Price** | 10 | 2 | 6 | 12 | 12 |
| **2020-Quantity** | 56 | 120 | 60 | 24 | 36 |

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