

Register Number:

Date: XX/10/2019

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

BBA Regular - II SEMESTER

SEMESTER EXAMINATION: APRIL 2020

BBA 2319– Quantitative Techniques - II

Time- 2 1/2 hrs Max Marks-70

This paper contains 4 printed pages and four parts

**Section A**

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

1. List out two applications of Index Numbers.
2. What is the purpose of Time Series .Analysis?
3. Write any two limitations of Statistics.
4. What is meant by nonsense correlation? Give an example.
5. Distinguish between primary and secondary data.
6. There are two factories of an establishment employing 100 and 80 workers respectively. If the arithmetic means of the daily wages paid by the two factories are Rs, 275 and Rs, 225 respectively, find the arithmetic mean of the salaries of the workers of the establishment as a whole.

**Section B**

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

1. Calculate mode for the following data:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Class Interval** | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 |
| **Frequency** | 3 | 10 | 15 | 10 | 5 | 2 |

1. Distinguish between Correlation and Regression.
2. The following data shows the quantities (in Tonnes) produced by XYZ Ltd. using their three plants situated in three different places for the last four consecutive years.

|  |  |  |  |
| --- | --- | --- | --- |
| Year | Plant I | Plant II | Plant III |
| 2015 - 16 | 20 | 40 | 80 |
| 2016 - 17 | 50 | 30 | 50 |
| 2017 - 18 | 20 | 40 | 40 |
| 2018 - 19 | 40 | 60 | 20 |

Represent the data in a suitable diagram.

1. From the following data find out the missing frequency if the median is 50.

Marks: 10 – 20 20 – 30 30 – 40 40 – 50

No. of Students: 2 8 6 ?

Marks: 50 – 60 60 - 70

No. of Students: 15 10

**Section C**

**Answer any two of the following 2 X 15 = 30**

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Commodities** | **2017** | | **2018** | |
| **Price per Unit** | **Quantity**  **(in Crores)** | **Price per Unit** | **Quantity**  **(in Crores)** |
| **A** | 6 | 34 | 8 | 67 |
| **B** | 5 | 64 | 3 | 90 |
| **C** | 4 | 80 | 6 | 110 |
| **D** | 9 | 47 | 10 | 52 |
| **E** | 8 | 40 | 8 | 34 |

1. Calculate the index number using the following methods:
2. Laspeyre’s Method
3. **Passche’s Method**
4. **Fisher’s Ideal Price Index method**
5. **Also show that it satisfies Time Reversal Test**
6. Following data represents the weight of 200 randomly selected students

Weight (in kgs): 40 – 45 45 – 50 50 – 55 55 – 60

No. of Students: 14 26 40 53

Weight (in kgs): 60 – 65 65 – 70 70 – 75

No. of Students: 35 20 12

Calculate the following:

1. Mean
2. Third Quartile
3. Standard Deviation
4. Coefficient of Variation
5. a) Calculate the trend values by five yearly Moving Average Method

Year: 2005 2006 2007 2008 2009 2010 2011 2012 2013

Sales : 12 14 18 24 22 20 24 21 25

(units in Lakhs)

b) The following table provides data about the percentage of students who have free university meals and their CGPA scores. Calculate the Spearman’s Rank Correlation between the two and interpret the result.

|  |  |  |
| --- | --- | --- |
| State University | % of students having free meals | % of students scoring above 8.5 CGPA |
| Pune | 14.4 | 54 |
| Chennai | 7.2 | 64 |
| Delhi | 27.5 | 44 |
| Kanpur | 33.8 | 32 |
| Ahmedabad | 38 | 37 |
| Indore | 15.9 | 68 |
| Guwahati | 4.9 | 62 |

(10 + 5)

**Section D**

**Compulsory Question 1 X 15 = 15**

1. Following are the data of XYZ Corporation on revenue and cost of advertisement. (in Million Dollars)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Revenue | 39 | 65 | 62 | 90 | 82 |
| Cost of Advertisement | 7 | 10 | 12 | 20 | 32 |

1. Calculate the following:
2. Coefficients of regression
3. Coefficient of Correlation using regression coefficients
4. Coefficient of Determination
5. Construct the two regression lines
6. Calculate the revenue, if the expenditure on advertisement is 25 Dollars

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