

# Tantia University

Sri Ganganagar  
Ph.D. Course Work Syllabus (2016-17)  
Geography

Maximum Marks-100

Minimum Marks-55

## PART-A

**Part A- 40 Marks**

**Total Credits = 4**

**Total Hours=4x45= 180 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. Geomorphology** : Fundamental concepts; Factors controlling landform development, Endogenetic and Exogenetic forces; Denudation process; weathering and erosion, Geosynclines, mountain building, continental drift and plate tectonics; Concept of Geomorphic Cycle, Landforms associated with

fluvial, glacial, arid, coastal and karst cycles, Slope forms and processes; Environmental and Applied Geomorphology.

2. **Climatology** : Composition and structure of the atmosphere; Insolation; Heat budget of the earth; Distribution of temperature, atmospheric pressure and general circulation of winds; Monsoons and jet streams; Stability and instability of the atmosphere; Air-masses; Fronts, temperate and tropical cyclones; Types and distribution of precipitation; Classification of world climates; Koppen's and Thornthwaite's schemes; Hydrological Cycle; Global warming.
3. **Oceanography** : Origin of ocean basins; Bottom relief of Indian, Atlantic and Pacific Oceans; Ocean deposits; Coral reefs; Temperature and salinity of the Ocean; Density of sea water; tides and ocean currents; Sea-level changes.
4. **Bio-Geography** : Physical factors influencing world distribution of plants and animals; forms and functions of ecosystem : Forest, grassland, marine and mountain ecosystem; Bio-diversity and its depletion through natural and man induced causes; ecosystem; Bio-diversity and its depletion through natural and man induced causes; Conservation and management of ecosystems; Environmental hazards and problems of pollution; Ozone depletion.
5. **History of Geographic Thought** : General character of Geographic knowledge during the ancient and medieval period, Foundations of Modern Geography : Contribution of German, French, British and American schools; Conceptual and methodological developments during the 20<sup>th</sup> century; Changing paradigms; Man and Environment, determinism and possibilism, areal differentiation and spatial organization; Quantitative revolution; Impact of positivism, humanism, radicalism and behaviouralism in Geography

- 6. Population Geography** : Nature, scope, subject matter and recent trends; Patterns of world distribution, growth and density of population; Policy issues; Patterns and processes of migration; Demographic transition; Population-resource regions.
- 7. Settlement Geography** : Site, situation, types, size, spacing and internal morphology of rural and urban settlements; Ecological processes of urban growth; Urban fringe; City-region; Settlement systems; Primate city; Rank-Size rule; Settlement hierarchy; Christaller's Central Place theory; August Losch's theory of market centres.
- 8. Economic Geography** : Location of economic activities and spatial organization of economics; Classification of economics; Sectors of Economy; primary, secondary tertiary and quaternary; Natural resources; Renewable and non-renewable; Conservation of resources.
- 9. Agricultural Geography** : Concept and techniques of delimitation of agricultural regions; Measurement of agricultural productivity and efficiency; Crop combinations and diversification; Von Thunen's Model; Agricultural systems of the world.
- 10. Industrial Geography** : Classification of industries : Weber's and Losch's approaches; Resource based and footloose industries.
- 11. Geography of Transport and Trade** : Models of transportation and transport cost; Accessibility and connectivity : Inter-regional and Intra-regional : Comparative cost advantages.

- 12. Political Geography** : Definition and scope of Political Geography : Geopolitics; Global strategic views (Heartland and Rimland theories); Concept of nation; state and Nation-state; Boundaries and frontiers; Politics and world resources; Geography and Federalism.
- 13. Social Geography** : Nature and scope of social geography; Social structure and social processes; Elements of social geography-ethnicity, tribe, dialect, language, caste and religion; Concept of social well-being.
- 14. Cultural Geography** : Nature and scope of Cultural Geography; Environment and culture; Concept of culture areas and culture regions; Theories of tribal groups; Dwelling places as cultural expressions.
- 15. Regional Planning** : Regional concept in Geography; its application to planning; Concept of planning region; Regional hierarchy, Types of regions and methods of regional delineation; Conceptual and theoretical framework of regional planning; Regional planning in India : Concept of development; Indicators of development; Regional imbalances.
- 16. Geography of India** : Physiographic divisions; Climate : its regional variations; Vegetation types and vegetation regions; Major soil types; Coastal and Marine resources; Water resources; Irrigation; Agriculture; Agroclimatic regions; Mineral and power resources; Major industries and industrial regions; Population distribution and growth; Settlement patterns; Regional disparities in social and economic development.
- 17. Cartography** : Map as a tool in Geographical studies; Types of maps; Techniques for the study of spatial patterns of distribution; Single purpose and composite maps; Choropleth, Isopleth and Chorochromatic maps and pie diagrams; Mapping of location specific data; Accessibility and flow maps. Remote sensing and computer application in mapping; Digital mapping, Geographic Information System (GIS) : Thematic maps.

**18. Statistical Methods** : Data sources and types of data; Statistical diagrams, study of frequency distribution and cumulative frequency; Measures of central tendency; Selection of class intervals for mapping; Measures of dispersion (Simple index of dispersion). and concentration (Bernard's index of concentration; Kant's index of concentration); Standard deviation; Lorenz curve; Methods of measuring associations among different attributes; Simple and multiple correlation; Regression.

Measurement of spatial patterns of distribution; Nearest-neighbour analysis; Scaling techniques, rank score, weighted score, Sampling techniques for geographical analysis. Quantification in major fields of geography : morphometric analysis, Land capability classification, Measurement of agricultural efficiency; Quantitative methods in economic regionalization.