

**SYLLABUS**  
**RET Examination-2019, Chemistry**  
**Bankura University**

**Group A: Research Methodology**

- A1. Introduction to Research Methodology:** Meaning of Research, Objectives of Research, Motivations in Research, Types of Research, Criteria of good Research, What is Research Problem? Basic and Applied research.
- A2. Review of Literature and Literature survey:** Meaning and Purpose of the Literature Review & Literature Survey, Identification of the related Literature.
- A3. The Research Report:** General format of the Research report, style and formatting of writing, typing of the research report.
- A4. Testing of Hypotheses and Sampling design:** Definition, Concepts Concerning Testing of Hypotheses, Formulation of hypotheses and related difficulties; Needs of sampling, Sampling for chemical analysis, Random sampling
- A5. Analysis of Variance & Chi-Square test:** What is ANOVA? Basic ANOVA concepts, Definition of chi-square test, Significance in Statistical analysis, Understanding of t-tests.
- A6. Error Analysis:** Basics of a measurement and its interpretation, mean, standard deviation, variance, correlation coefficient.
- A7. Quantification of research output:** Impact Factor, *h*-index, *i10*-index and *i20*-index, *G*-index
- A8. Computer Applications in Research:** Literature survey using web, handling search engines, Preparing presentations: (i) Research papers: Using word processing software – MS Word/Latex/others, Drawing graphs and diagrams – Origin/Excel/others. (ii) Seminar presentations – Power point for oral and poster presentations,(iii) Data presentation.

**References :**

1. C R Kothari , Research Methodology: Methods and Techniques , New Age International (P) Ltd. (2010) , New Delhi

2. Garg, B.L., Karadia, R., Agarwal, F. and Agarwal, U.K., 2002. *An introduction to Research Methodology*, RBSA Publishers.
3. Handbook of Communication and Social Interaction Skills by John O. Greene, Brant Raney Burleson.
4. Trochim, W.M.K., 2005. *Research Methods: the concise knowledge base*, Atomic Dog Publishing. 270p.
5. Ranjit Kumar, *Research Methodology: A Step-by-Step Guide for Beginners*, SAGE Publications
6. Shanghai Arch Psychiatry. 2017; 29(3): 184-188.

### **Group B: CHEMISTRY**

**AS PER WITH THE BANKURA UNIVERSITY SYLLABUS IN CHEMISTRY**