

Code: 17D20301

M.Tech III Semester Regular Examinations January 2019

**RESEARCH METHODOLOGY**

(Common to all branches)

(For students admitted in 2017 only)

Time: 3 hours

Max. Marks: 60

Answer all the questions

\*\*\*\*\*

- 1 Describe the different types of research. Clearly point out the difference between an experiment and a survey.

**OR**

- 2 What is research design? Discuss the basis of stratification to be employed in sampling for public opinion on inflation.

- 3 Explain and illustrate the procedure of selecting a random sample.

**OR**

- 4 Distinguish between an experiment and survey. Explain the survey method of research.

- 5 Using the method of least squares, find an equation of the form  $y = ax+b$  that fits the following data:

x	0	1	2	3	4
y	1	5	10	22	38

**OR**

- 6 Explain how you would work out the following statistical measures often used by researchers: (i) Coefficient of variation. (ii) Arithmetic average. (iii) Coefficient of skewness. (iv) Regression equation of  $X$  on  $Y$ .

- 7 A machine puts out 16 imperfect articles in a sample of 500. After machine is overhauled, it puts out three imperfect articles in a batch of 100. Has the machine improved? Test at 5% level of significance.

**OR**

- 8 The theory predicts the proportion of beans, in the four groups A, B, C and D should be 9 : 3 : 3 : 1. In an experiment among 1600 beans, the numbers in the four groups were 882, 313, 287 and 118. Does the experimental result support the theory? Apply  $\chi^2$  test.

- 9 What are the different forms in which a research work may be reported? Describe.

**OR**

- 10 Describe in brief, the layout of a research report covering all relevant points.

\*\*\*\*\*