



Ph. D. Course Work Programme, 2019

MOHANLAL SUKHADIA UNIVERSITY

FACULTY: SCIENCE (INCLUDING GEOLOGY AND ENVIRONMENTAL SCIENCE)

**VENUE: Room No 99, University College of Science, MB Campus, Durga
Nursery Road**

PAPER 1: ICT & RM SECTION

Section : B

- Research: definition, applications, characteristics.
- Types of research, objectives. Paradigms of research: different steps in research process.
- Research methodology.
- Philosophy of research.
- Formulation of research problems: Review of literature.
- Reasons for review: procedure of review. Writing of literature reviewed.
- Research problem and its importance: sources. Consideration and formulation of research problems, formulation of objectives.
- Ethical dimensions of Research: Relation between facts and values in social science.
- Research design: causal inferences and controlled experiments.
- Experimentation and different types of experimental designs: Non-experimental designs, cross sectional designs, panels studies, case study, alternative research strategies.
- Building blocks of social scientific research: research question, formulating hypotheses.
- Variables and their types: measurement, indexes, scales.
- Making empirical observations: direct and indirect analysis, content analysis.
- Sampling: basics, types, margin of error.

- Interviews: survey, research and preparing a questionnaire.
- Data analysis: univariate data analysis, frequency distribution, descriptive statistics; measuring.
- Relationships and testing hypotheses: bivariate data analysis, cross tabulation analysis.
- Relationships: measures of association, testing of statistical significance.
- Difference of means test: analysis of variance.
- Analysis: Regression analysis, correlation analysis. Multivariate analysis, two way analysis of variance, multiple regressions, logistic regression, measures of fit.

Note:

- 1. Candidates are advised to report at 8 a.m. on 9th May 2019 for biometric registration. Lecture session is scheduled from 9 a.m. to 11 a.m.**
- 2. Schedule of Lecture topics shall be announced later.**

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