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**Roll No. \_\_\_\_\_\_\_\_\_\_\_\_**

**MBA-1645**

**M.B.A. (I Semester) Examination, Dec. 2018**

**BUSINESS ADMINISTRATION**

**Quantitative Techniques**

*Time Allowed: Three Hours] [Maximum Marks: 70*

**Note:** Answer **all** questions.

**Q. 1.** Attempt any **six** of the following. **5\*6=30**

1. Discuss the role of statistics in managerial decision- making.
2. Describe briefly merits-demerits and utility of mode.
3. Elaborate briefly multiplicative model of time series analysis.
4. Find the index number for the following data using 1980 as the base year.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Year | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 |
| Price | 40 | 50 | 60 | 70 | 80 | 100 | 90 | 110 |

1. Differentiate between correlation and regression.
2. Find the correlation coefficient.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| x | 1 | 0 | 2 | 6 | 4 | 3 | 3 |
| y | 85 | 80 | 70 | 55 | 90 | 90 | 95 |

1. What do you mean by type I error and type II error.
2. Discuss application of Z- test.

**Q. 2.** Calculate median for the following data: **10**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Wages(Rs) | 20-21 | 21-22 | 22-23 | 23-24 | 24-25 | 25-26 | 26-27 | 27-28 | 28-29 |
| No. of workers | 8 | 10 | 11 | 16 | 20 | 25 | 16 | 9 | 6 |

**OR**

What do you mean by inferential statistics? Discuss its application in managerial decision-making.

**Q. 3.** What are various types of index number? Describe briefly uses of index numbers. **10**

**OR**

Given below are the figures of a factory:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Year | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 |
| Production | 80 | 90 | 92 | 83 | 94 | 99 | 92 |

Fit a straight line trend to these figures and plot on the graph.

**Q. 4.** Obtain the two regression equation by the method of least square from the paired value of x and y given below and find the correlation coefficient using the regression coefficient. **10**

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

**OR**

What do you mean by correlation? Discuss various types of correlation.

**Q. 5.** What do you mean by hypothesis testing? Discuss formulation of hypothesis. **10**

**OR**

Two marketing researchers adopted different sampling techniques while investigating the same group of customers to find the number of customers falling in different buying- intelligence levels.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Researchers | No. of customers in each level | | | | Total |
| Below averages | Averages | Above averages | Genius |
| 1 | 80 | 66 | 40 | 14 | 200 |
| 2 | 42 | 31 | 20 | 7 | 100 |
| Total | 122 | 97 | 60 | 21 | 300 |

Are the two sampling techniques and buying intelligence significantly independent? (Use x = 0.05).