|  |  |  |  |  |  |  |  |  |  |  |  |
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D.K.M.COLLEGE FOR WOMEN (AUTONOMOUS), VELLORE-1

**SEMESTER EXAMINATIONS**

 **NOVEMBER- 2016 15CPCO1D**

**ADVANCED BUSINESS STATISTICS**

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***Time: 3 Hrs Max.Marks: 75

SECTION-A (5x 6 =30)

**Answer ALL the questions.**

1. (a) Calculate the Spearman’s coefficient of correlation from the following data:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| x | 75 | 88 | 95 | 70 | 60 | 80 | 82 | 50 |
| Y | 115 | 130 | 140 | 110 | 105 | 135 | 135 | 90 |

(Or)

(b) From the following data you are required to calculate Karl Pearsons co-efficient of correlation.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| S.No of student  | 101 | 102 | 103 | 104 | 105 |
| Marks in commerce | 58 | 78 | 92 | 85 | 87 |
| Marks in accountancy | 46 | 55 | 74 | 68 | 57 |

1. (a) Define Sampling? What is sampling error and standard error? Illustrate with suitable example

(Or)

(b) Write a short on

1. Type l Error
2. Type II Error
3. (a) Explain the various type of hypothesis.

(Or)

(b) How do you test the Ho hypothesis?

1. (a) Calculate Chi-square value, weight of 10 students is as follows:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SI.no | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Weight | 36 | 45 | 42 | 55 | 45 | 40 | 55 | 45 | 52 | 40 |

 We can say that the variance of the distribution of weight of all students from which the above

 sample of 10 students was drawn is equal 20 kgs. Test this 5% and 1% of significant.

(Or)

(b) Plot less than ogive and more than ogive for the following data:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Use of production  | 4 - 6 | 6 - 8 | 8 -10 | 10 -12 | 12 - 14 | 14 -16 |
| No of farms | 13 | 111 | 182 | 105 | 19 | 7 |

1. (a) What do you mean by poisson distribution? Explain its feature.

(Or)

(b) Set up an analysis of various table for following per acre production data. For three varieties of

 wheat, each grown on 4 plots and state if the variety differences are significant.

|  |  |
| --- | --- |
| Plots of Land | Per acre Production data  |
| Variety of Wheat |
| A | B | C |
| 1 | 6 | 5 | 5 |
| 2 | 7 | 5 | 4 |
| 3 | 3 | 3 | 3 |
| 4 | 8 | 7 | 4 |

SECTION-B (3x15 =45)

 **Answer any THREE of the following questions.**

1. From the following data calculate the both regression equation from the least squares method?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| X | 1 | 2 | 3 | 4 | 5 |
| Y | 2 | 5 | 3 | 8 | 7 |

1. Briefly explain the various methods of sampling.
2. Nine individuals are chosen at random from a population and their weight are found to be in pounds,110, 115, 118, 120, 122, 125, 128, 130, 139, In the light of these data, discussed the mean weight of population is 120 1bs calculate the t-value.
3. Calculate the chi-square value the following data? A die is thrown 132 times with following results.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| No of turned up  | 1 | 2 | 3 | 4 | 5 | 6 |
| Frequency | 16 | 20 | 25 | 14 | 29 | 28 |

1. In an experiment on pea-breading the following.

Frequencies of seeds were obtained 315 round and yellow. 101 wrinkled and yellow, 108 round and green, and 32 wrinkled and green and total 556. Theory predicts that the frequencies should be in the proportion of 9:3:3:1. Use chi-square test to examine correspondence between theory and practice.

**\* \* \* \* \* \* \***