**Bachelor of Commerce with Accountancy, Finance & Insurance Examination: October 2014: Semester V (Fresh)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Day & Date** | **Semester** | **Subject Name** | **Time** | **Code** | **Max. Marks** |
| **Wednesday**  **29/10/204** | **V (Fresh)** | **Statistical theories & Business applications** | **11.00 AM**  **to**  **01.30 PM** | **540319** |  |

**Note: 1) All Questions are compulsory.**

**2) All questions carry equal marks.**

**Q.1** Attempt any three from the following. **(3×5=15)**

**a)** Define Primary and secondary data and distinguish between them.

**b)** From the following data calculate mean, median and mode.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| X : | 11 | 12 | 13 | 14 | 15 |
| F : | 3 | 5 | 7 | 3 | 2 |

**c)** From the following calculate Quartile-Deviation.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Class-Interval : | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 |
| Frequency : | 15 | 20 | 30 | 20 | 15 |

**d)** What is correlation? Explain giving examples.

**e)** From the following calculate coefficient of variation (C.V.)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Class-Interval : | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 |
| Frequency : | 12 | 18 | 30 | 20 | 15 | 5 |

**Q.2** Attempt any three from the following. **(3×5=15)**

**a)** If n1=100; n2=50; X1=60; X2=90; σ1=4; σ2=6

Find combined mean and combined standard deviation.

**b)** Explain the meaning of r=0; r=+1 and r=-1.

**c)** From the following data calculate spearman’s coefficient of rank correlation.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| X : | 67 | 42 | 53 | 66 | 62 | 60 | 54 | 68 |
| Y : | 78 | 80 | 77 | 73 | 75 | 68 | 63 | 74 |

**d)** From the following obtain regression equation of Y on X and estimate Y when X=6.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| X : | 7 | 4 | 8 | 6 | 5 |
| Y : | 6 | 5 | 9 | 8 | 2 |

**e)** Explain any two components of Time Series:

**Q.3** Attempt any three from the following. **(3×5=15)**

**a)** What is Questionnaire? Give its characteristics.

**b)** From the following data obtain trend values by taking three yearly moving averages.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Year : | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 |
| Production  (in’000): | 15 | 18 | 20 | 21 | 23 | 25 | 26 | 28 | 30 |

**c)** From the following obtain regression coefficients and hence find correlation coefficient.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| X : | 2 | 4 | 5 | 6 | 8 | 11 |
| Y : | 18 | 12 | 10 | 8 | 7 | 5 |

**c)** From the following data calculate Pearson’s coefficient of correlation.

n=12; Σx=35; Σy=60; Σx2=148; Σy2=450; Σxy=105

**e)** What are merits and demerits of Mean?

**Q.4** Attempt any three from the following. **(3×5=15)**

**a)** From the following data obtain equation of a straight line trend by the method of least-square.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Year : | 1991 | 1992 | 1993 | 1994 | 1995 |
| Sales  (in lakh of Rs.): | 12 | 10 | 13 | 11 | 14 |

**b)** If coefficient of rank correlation between x and y is 0.8 and their sum of squares of the differences in ranks is 33. Find number of pairs of x and y.

**c)** Give properties of regression coefficients.

**d)** What is statistics? Give its limitations.

**e)** What is scatter diagram? Explain.

**Q.5** Attempt any three from the following. **(3×5=15)**

**a)** From the following data calculate D4 and P80.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Class-Interval : | 0-20 | 20-40 | 40-60 | 60-80 | 80-100 |
| Frequency : | 6 | 10 | 18 | 30 | 15 |

**b)** What are the requirements of a good average?

**c)** Find mean, median and mode for the following.

55, 65, 75, 65, 85, 75, 95, 75, 50, 75

**d)** Find the following data calculate mean-deviation from mean.

45, 65, 66, 72, 80, 90, 93, 85, 88, 96

**e)** The mean and standard deviation of 100 observations were 40 and 10 respectively. If one item was wrongly taken as 30 instead of 3; find correct mean and standard-deviation.