

Tantia University
Sri Ganganagar
Ph.D. Course Work Syllabus
(Revised as Per UGC Regulation 2022)
Chemistry

Maximum Marks-120

Minimum Marks-66

PART-A

Part A- 60 Marks

Total Credits = 6

Total Hours=6x45= 270 Hours

Introduction to Research

Introduction of Research, Research methodology, Defining Research problem and formulation of hypothesis, research design, sampling design, measuring and scaling techniques, methods of data collection.

Pure and Applied Research, Exploring or Formulative Research, Descriptive Research, Diagnostic Research/Study, Evaluation Research/Studies, Action Research, Experimental Research, Historical Research, Surveys, Case Study, Field Studies
Research Ethics: Characteristics and format of research paper, article, thesis writing, review of Related Literature, Purpose of the review, Identification of the related literature. Organizing the related literature.

Statistics

Concept of statistics, relevance in research, parametric and non-parametric data; graphical representation of data: histogram, frequency polygon, ogive and pie chart; Measures of Central Tendency, Correlation, t-test chi square test

Computer Application

Basic and fundamental knowledge of Computer and its Applications. Introduction, Application Area, Operating System, Windows, Office, Internet.

PART-B

Part B- 60 Marks (Subject based)

Total Credits = 6

Total Hours=6x45= 270 Hours

1. Electrochemistry and Electroanalytical Techniques, Corrosion and Anodising industry
2. Green Chemistry - Solvent free synthesis, catalysis and industrial methods of extraction of Natural products

3. Organic synthesis
4. Lanthanide chemistry - Applications of lanthanides in medicines and catalysis, Green lanthanides
5. Industrial Biotechnology - modern bioreactors, biomaterials and tissue engineering
6. Spectroscopic techniques of identification including gamma ray spectroscopy
7. Micellar and surface chemistry
8. Organometallic chemistry and coordination chemistry
9. Environmental chemistry
10. Food and Drug analysis