

Registration Number:

Date & session:

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**ST JOSEPH’S UNIVERSITY, BENGALURU -27**

**B.Sc. – 2nd SEMESTER**

**SEMESTER EXAMINATION: APRIL 2024**

**(Examination conducted in May / June 2024)**

**ECS 2221: STATISTICS FOR ECONOMICS**

**(For current batch students only)**

**Time: 2 Hours Max Marks: 60**

**This paper contains TWO printed pages and THREE parts**

**PART-A**

1. **Answer any TEN of the following. 3X10=30**
   1. Define statistical economics.
   2. Five students scored the following points in a game: 18, 22, 15, 30, and 25. Calculate the arithmetic mean of their scores.
   3. Define Geometric mean.
   4. Mention the four scales of measurement in statistics.
   5. Define Mean deviation.
   6. State any three significance of measuring dispersion.
   7. What is conditional probability, and give an example.
   8. Define regression and its types.
   9. Distinguish between one-tailed and two-tailed tests.
   10. Define skewness.
   11. Distinguish between Laspeyres and Paasche index numbers.
   12. What are Type I and Type II errors in hypothesis testing?

**PART-B**

1. **Answer any THREE of the following. 5X3=15**
   1. Calculate the standard deviation and coefficient of variation from the following.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Income | 100-200 | 200-300 | 300-400 | 400-500 | 500-600 | 600-700 |
| No. of families | 4 | 12 | 18 | 10 | 6 | 2 |

* 1. Calculate coefficient of correlation from the data given below:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| X | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
| Y | 15 | 16 | 14 | 13 | 11 | 12 | 10 | 8 | 9 |

* 1. What is a hypothesis? Explain the types of hypothesis testing?
  2. Calculate the mean deviation from median using the following.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Wages | 0-100 | 100-200 | 200-300 | 300-400 | 400-500 | 500-600 | 600-700 | 700-800 |
| No. of persons | 5 | 8 | 7 | 12 | 28 | 20 | 10 | 10 |

* 1. From the following series of annual data, find the trend line by the method of semi-averages. Also estimate the value for 2020.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Year | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| Annual data | 170 | 231 | 261 | 267 | 278 | 302 | 299 | 298 | 340 |

**PART-C**

1. **Answer any ONE of the following. 15X1=15**
   1. Define Fisher’s ideal index and, construct a price index number of the group of four commodities by using Fisher’s ideal formula:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Commodity | Base Year | | Current Year | |
| Price per unit | Expenditure (Rs.) | Price per unit | Expenditure (Rs.) |
| A | 2 | 40 | 5 | 75 |
| B | 4 | 16 | 8 | 40 |
| C | 1 | 10 | 2 | 24 |
| D | 5 | 25 | 10 | 60 |

* 1. Explain how time series analysis can be utilized for economic forecasting, including examples of moving average and least-square methods.