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Total Number of Pages: 02

M.TECH

MT 302,SCOE303

3rd Semester Regular / Back Examination – 2016-17

RESEARCH METHODOLOGY

BRANCH(S): CIVIL ENGINEERING

Time: 3 Hours

Max Marks: 70

Q.CODE:Y830

**Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.**

Q1 Answer the following questions: (2 x 10)

- Distinguish between *restricted sampling* and *probabilistic sampling*.
- What are the various steps involved in research process?
- What do you mean by *research design*?
- State various *sampling methods*.
- Differentiate between *univariate* and *bivariate*.
- Define *ANOVA*.
- What are various measures of *central tendency*?
- Distinguish between *survey* and *experiment*.
- Find the standard deviation for the following data.

8, 14, 6, 8, 12, 13, 9, 11, 14

- What is the purpose of a report preparation?

Q2 a) Distinguish between qualitative research and quantitative research. (5)

b) Explain the various roles and features of research hypothesis. (5)

Q3 a) Describe the various methods of collecting data . Explain the difference between collection of data through questionnaires and schedules. (5+5)

Q4 Establish an analysis of variance table for the following per acre production data for three variables of rice grown in 3 different lands and state the comments about the variety differences. (10)

Type of land	Per acre production data for variety of rice		
	A	B	C
1	6	5	5
2	8	5	4
3	4	3	3

Q5	a) Explain with examples various methods of research design.	(5)
	b) Briefly describe the structure of a research report.	(5)
Q6	a) Describe different types of <i>measurement scales</i> used in research.	(5)
	b) Explain Chi-square Test .	(5)
Q7	Describe the various guidelines to be followed in preparing a <i>Questionnaire</i> . State the types of questions included in a questionnaire.	(5+5)
Q8	Write short notes on any TWO .	(5 x 2)
	a) Significance of T test	
	b) Referral sampling	
	c) Motivation in research	
	d) Pilot survey	