



Register Number:

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ST. JOSEPH'S COLLEGE (AUTONOMOUS), BANGALORE-27
B.A. ECONOMICS– III SEMESTER
SEMESTER EXAMINATION: OCTOBER 2019
ECA 3118: STATISTICAL METHODS FOR ECONOMICS

Time- 2 ½ hrs.

Max Marks-70

This paper contains 3 printed pages, 3 parts and 1 graphical problems (Ques No 2)

Part – A

I Answer any 10 of the following

[10 x 3 = 30]

1. Construct a frequency distribution table [discrete series] from the following data of daily income of 25workers.

5, 3, 2, 4, 4, 4, 6, 2, 2, 5, 4, 7, 3, 3, 6, 7, 7, 8, 7, 9, 10, 5, 5, 5, and 5.

2. Draw a Simple bar diagram from the following data regarding the profits realised by 6 city start-ups in one year

| Start ups | SU1 | SU 2 | SU 3 | SU 4 | SU 5 | SU 6 |
|-----------|-----|------|------|------|------|------|
| profit | 40 | 60.5 | 62 | 79.5 | 90 | 11.5 |
| s | | | | | | |

3. Find the mean value for the following raw data of state share of GST 13, 14, 14, 29, 25, 13 and 28.
4. State the characteristics of a good average.
5. The yearly productivity[Prod/Acre] of 2 cash crops for the last 6 years is given, using range and coefficient , find which crop is consistent

| Year | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---------|------|------|------|------|------|------|
| Crop –A | 40 | 56 | 38 | 22 | 29 | 62 |
| Crop B | 49 | 46 | 35 | 25 | 43 | 55 |

6. Following are the final data regarding ranking of 10 trainees before and after a leadership training programme, The sum of difference between ranks that is R_1 and R_2 [D_2] Is equal to 100 , find the rank correlation.
7. You are given the following information about advertising and sales, calculate two regression lines

| | Adv. Expenditure [x] [Rs in lakhs] | Sales [y] [Rs in lakhs] |
|------------------------------|--|-----------------------------|
| Mean | 10 | 90 |
| Standard deviation | 3 | 12 |
| Correlation coefficient =0.8 | | |

8. What is Kurtosis? Mention the types of kurtosis.
9. What are Time and factor reversal test?
10. What are the components of Time series analysis?
11. Construct Price Index by using Laspeyers method for the following values
 $\sum p_1q_0=200$, $\sum p_0q_0=160$ and $\sum p_1q_1=130$.
12. A warehouse of a Farmer consists of 10 gunny bags of organic fertiliser and 20 gunny bags of inorganic fertiliser. Find probability of selecting the gunny bag of organic fertiliser.

PART-B

II Answer any 2 of the following [2x 5 = 10]

13. Determine the value of Median in the following frequency distribution regarding deforestation to melting Ice, released by World Economic Forum of 6 important cities of the world with different geography size.

| | | | | | | |
|-----------|----|----|----|----|----|----|
| City size | 10 | 15 | 20 | 25 | 30 | 35 |
| Frequency | 7 | 5 | 12 | 18 | 8 | 4 |

14. Calculate quartile deviation and its coefficient from the following observations relating to 15 beneficiaries of poverty eradication programme

| | | | | | | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 48 | 52 | 56 | 62 | 66 | 47 | 51 | 58 | 60 | 66 | 68 | 70 | 64 | 73 | 63 |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|

15. Explain the different uses and problems of index numbers.

PART-C

III. Answer any 2 of the following [2 x 15 = 30]

16. Find Mean, Median and mode for the following distribution of expenditure of 60 families

| | | | | | | | | | |
|--------------------|-------|-------|-------|-------|------|-------|-------|-------|--------|
| Expenditure | 10-20 | 20-30 | 30-40 | 40-50 | 50-0 | 60-70 | 70-80 | 80-90 | 90-100 |
| Number of families | 1 | 2 | 3 | 5 | 7 | 12 | 16 | 10 | 4 |

17. Calculate the 2 regression equations for the following data by method of Least squares

| | | | | | |
|------------|---|---|---|----|---|
| Demand [x] | 1 | 2 | 3 | 4 | 5 |
| Price [y] | 1 | 3 | 7 | 10 | 9 |

18. Calculate fisher's ideal index from the following data and prove that it satisfies both time reversal and factor reversal test.

| Commodity | 2018 | | 2019 | |
|-----------|-------|-------------|-------|-------------|
| | Price | Expenditure | Price | Expenditure |
| A | 8 | 80 | 10 | 120 |
| B | 10 | 120 | 12 | 96 |
| C | 5 | 40 | 5 | 50 |
| D | 4 | 56 | 3 | 60 |
| E | 20 | 100 | 25 | 150 |

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