Reg. No.										

MANIPAL UNIVERSITY

SEVENTH SEMESTER B. ARCH. DEGREE EXAMINATION – NOVEMBER 2015

SUBJECT: ARC 411 – RESEARCH TECHNIQUES

(2010 SCHEME)

Wednesday, November 25, 2015

Time: 10:00 – 13:00 Hrs. Max. Marks: 50

- **Answer any FIVE full questions.**
- **Illustrate your answers with neat and proportionate sketches.**

1A. What are the ways to reduce experimenters bias in research design.

1B. Explain clarity of thought through operational definition in research design.

1C. What is artefact and Bias? What are the six ways in which artefact could occur?

(5+1+4 = 10 marks)

2A. What are the strengths and weakness of mixed methodology in case study research.

2B. The aim is to find the movement pattern of users along the streets of Manipal Town and the reason behind it. Explain the five steps for designing this case study research.

2C. What are the four ways to increase validity in case study research?

(1+5+4 = 10 marks)

3A. Name and explain with examples the three types of qualitative research.

3B. What are the tactics used to derive meaning in qualitative research?

3C. What are the Testing methods in qualitative research? Explain with examples

(4½+1½+4 = 10 marks)

4A. What are different methods of sampling? Explain the relevance of each in various research-situations.

4B. A population is divided into three strata of strength 5000, 2000 and 3000. Construct the sample of size n = 84 with proportionate allocation. If the three strata are different in standard deviations what will be the most appropriate compositions of sample? Assume standard deviations to be 15, 18 and 5 respectively for the three strata.

4C. Explain the relevance of sample size in predicting Population Mean.

(10 marks)

5. It is found that illumination level due to day-lighting at the centre of a room is quite different even when the area of opening is the same, if parameters like, Height and width of the opening (proportion), Sill level, Window orientation, Reflectance of floor, ceiling and wall, Proportion of the room (D/B). A research experiment is to be carried out to find out the

optimum sill level for achieving highest illumination at the centre of a room at working height when the area of opening is fixed.

5A. Design the research experiment by identifying Dependent, Independent and extraneous variables.

5B. Suggest methods of measurement and scale of measurement for the dependent and independent variables.

5C. What are the probable outcomes of this experiment?

(3+4+3 = 10 marks)

6. **Explain the following briefly:**

6A. Confidence Intervals of Mean estimation

6B. Linear regression and its application

6C. Hypothesis formulation

6D. Measures of dispersion

(2½ marks × 4 = 10 marks)