

SRI VENKATESWARA UNIVERSITY
B.A/B.Sc. DEGREE COURSE IN GEOGRAPHY
SEMESTER SYSTEM WITH CBCS
SEMESTER IV
W.E.F. 2021-2022
PAPER - IV : GEOGRAPHY OF INDIA

Objectives: to learn 1)topography, soils, drainage system 2) Population density, human settlements, urbanization 3) Agriculture, energy and minerals resources 4) Industrial development 5)Trade and transport system in India.

Unit – I

India: Location, relief structure and drainage systems. Climate, Soils, natural vegetation.

Unit – II

Population: distribution, density, growth and composition. Migration, human settlement types and urbanization.

Unit – III

Land resources, irrigation, Green revolution and problems of Indian agriculture. Energy and mineral resources: coal, petroleum, hydroelectricity and nuclear energy, iron ore, manganese and mica.

Unit – IV

Industries- iron and steel, cotton textile, sugar and petrochemical industries; and industrial regions of India.

Unit – V

Modes of transport and communication, international trade changing pattern of export and import.

Learning outcome

After completion of the Paper, the student will learn about different physical, anthropogenic features, mineral wealth and features agriculture, industries and trade and transport systems in India

Suggested Readings:

1. Deshpande, C D: India – A Regional Interpretation, Northern Book Depot, New Delhi, 1992.
2. Singh, Gopal: Geography of India, Atma Ram and Sons,2006.
3. Shafi, M: Geography of South Asia, McMillian and company, Calcutta, 2000.
4. Singh, R L (ed): India: A Regional Geography, National Geographical Society, India, Varanasi,1971.
5. Spate, D H K and ATA Learmonth: Indian and Pakistan – Land, People and Economy, Methnen and Company, London, 1967.

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Practical: Cartographic Techniques

Objectives

To learn about the concept, techniques and applications of Cartography.

Content

Map – Definition, Scale of map, applications.

Map Projections – classification, polar, zenithal, stereographic, Bonne's and Mercator's projections

Topographic Profiles

Toposheets – Interpretation, slope analysis

Interpretation of Weather maps (one summer, winter and monsoon seasons).

Learning Outcome

After completion of the paper, the student will learn about the importance of scale of a map, importance of map projections, preparation of map, reading and interpretation of a Toposheet and interpretation of Weather maps.

Suggested Readings

1. Anson, R., and Ormelling F. J.,(1994): *International Cartographic Association: Basic Cartographic*, Vol.Pregmen Press.
2. Singh, Gopal., (1998): *Map Work and Practical Geography (4th Edition)*, Vikas Publishing House, Ahmedabad.
3. Gupta, K.K. and Tyagi V.C.,(1992): *Working with Map*, Survey of India, DST, New Delhi.
4. Kraak, M.J., (2010):*Cartography: Visualization of Geospatial Data* (3rd edition), Pearson Education Ltd., London.
5. Misra, R.P.,(2014): *Fundamentals of Cartography* (Second Revised and Enlarged Edition), Concept Publishing, New Delhi.
6. Monkhouse, F. J. and Wilkinson, H. R.,(1973): *Maps and Diagrams*, Methuen, London.
7. Rhind, D. W. and Taylor D. R. F., (eds.) (1989): *Cartography: Past, Present and Future*, Elsevier, International Cartographic Association.
8. Robinson, A. H.,(2009): *Elements of Cartography* (6th Edition), John Wiley and Sons, New York.
9. Sarkar, A.,(2015):*Practical geography: A systematic approach*, Orient Black Swan Private Ltd., New Delhi
10. Sharma, J. P., (2010): *PrayogicBhugol(Hindi)*, Rastogi Publishers, Meerut.

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**Paper-V – INTRODUCTION TO REMOTE SENSING & GEOGRAPHICAL INFORMATION
SYSTEM**

Objectives: *To learn about the 1) Basics of Remote Sensing, 2) Basics of Aerial Photography, Advantages of Remote Sensing and Aerial Photography, 3) Basics of Geographical Information System, 4) GIS data types, GPS, 5) Remote Sensing and GIS integration.*

Unit-I

Introduction to Remote Sensing, Definition, Basis of remote sending.

Electromagnetic spectrum, stages in remote sensing. Platforms of Remote Sensing, type of satellites. Types of Sensors

Unit-II

Introduction to Aerial Photographs: their advantages and types.

Remote sensing in India Developments. Applications of Remote sensing techniques in Geographical aspects.

