

PAPER –I: RESEARCH METHODOLOGY

End Term Exam	:Marks: 75	Time: 3 hrs
Seminar Presentation	:Marks: 25	
Total marks	:100	

Unit	Outline
I	Definition and significance of research, Characteristics of research, Steps in Identification, Selection and formulation of research problem, Research questions, Research design, Formulation of Hypothesis, Review of Literature.
II	Philosophical Research, Historical Research, Descriptive Research, Survey Research including Case Studies. Scientific research; Preparation of a research synopsis. Report writing.
III	Sampling theory, types of sampling, Steps in sampling, Sampling and Non-sampling error, Sample size, advantages and limitations of sampling. Collection of Data : Primary Data – (Meaning – Data Collection methods) – Secondary data – (Meaning – Relevances, limitations and cautions).
IV	Meaning and purpose of parametric test and non-parametric test; ‘H’ test, its meaning, purpose, assumptions and uses; Analysis of variance technique of “F” test; Analysis of co-variance technique; Regression and step regression; Difference between parametric and Non-parametric test; Chi square test,
V	Meaning and purpose of correlation; Pearson’s correlation Technique; Multiple-correlation Technique; Factor-Analysis Technique with special reference to centred method.

BIBLIOGRAPHY

1. Corey, Stephen M. : Action Research to improve School Practice, New York, Bureau of Publication, Columbia University.
2. Beard, R. Bligh D. Harding, A (1978) Research into Teaching Methods in Higher Education, Guildford : Society for Research into higher Education.
3. Mackenzie, N. Eraut, M, Jones H. (1975) Teaching and Learning: An introduction to New Methods and Resource in Higher education, Paris : UNESCO and International Association of Universities.
4. K.J Rao : Research in Geography, S.K Jain & Sons.
5. C. Agarwal: Research in Methodology in Geography, S.K Jain & Sons.
6. C. Agarwal : Research in Methodology in Geography, S. K Jain & Sons.
7. P.K Sharma : Futuristic Geography, S.K Jain & Sons.
8. N. Izhar : Geography & Health, S.K Jain & Sons.
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**PAPER–II: STATISTICAL ANALYSIS AND COMPUTER APPLICATION IN
GEOGRAPHY**

Unit	Outline
I	Computer Applications in Geography: i. Basics of Computer – Hardware, Software, Operating System ii. Spreadsheet tools: Introduction to spreadsheet applications, features, using formulas and functions, data storing, features for statistical data analysis, generating charts/graph and other features, tools – Microsoft excel or similar. iii. Presentation tools: Introduction, features and functions, presentation of Power Point, customizing presentation, showing presentation, tools – Microsoft Power Point or similar. iv. Online search for research article (Inflibnet, google scholar and other online journal web portals)
II	Sources of data, levels of measurement, data mining and metadata: i. Census ii. WTO iii. NSSO, NEDFI, RBI, Planning Commission, Finance ministry data iv. Google Public data directory v. Data mining
III	Statistical data analysis in Geographic research: i. Descriptive statistics: Descriptives, frequencies, crosstab, ANOVA ii. Correlation iii. Regression iv. Hierarchical cluster analysis v. Time Series Analysis vi. Test of significance
IV	Remote Sensing and GIS in Geographic research: i. Image interpretation, ii. Image classification – Supervised, unsupervised; iii. Data products, Remote Sensing data, GPS data, vector, raster, point, line, polygon, spatial analysis (Proximity and overlay).
V	Graphical representation of Geographical data and mapping (layout) using Excel, SPSS and ILWIS.

Suggested Readings

1. Birch, T.W: Maps: Topographical and Statistical, Clarendon press, Oxford, 1949.
2. Burrough P.A : Principles of Geographic Information systems for Land Resource Assessments, Oxford University Press, New York, 1986.
3. Campbell, J.B: Introduction to Remote Sensing, the Guilford Press, New York,(Third Ed) 2002.
4. Clarke, K.C Parks, B.O, M.P Crane,(Ed): Geographic Information Systems and Environmental Modeling, Prentice-Hall of India, New Delhi, 2002.
5. Curran, Paul J: Principles of Remote Sensing, Longman, London, 1985.
6. Fraser Taylor D.R : Geographic information Systems, Pergamon Press Oxford, 1991.
7. Garnett, Alice: Geographical Interpretation of Topographical Maps,George Harrap and Co, London, 1945. McGraw Hill, New York, 1974.

