Exam.Code:0971
Sub. Code: 7361

1129

**M.E. (Electronics and Communication Engineering)**
**Third Semester**
**ECE-1307: Research Methodology**

**Time allowed: 3 Hours** **Max. Marks: 50**

***NOTE**: Attempt any five questions.*

x-x-x

I. Attempt the following:-

a) Define research methodology? How it is different from research method?

b) What is the need to review the literature?

c) Define hypothesis?

d) What are "Simple Blind" and "Double blind" Peer Review methods?

e) What is Citation Analysis?

f) What is the need for research ethics?

g) What are the applications of Student T test?

h) Distinguish between "Accuracy" and "Precision

i) What are Variables & Hypothesis?

j) What is systematic and snow ball type of sampling? (10x1)

## UNIT – I

II. Explain any three types of research designs with the help of suitable examples. (10)

III. a) Differentiate between 'Census survey' and 'Sample Survey'?

b) Analyze multi-stage and sequential sampling? (2x5)

IV. a) State and Explain Three Characteristics of Scientific Research

b) Explain the Scope of a literature review? Write the points which must keep in mind while doing the literature survey? (2x5)

## UNIT – II

V. a) What are the different types of sampling? Also explain why probability sampling techniques are preferred over non probability sampling techniques.

b) What are the classifications of measurement scales? Explain the meaning of each class with examples. (2x5)

P.T.O.

VI. a) Explain the significance of research report. Also explain the various steps involved in writing a research report.

b) What is data preparation? What is the need of data preparation? (2x5)

VII. The output voltage measured from two brands of compressors A and B is as follows. The samples were selected randomly.

Brand A: 230, 225,220,250,225,220,220,230,240,245

Brand B: 220, 215, 222,230,240,245.230,225,250,240

Assume that the output voltage follows normal distribution has equal Variance. Test the hypothesis that the output voltage from both the brands is same. Use alpha= 0.05. Also construct a 95% confidence interval on the difference in the mean output voltage. (10)

x-x-x