Unit-III

Introduction to Geographical Information System: Definition, Purpose, Advantages.

History of GIS. Software and hardware requirements. Classification of Software and Hardware

Unit-IV

GIS data types: Spatial and attribute data-Raster and Vector data structure. GPS, Definition, GPS satellites and its applications.

Unit-V

Remote sensing and GIS integration. Application of GIS in various fields of geography.

Learning Outcome

After completion of the paper student will learn about the Remote Sensing, Aerial Photography, Geographical Information System (GIS), Global Positioning System (GPS) and their integration.

Suggested Readings

1. John R. Jensen 2009. Remote Sensing of the Environment; An Earth Resource Perspective, Pearson Education, (Indian Edition) New Delhi.
2. Kumar Meenakshi 2001. Remote Sensing, NCERT, New Delhi.
3. Lillesand and R.W.Kiefer, 2005. Remote Sensing and Image Interpretation, John Wiley and Sons.
4. Pritvish Nag, and M.Kudrat 1998. Digital Remote Sensing, Concept Publishing Company, New Delhi.
5. M.Anji Reddy 2009. Text book of Remote sensing and Geographical Information Systems, BS Publications, Hyderabad.
6. Telugu Academy 2011. B.A./B.Sc., SuduraGrahakaSastram-BowgolikaSamacharaVyavasta.
7. M.Anji Reddy 2008. Text book of Remote sensing and Geographical Information Systems, BS Publications, Hyderabad.
8. Telugu Academy 2011. B.A./B.Sc., SuduraGrahakaSastram-BowgolikaSamacharaVyavasta.
9. Burrough P.A. 1986. Principles of Geographic Information Systems for Land Resources Assessment. Oxform University Press, New York.
10. Fraser Taylor D.R. 1991. Geographic Information System. Pergamon Press, Oxford.
11. Star J. and Estes 1994. Geographical Information Systems: An Introduction. Prentice Hall, Englewood, Cliff, New Jersey.

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Practical: Remote Sensing and GIS

Objectives: *To learn about the 1) Remote Sensing Principles, Platforms, 2) Aerial Photography Principles, 3) GIS data structures, 4) Image processing techniques, 5) Interpretation of Remote Sensing data and application of GIS.*

1. Remote Sensing and GIS: Definition and Components, Development, Platforms and Types,
2. Aerial Photography and Satellite Remote Sensing: Principles, Types and Geometry of Aerial Photograph; Principles of Remote Sensing, EMR Interaction with Atmosphere and Earth Surface; Satellites (Landsat and IRS) and Sensors.
3. GIS Data Structures: Types (spatial and Non-spatial), Raster and Vector Data Structure
4. Image Processing (Digital and Manual) and Data Analysis: Pre-processing (Radiometric and Geometric Correction), Enhancement (Filtering); Classification (Supervised and Un-supervised), Geo-Referencing; Editing and Output; Overlays
5. Interpretation and Application of Remote Sensing and GIS: Land use/ Land Cover, Urban Sprawl Analysis; Forests Monitoring

Learning Outcome

After completion of the paper student will learn about the Remote Sensing data, platforms, Aerial Photography, GIS data structures, Image Processing and Remote Sensing and Aerial Photography data interpretation.

Suggested Readings

1. Campbell J. B., 2007: *Introduction to Remote Sensing*, Guildford Press.
2. Jensen J. R., 2004: *Introductory Digital Image Processing: A Remote Sensing Perspective*, Prentice Hall.
3. Joseph, G. 2005: *Fundamentals of Remote Sensing*, United Press India.
4. Lillesand T. M., Kiefer R. W. and Chipman J. W., 2004: *Remote Sensing and Image Interpretation*, Wiley. (Wiley Student Edition).
5. Nag P. and Kudra, M., 1998: *Digital Remote Sensing*, Concept, New Delhi.
6. Rees W. G., 2001: *Physical Principles of Remote Sensing*, Cambridge University Press.

7. Singh R. B. and Murai S., 1998: *Space-informatics for Sustainable Development*, Oxford and IBH
Pub.

8. Wolf P. R. and Dewitt B. A., 2000: *Elements of Photogrammetry: With Applications in GIS*, McGraw-
Hill.

9. Sarkar, A. (2015) *Practical geography: A systematic approach*. Orient Black Swan Private Ltd.,
New Delhi

10. Chauniyal, D.D. (2010) *SudurSamvedanevamBhogolikSuchanaPranali*, Sharda Pustak
Bhawan, Allahabad