

6. N. C. A. E. R., Market Towns and Spatial Development in India, New Delhi, 1983.
7. Saxena, H. M., Geography of Marketing: Concepts and Methods, New Delhi, 1984.
8. Scott. P., Geography and Retailing, Hutchinson, London, 1970.
9. Vance, J. C. (Jr.), Merchants World: The Geography of Wholesaling, Prentice Hall, Englewood cliffs, N. J., 1970.

M.A. / M.Sc. (Final) Geography

Paractical - I : Air Photo Interpretation and Remote Sensing

Unit - I

- a) Definition, scope and development of air photo interpretation techniques.
- b) Types and quality of aerial photographs; factors affecting quality of aerial photographs
- c) Tools and geometry of air photographs: Pocket and mirror stereoscope; geometry of aerial photographs.
- d) Aerial camera, lens and filters.
- e) Stages of production of aerial photographs.

Unit - II

- a) Construction of stereograms and streotriplets; mosaics: types and their characteristics.
- b) Basic air photo measurements : Photographic scale and flying height; measuring height of objects.
- c) Displacement : relief and tilt
- d) Calculation of area, number of strips and number of airphotos; measuring angles, shutter speed and expauser interval.
- e) Parallax : slope measurement.

Unit - III

- a) Basic concepts and hisorical development of Remote Sensing techniques.
- b) Process and stages of remote sensing.
- c) Electromagnetic spectrum, properties of electromegnatic waves, energy interaction in the atmosphere and earth surface features.
- d) Basic principles of thermal remote Sensing: properties, characteristics of Indian remote sensing imageries.

Unit - IV

- a) Data analysis : Ground truth collection, concept of signatures, data processing and digital processing.
- b) Satellite remote sensing platforms - Landsat, SPOT, IRS, INSAT; principal characteristics and geometry of scanner.
- c) Orbital characteristics and data production: MSS, TM, LISS I, LISS II and LISS III, HMR>
- d) Equipment and their uses : Optical reflecting projector; diazo printer; overhead reflecting projector; analog image analyser.
- e) Working of above equipment.

Unit - V

- a) Elements of object identification.
- b) Comparison of maps, airphotos and imageries.
- c) Mapping and interpretation of natural and cultural landscapes; field checking with airphotos and imageries.
- d) Application of remote sensing in geomorphic, agricultural, forestry, resource management and environment studies.
- e) Computer based analysis of remote sensing data; GIS data model and structure; GIS and remote sensing integration.

Practical Exercises

Based on Aerial Photographs:

- a) Object identification by Pocket Stereoscope
- b) Indexing of aerial photographs
- c) Interpretation of the following
 - i. Topographical aspects : General physiography, drainage orders and basins, vegetation, surface materials. (One exercise of each aspect)
 - ii Cultural aspects : Landuse-land covers (agricultural and general), field patterns, settlement and transportation lines.

Based on Satellite Imageries : (One exercise of each aspect)

- a) Landuse-land covers.
- b) Urban settlement pattern.
- c) Forest : types and density
- d) Drainage order and basins
- e) Settlement and transportation lines
- f) Topographical aspects.

Suggested Readings:

1. American Society of Photogrammetry: Manual of Remote Sensing, ASP, Falls Church, VA, 1983.
2. Avery, T.E. Interpretation of Aerial Photographs, Burgess.
3. Barrett, E.C. and L.F. Curtis, Fundamentals of Remote Sensing and Air Photo Interpretation, Macmillan, New York, 1992
4. Campbell, J., Introduction to Remote Sensing, Guilford, New York, 1989.
5. Curran, Paul J., Principles of Remote Sensing, Longman, London, 1985.
6. Hord, R. M., Digital Image Processing of Remotely Sensed Data, Academic, New York, 1989
7. Kinnie and Methue, Remote Sensing in Civil Engineering Survey, University Press, London.
8. Luder, D., Aerial Photograph Interpretation: Principles and Applications, McGraw Hill, New York, 1959.
9. Plates, J. E. and L.W. Sangery, Remote Sensing Techniques for Analysis, Hamilton Publishing Co.
10. Robert, G. Reeves et al, Manual of Remote Sensing, Vol. I and II.
11. Smith, H.T.V., Aerial Photographs and their Applications,