8. Hord R.M: Digital Image Processing of Remotely Sensed Data, Academic, New York, 1989.
9. Lillesand T.M & R.W Keifer: Remote Sensing and Image Interpretation, John Wiley & Sons, New York (Fourth Ed), 1999.
10. Monkhouse: Maps and Diagrams, Mathuen & Co, London, New York, 2000.
11. Peuquet D.J & F. Marble, Introductory Reading in Geographic Information systems, Taylor & Francis, Washington, 1990.
12. Raisz, Erwin: Principles of Cartography, Mc Graw-Hill, New York, 1962.
13. Rao D.P(eds): Remote Sensing for Earth Resources, Association of Exploration Geophysicist, Hyderabad, 1998.
14. Robinson A.H : Elements of Cartography, (Fifth ed) John Wiley & Sons, New York.
15. Sabins, Floyd, F : Remote Sensing Principles and Interpretation (Third Ed), W.H. Freeman and Company, 2000.
16. Singh, R.L: Elements of Practical Geography, Kalyani Publ. Delhi, 1979.
17. Star J and J. Estes. Geographic Information System: An Introduction, Prentice Hall, Englewood Cliff, New Jersey, 1994.
18. Norman K Denzin, University of Illinois at Urbana – Champaign: An Introduction to qualitative Research, Sage 2010.
19. Ajai S Gaur : Statistical Methods for Practice and Research, Sage, 2009.
20. David Silerman Goldsmiths, University of London, UK: Qualitative Research Research, 2012.
21. Gopal K Kanji, Sheffield Hallam University, UK : 100 Statistical Tests, Sage, 2006.
22. George Argyrous, University of New South Wales : Statistics for Research, Sage, 2012.

**PAPER–III(A): RESEARCH TRENDS IN GEOGRAPHY
(PHYSICAL STREAM)**

Unit	Outline
I	Recent thrust areas in Physical Geography: i. Assessment of Biophysical resources; Land, Soil, Water, Forests ii. Holistic approaches to Physical Geography
II	Environmental hazards: i. Types, extent and their management ii. Floods, Landslides, Tropical cyclones, spread of diseases (Malaria, Dengue, Encephalitis, etc.) iii. Environmental degradation – Land, Soil, Water, Air and Loss of Biodiversity.
III	Current Research: Applied Physical Geography – Geomorphology, Climatology, Soil Geography, Hydrology and Biogeography.
IV	Climate change and its impact on Lithosphere, Troposphere and Hydrosphere.
V	System analysis in Physical Geography – Geomorphology, Climatology, Biogeography, Soil Geography, Hydrology; Process studies in Geomorphology, Climatology, Biogeography, Soil Geography and Hydrology.

Suggested Readings

1. Skinner : Dynamic Earth : An Introduction to Physical Geography.
2. Huggett R : Physical Geography: A Human Perspective.
3. Raina NS : Contemporary Physical Geography.
4. Singh S : Geomorphology.
5. Duxbury : Fundamentals of Oceanography.
6. Streck C : Climate Change and Forest.
7. Veryla : Satellite Remote Sensing of Natural Resources.
8. Pratap R : Geographic Information systems.
9. Nag P : Introduction to Geographical Information system.

**PAPER–III(B): RESEARCH TRENDS IN GEOGRAPHY
(HUMAN STREAM)**

Unit	Outline
I	Field of Human Geography: i. Defining the field of Human Geography and its branches ii. Trends of development.
II	Models and techniques in Human Geographic Research: i. Models in Human Geography ii. Application of Quantitative techniques in Human Geographic Research
III	Trends of Human Geographic Research: Human Geographic Research in global and national contexts.
IV	Appraisal of Human Geographic research works: Critical evaluation/review of selected Human Geographic Research works in regional and national contexts.
V	Areas of Human Geographic Research: i. Finding out emerging areas of Human Geographic Research in the context of North-East India ii. Developing relevant themes for Human Geographic Research.

Suggested Readings

1. Newhold KB : Population Geography: Tools and Issues.
2. Lakshmana : Population change and health care.
3. Majumdar PK : Fundamentals of Demography.
4. Young TK : Population Health.
5. Myka F : Decline of Indigenous Populations.
6. Mohanty SP: Census as Social Document.
7. Lehari C Socio-Demographic Profile of Muslims.
8. Day L : Analysing Population Trends.
9. Legg S : Spaces of Colonialism.
10. Das AK : Urban Planning in India.
11. Diddee J : Indian Medium Town : Their Role as Growth Centers
12. Singh S : Housing Geography.
13. Cornwall A: Spaces for Change.
14. Begg I : Urban Competitiveness: Policies for Dynamic Cities.
15. Mukherji : Migration and Urban Decay.
16. Kleniewski: Cities and Society
17. Eade J : Understanding the City
18. Herbert : Geography and the Urban Environment.
19. Markandey K : Spatio-Temploral Urbanization.
20. Magnaghi A : The Urban Village.
21. Dubey RN : Urbanization and Urban Planning in India.
22. Markandey K : Urban Growth Theories and Settlement Systems of India.
23. Lal DS : Oceanography
24. Garrison : Oceanography
25. Singh S : Oceanography
26. Meade MS : Medical Geography.
27. Koenig M : Reproductive Health in India.
28. Akhtar & Izhar: Global Medical Geography
29. Srivastava RC : Agriculture Markets and Transport Network.
30. Singh S : Industrial Geography
31. Nasir J : Locational Analysis of Industries

32. Swarbrooke J : Sustainable Tourism Management
33. Dodd J : Leisure and Tourism: Cultural Paradigms
34. Saxena HM : Transport Geography
35. Singh M : Transport Geography
36. Sharma SP : The Geography of Transport Systems.
37. Malik S : Women, Panchayats and Natural Resource Management
38. Griffin : Doing Women Studies.
39. Warnes A : Geographical Perspectives on the Elderly.Samal KC State NGOs and Disaster Management.
40. Hitchcock S : Geography of Religion
41. Harvey G : Indigenous Religions.

