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

**SEMESTER EXAMINATIONS**

 **NOVEMBER - 2017 15CPCO1D**

**ADVANCED BUSINESS STATISTICS**

Time : 3 Hrs Max.Marks : 75

SECTION-A (5x 6 =30)

**Answer ALL the questions.**

1. (a) On the basis of the following information compute:
2. $r\_{23.1}$ (ii) $r\_{13.2}$

$r\_{12}=0.70$; $r\_{13}=0.61; r\_{23}=0.40$.

(Or)

 (b) Given $r\_{12}=0.28$, $r\_{23}=0.43,$ $r\_{31}=0.51$

 $σ\_{1}=2.7 , σ\_{2}=2.4 , σ\_{3}=2.7 $

 Find the regression equation of $x\_{3}$ on $x\_{1}$ and $x\_{2}$.

1. (a) Explain the role of Poisson Distribution.

(Or)

 (b) Calculate standard error of mean from the following data showing the amount paid by 100 firms

 in Mumbai on the occasion of Durga Puja.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Mid value (Rs.) | 39 | 49 | 59 | 69 | 79 | 89 | 99 |
| No of firms | 2 | 3 | 11 | 20 | 32 | 25 | 7 |

1. (a) What is the change that occur in a leap year selected at random which contains 53

 Wednesdays?

(Or)

 (b) Briefly describe about quota sampling.

1. (a) The following table gives a classification of sample of 160 plants of their flower colour and

 flatness of leaf.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Flat leaves | Curled leaves | Total |
| White flower  | 99 | 36 | 135 |
| Red flower  | 20 | 5 | 25 |
| Total | 119 | 41 | 160 |

 Test whether the flower colour is independent of the flatness of leaf.

(Or)

 (b) A biased coin was thrown 400 times and 240 heads turned up. Find the probability of throwing

 heads in a single trail almost certainly lies between 0.53 and 0.67.

1. (a) In a sample of 8 observation, the sum of the squares of deviation of the sample values from the

 sample mean was 94.5 and in another sample of 10 observation, it was found to be 101.7. Test

 whether the difference of variances is significant.

(Or)

 (b) White short notes on

1. F – test.
2. F distribution.
3. Application of F – test.

SECTION-B (3x15 =45)

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

1. The simple correlation co – efficient between temperature ($x\_{1}$), corn yield $(x\_{2})$ and rainfall $(x\_{3})$ are

$r\_{12}=0.59, $ $r\_{13}=0.46 and r\_{23}=0.77$. Calculate partial correlation co – efficient $r\_{12.3}$ and multiple correlation coefficient $R\_{1.23}$.

1. The following mistakes per page were observed in a book:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No of mistakes per page | 0 | 1 | 2 | 3 | 4 |
| No of times the mistake occurred | 211 | 90 | 19 | 5 | 0 |

Fit a Poisson distribution to fit data.

1. Explain the different methods of sampling.
2. From the following information state whether the two attributes viz. condition of house and condition of child are independent.

|  |  |  |
| --- | --- | --- |
| Condition of child | Condition of house | Total |
| Clean | Dirty |
| Clean | 69 | 51 | 120 |
| Fairly clean | 81 | 20 | 101 |
| Dirty | 35 | 44 | 79 |
| Total | 185 | 115 | 300 |

1. Below are given the yield per acre of wheat for six plots entering a crop competition, three of the plots being shows with wheat of variety A and three with variety B.

|  |  |
| --- | --- |
|  | Yields in fields per acre |
| Varity | 1 | 2 | 3 |
| A | 30 | 32 | 22 |
| B | 20 | 18 | 16 |

Set up a table of ANOVA state whether the difference between the yields of two varieties are significant. (Table value of F@5% Level for 1 and 4 d.f. is 7.71).

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