

Paper-II

ENS-CW-02: Research Methodology

Unit-I

Meaning of Research in Environmental Sciences: Purpose, Characteristics and types of research; Process of Research: Formulation of objectives, Formulation of hypothesis; Methods of Research: Survey, observation, case study, experimental, historical and comparative methods; Difficulties in research of Environmental Sciences.

Unit-II

Research Proposal and experimental design: Research material collection, preparation and presentation, methods of literature collection, planning and execution of investigation. Statistical methods - Collection and classification of data, Measures of central tendency, Measures of dispersion, Probability, Theoretical distributions, Correlation and regression, Tests of Hypothesis and significance, Experimental designs.

Unit-III

Preparation of Review, articles, reports and research papers for journals and thesis; Preparation of research proposals for different funding agencies; checklist for a good proposal/ report/ research paper etc.

Unit-IV

Scientific databases: Sciencedirect, Medline and Pubmed. etc.

Ethical, legal, social and scientific issues in Environmental research: Role of IPR in Research and development.

Unit-V

A brief idea about the funding agencies such as DST, DBT, ICMR, CSIR, MoEF, UGC and others; Basic Knowledge of organizing conference, symposium, workshop, exhibition etc, Avenues during and after Ph.D.

Books/References:

Research Methodology: Methods and Techniques by C.R. Kothari, New Age International Publishers, ISBN: 81-224-1522-9

Statistical Methods for Research Workers by Fisher R. A., Cosmo Publication, New Delhi ISBN: 81-307-0128-6

Design and Analysis of Experiments by Montgomery D.C. (2001), John Wiley, ISBN: 0471260088 Research Methodology: A step by step for beginners by Ranjeet Kumar, Sage Publication.

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