

## End-Semester Examination : Statistics for Decision Making - 1

Time: 2 Hr.s

Date: 22<sup>nd</sup> Nov. 2019

- Note:** 1. Answer as much as you can. Maximum you can score is 50  
2. Use of Calculator, Statistical Tables allowed
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1. The operator of a certain machine suspected that the number of defectives produced in the machine in a shift has a relation with the speed of the machine. He collected data for 12 days which is as follows:

M/c Speed	No. of Defectives
14.2	9
11.9	6
15.9	12
18.4	12
9.1	6
14.9	9
16.4	11
10.2	7
14.1	10
16.7	9
11.6	8
12.0	7

- Plot a Scatter Diagram to explore the relationship, and offer your comments.
- Find the Correlation Coefficient.
- Work out the Regression Line.
- Find out the R-square
- Using the Regression Line, Estimate that, if the machine is run at a speed of 15.5, what will be the No. of Defectives in that shift.

[20]

2. State and briefly explain different methods for generating Random Numbers

[10]

3. Using Random Number Table in "RMMR Tables", generate 10 random numbers.

Use the same to generate 10 random samples from

Normal Dtn. with Mean = 165 cm. and S.D. = 3 cm. [Show steps]

[10]

4. Illustrate different ways of presenting Statistical Data.

[10]

5. Find the Table values for

- Upper 10% value for "Z" distribution
- Lower 5% value for "Chi-square" distribution with 6 d.f.
- Upper 2.5% value for "Chi-square" distribution with 10 d.f.
- Upper 1% value for "t" distribution with 15 d.f.
- Upper 1% value for "F" distribution with 7,10 d.f.

[10]