

**ST. JOSEPH'S COLLEGE OF ARTS & SCIENCE (AUTONOMOUS)
CUDDALORE - 1**

CLASS : I BBA (CA)
SUBJECT : BUSINESS STATISTICAL METHODS
SUBJECT CODE : 21ABS22

QUESTION BANK

PART – A (2MARK)

1. Write the different source of collecting secondary data.
2. What is Measure of location?
3. Define Median and its uses.
4. Define Measures of central tendency.
5. Define harmonic mean.
6. Define Range.
7. Define Standard deviations.
8. Define skewness.
9. Define mean deviation.
10. What is combined standard deviation?
11. State the Karl Pearson's coefficient of skewness formula.
12. Define correlation.
13. Write down the regression equations.
14. Write down any two properties of correlation.
15. What is difference between correlation and regression.
16. State the Karl Pearson's coefficient of skewness formula.
17. Define correlation.
18. Write down the uses of correlation.
19. Write Spearman's Rank Correlation formula.
20. What is Index number?
21. What is the component of seasonal indices?
22. Explain Time Reversal test.
23. What is an aggregated method?
24. Define consumer price index.
25. what is cost of living index.
26. What is time series?
27. State any two methods of measuring trend.
28. Define components of Time series.
29. Explain cyclical variation.
30. What is irregular variation?

PART – B (5 MARK)

31. Explain the various method of collection of primary and secondary data.

32. Compute geometric mean from the following data.

| | | | | | | | | |
|---|---|----|----|----|----|----|----|-----|
| X | 5 | 15 | 25 | 40 | 55 | 60 | 80 | 100 |
| f | 2 | 8 | 10 | 20 | 12 | 8 | 4 | 2 |

33. Calculate mean deviation from median and it's co-efficient of median for the following data.

| | | | | | | | |
|------------|-----|-------|-------|-------|-------|-------|-------|
| Size: | 0-9 | 10-19 | 20-29 | 30-39 | 40-49 | 50-59 | 60-69 |
| Frequency: | 8 | 14 | 15 | 20 | 16 | 13 | 9 |

34. Compute the values of harmonic mean from the following data.

| | | | | | |
|-----|------|-------|-------|-------|-------|
| C-I | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 |
| f | 8 | 15 | 22 | 20 | 10 |

35. Calculate the Quartile deviation from the following data.

| | | | | | | | | |
|---|----|----|----|----|----|----|----|----|
| X | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 |
| f | 2 | 8 | 10 | 22 | 7 | 4 | 2 | 1 |

36. Calculation Spearman's Rank correlation from the following data.

| | | | | | | | | | | |
|---|----|----|----|---|----|----|----|----|----|----|
| X | 48 | 33 | 40 | 9 | 16 | 16 | 65 | 24 | 16 | 57 |
| Y | 13 | 13 | 24 | 6 | 15 | 4 | 20 | 9 | 6 | 19 |

37. Calculate correlation coefficients from the following data.

| | | | | | | |
|---|----|----|----|----|----|----|
| Y | 58 | 53 | 40 | 90 | 56 | 60 |
| Y | 30 | 32 | 24 | 60 | 50 | 40 |

38. Explain Problems in the construction of Index numbers.

39. Explain measurement of seasonal variation

40. Derive time reversal test and Factor reversal test.

41. Explain Scatter diagram.

42. Explain different methods of correlation.

43. Calculate Correlation coefficients from the following data.

| | | | | | | |
|---|----|----|----|----|----|----|
| Y | 58 | 53 | 40 | 90 | 56 | 60 |
| y | 30 | 32 | 24 | 60 | 50 | 40 |

44. Calculate Spearman's Rank correlation from the following data.

| | | | | | | | | | | |
|---|---|---|---|---|---|----|---|---|----|---|
| x | 5 | 6 | 7 | 8 | 9 | 10 | 1 | 2 | 3 | 4 |
| y | 1 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 2 |

45. Obtain simple aggregated method for the following data

| Commodity | Price | |
|-----------|-------|------|
| | 1999 | 2000 |
| A | 16 | 10 |
| B | 21 | 21 |
| C | 41 | 61 |
| D | 10 | 12 |
| E | 81 | 12 |

46. Obtain price relative index for the following data

| Commodity | rupees | |
|-----------|--------|------|
| | 2000 | 2022 |
| A | 10 | 16 |
| B | 23 | 45 |
| C | 45 | 34 |
| D | 22 | 35 |
| E | 20 | 23 |

