

2021  
M.E. (Electronics and Communication Engineering)  
Third Semester  
ECE-1307: Research Methodology

Time allowed: 3 Hours

Max. Marks: 50

**NOTE:** Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.

x-x-x

I. Attempt the following:-

- a) What do you mean by research methodology?
- b) What are the different methods of data collection?
- c) Define case study and indicate its characteristics?
- d) Define qualitative research?
- e) What is standard deviation?
- f) What do you mean by null hypothesis?
- g) What are the various sampling errors?
- h) Write the formula for Chi square test?
- i) What are applications of student 't' test?
- j) What is statistical analysis?

(10x1)

**UNIT - I**

II. Describe different types of research pointing out the distinctions among them and the purposes of those types. (10)

III. Explain in brief the different measures of dispersion? Discuss the advantages of measurement of dispersion over measurement of central tendency? (10)

IV. Describe the following in detail:-

- a) Content analysis
- b) Ex post facto research
- c) Co relational research
- d) Experimental research

(10)

P.T.O.

(2)

**UNIT – II**

V. Find the mean, mode and median of the following frequency distribution:

Variable	10-13	13-16	16-19	19-22	22-25	25-28	28-31	31-34	34-37	37-40
Frequency	8	15	27	51	75	54	36	18	9	7

(10)

VI. What is the difference between mean deviation and standard deviation? Calculate the standard deviation for the following data:

Variable	3.5	4.5	5.5	6.5	7.5	8.5	9.5
Frequency	3	7	22	60	85	32	8

(10)

VII. Explain the significance of a research report and narrate the various steps involved in writing such a report. (10)

x-x-x