

Register Number:

DATE:

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

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| **BBA Regular – II SEMESTER** |
| **SEMESTER EXAMINATION: APRIL 2020** |
| **BBA 2319 – QUANTITATIVE TECHNIQUES – II** |

**Time: 2 ½ Hours Max Marks: 70**

**Section-A**

I. Answer any **FIVE** questions. Each question carries **2 marks**. (5x2=10)

1. Define Business statistics.
2. What is qualitative and quantitative classification of data?
3. Mention the advantages of tabulation.
4. Mention the components of time series.
5. The combined mean height of 60 boys is 60.8 cms. The mean height of the first 30 boys is 62 cms and that of the last 20 boys is 61.2 cms. Find the mean height of the remaining boys.
6. Determine Q1 and Q3: 15, 13, 20, 25, 4, 8, 11, 6, 7, 10

**Section- B**

II. Answer any **THREE** questions. Each question carries **5 marks**. (3x5=15)

7. Briefly explain the limitationsof statistics.

8. Compute mean using step deviation method.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Wages** | Below 56 | Below 64 | Below 72 | Below 80 | Below 88 | Below 96 |
| **No of workers** | 3 | 11 | 22 | 27 | 31 | 35 |

9. A man travelled by a car for 3days. He covered 480Kms each day. On the first day he drove for 10 hours at 48Kms per hour, on the second day he drove for 12 hours at 40Kms per hour and on the last day he drove for 15 hours at 32Kms per hour. What was his weighted average speed?

10. Compute fisher’s index number from the following data and calculate the Time reversal test.

|  |  |  |
| --- | --- | --- |
| **Commodities** | **2017** | **2018** |
|  | **Price** | **Quantity** | **Price** | **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 |

**Section- C**

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

11. i) Calculate Karl Pearson’s Co-efficient correlation from the given data: (10marks)

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

ii) Differentiate between primary and secondary data with examples. (5 marks)

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

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Profit/loss** | -4 to-3 | -3 to-2 | -2 to-1 | -1 to-0 | 0 to 1 | 1 to 2 | 2 to 3 | 3 to 4 | 4 to 5 | 5 to 6 |
| **No. of shops** | 4 | 10 | 22 | 28 | 38 | 56 | 40 | 24 | 18 | 10 |

Calculate:

a. The average profit made by a retail shop.

b. total profits made by all the shops.

c. The coefficient of variation of earnings.

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

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Year** | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
| **Sales** | 80 | 90 | 92 | 83 | 94 | 99 | 92 |

1. Plot the given data and trend values on the graph sheet
2. Estimate the sales for the year 2021 and 2022.

**Section – D**

IV. Answer the following **COMPULSORY** question carrying **15 marks**. (1x15=15)

14. a)Calculate mode using grouping and analysis table. (8 marks)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **X** | 0-5 | 5-10 | 10-15 | 15-20 | 20-25 | 25-30 | 30-35 |
| **F** | 1 | 3 | 10 | 6 | 10 | 9 | 1 |

b) Calculate rank correlation from the following: (7 marks)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **X** | 60 | 34 | 40 | 50 | 45 | 41 | 22 | 43 | 42 | 66 |
| **Y** | 75 | 32 | 35 | 40 | 45 | 33 | 45 | 50 | 45 | 40 |

What is the degree of correlation?