47. Obtain three yearly moving average method for the following data..

| | | | | | | | |
|--------------|------|------|------|------|------|------|------|
| Year | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1985 |
| Sales (1000) | 78 | 82 | 85 | 90 | 97 | 100 | 105 |

48. Obtain Five yearly moving average method for the following data..

| | | | | | | | |
|--------------|------|------|------|------|------|------|------|
| Year | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
| Sales (1000) | 60 | 55 | 75 | 34 | 45 | 65 | 22 |

49. Obtain Four yearly moving average method for the following data..

| | | | | | | | |
|--------------|------|------|------|------|------|------|------|
| Year | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
| Sales (1000) | 160 | 155 | 175 | 134 | 145 | 165 | 122 |

50. Obtain Free hand method for the following data..

| | | | | | | | |
|--------------|------|------|------|------|------|------|------|
| Year | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1985 |
| Sales (1000) | 78 | 82 | 85 | 90 | 97 | 100 | 105 |

PART – C (10 MARK)

51. Calculate arithmetic mean, median and mode for the following data

| | | | | | | | | | | |
|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Marks | 10-13 | 13-16 | 16-19 | 19-22 | 22-25 | 25-28 | 28-31 | 31-34 | 34-37 | 37-40 |
| No. of Stud. | 8 | 15 | 27 | 51 | 75 | 54 | 36 | 18 | 9 | 7 |

52. The scores of two batsman A and B in ten innings during a certain season are:

A : 32 28 47 63 71 39 10 60 96 14

B : 19 31 48 53 67 90 10 62 40 80

Find (using coefficient of variation) which of the batsman, A or B is more consistent in scoring.

53. Find Mean deviation from median for the given data

| | | | | | | | | |
|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Marks | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 | 80-90 |
| No. of students | 2 | 6 | 12 | 18 | 25 | 20 | 10 | 7 |

54. Calculate the two Regression Equations from the following data.

| | | | | | | | | |
|----------|----|----|----|----|----|---|----|----|
| X | 25 | 15 | 20 | 10 | 12 | 9 | 14 | 17 |
| Y | 8 | 13 | 19 | 15 | 10 | 7 | 20 | 12 |

Also estimate Y when X=20.

55. Ten competitors in beauty contest are ranked by three judges and are given below.

State which pair of judges have common taste in beauty .

| | | | | | | | | | | |
|-----------|---|---|----|----|---|---|---|----|---|---|
| Judge I | 1 | 5 | 9 | 10 | 4 | 7 | 3 | 8 | 6 | 2 |
| Judge II | 4 | 3 | 7 | 8 | 5 | 6 | 1 | 10 | 9 | 1 |
| Judge III | 7 | 9 | 10 | 1 | 3 | 2 | 8 | 4 | 1 | 6 |

56. Find the Fisher's ideal index number and Factor reversal test and Time reversal test for the following data.

| Commodity | P_0 | Q_0 | P_1 | Q_1 |
|-----------|-------|-------|-------|-------|
| A | 2 | 10 | 8 | 8 |
| B | 4 | 14 | 12 | 12 |
| C | 5 | 16 | 10 | 15 |
| D | 3 | 15 | 5 | 15 |

57. Fit a Trend line by the Method of Least Squares from the following data.

| Year | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1985 |
|--------------|------|------|------|------|------|------|------|
| Sales (1000) | 78 | 82 | 85 | 90 | 97 | 100 | 105 |

58. Explain component of time series analysis.

59. Using the following data calculate Fisher's ideal index numbers and show that it satisfies both the time reversal and factor reversal test

| Commodity | Price per unit | | No. of Units | |
|-----------|----------------|--------------|--------------|--------------|
| | Base year | Current year | Base year | Current year |
| P | 6 | 10 | 50 | 56 |
| Q | 2 | 2 | 100 | 120 |
| R | 4 | 6 | 60 | 60 |
| S | 10 | 12 | 30 | 24 |
| T | 8 | 12 | 40 | 36 |

60. Obtain following data Fisher's ideal index method, weighted aggregated method, laspeyre's method.

| Commodity | Price | | Quantity | |
|-----------|-------|------|----------|------|
| | 1999 | 2000 | 1999 | 2000 |
| A | 16 | 10 | 50 | 56 |
| B | 21 | 21 | 10 | 12 |
| C | 41 | 61 | 60 | 60 |
| D | 10 | 12 | 30 | 24 |
| E | 81 | 12 | 40 | 36 |