

GONDAWANA UNIVERSITY, GADCHIROLI
MASTER OF ARTS (CHOICE BASED CREDIT SYSTEM SEMESTER PATTERN)
M. A. GEOGRAPHY

SEMESTER I

| S.No. | Theory Paper | Teaching Scheme (Hrs/Week) | Examination Scheme | | | | | | | |
|-------|---|----------------------------|--------------------|--------------------------|----------------------------|-------------|--------|--------------------|----------------------------|-------|
| | | | Duration Hrs | Max Marks | | Total Marks | Credit | Min. Passing Marks | | |
| | | | | External TH Marks (Univ) | Practical / Internal Marks | | | External TH Marks | Practical / Internal Marks | Total |
| 1 | Paper – I - Core subject (History of Geographical Thoughts) | 5 | 3 | 80 | 20 | 100 | 6 | 32 | 8 | 40 |
| 2 | Paper - II- Core subject (Oceanography) | 5 | 3 | 80 | 20 | 100 | 6 | 32 | 8 | 40 |
| 3 | Paper - III- Core subject (Climatology) | 5 | 3 | 80 | 20 | 100 | 6 | 32 | 8 | 40 |
| 4 | Paper - IV (Practical I) | 10 | 6 | 0 | 100 | 100 | 7 | 0 | 40 | 40 |
| Total | | 25 | 12 | 240 | 100/60 | 400 | 25 | 96 | 64 | 160 |

SEMESTER II

| S.No. | Theory Paper | Teaching Scheme (Hrs/Week) | Examination Scheme | | | | | | | |
|-------|--|----------------------------|--------------------|--------------------------|----------------------------|-------------|--------|--------------------|----------------------------|-------|
| | | | Duration Hrs | Max Marks | | Total Marks | Credit | Min. Passing Marks | | |
| | | | | External TH Marks (Univ) | Practical / Internal Marks | | | External TH Marks | Practical / Internal Marks | Total |
| 1 | Paper - I - Core subject (Research Methodology) | 5 | 3 | 80 | 20 | 100 | 6 | 32 | 8 | 40 |
| 2 | Paper - II - Core subject (Geomorphology) | 5 | 3 | 80 | 20 | 100 | 6 | 32 | 8 | 40 |
| 3 | Paper - III- Core subject (Geography of Resources) | 5 | 3 | 80 | 20 | 100 | 6 | 32 | 8 | 40 |
| 4 | Paper - IV(Practical II) | 10 | 6 | 0 | 100 | 100 | 7 | 0 | 40 | 40 |
| Total | | 25 | 12 | 240 | 100/60 | 400 | 25 | 96 | 64 | 160 |

SEMESTER III

| S.No. | Theory Paper | Teaching Scheme (Hrs/Week) | Examination Scheme | | | | | | | |
|-------|--|----------------------------|--------------------|--------------------------|----------------------------|-------------|--------|--------------------|----------------------------|-------|
| | | | Duration Hrs | Max Marks | | Total Marks | Credit | Min. Passing Marks | | |
| | | Theory / Practical | | External TH Marks (Univ) | Practical / Internal Marks | | | External TH Marks | Practical / Internal Marks | Total |
| 1 | Paper - I - Core subject (Geo. Of Manufacturing & Transport) | 5 | 3 | 80 | 20 | 100 | 6 | 32 | 8 | 40 |
| 2 | Paper - II - Core subject (Agriculture Geo.) | 5 | 3 | 80 | 20 | 100 | 6 | 32 | 8 | 40 |
| 3 | Paper - III – Elective Subject i(Population Geography) iii(Geography of tourism) lii (Bio- Geography) | 5 | 3 | 80 | 20 | 100 | 6 | 32 | 8 | 40 |
| 4 | Paper - IV(Practical III) | 10 | 6 | 0 | 100 | 100 | 7 | 0 | 40 | 40 |
| Total | | 25 | 12 | 240 | 100/60 | 400 | 25 | 96 | 64 | 160 |

SEMESTER IV

| S.No. | Theory Paper | Teaching Scheme (Hrs/Week) | Examination Scheme | | | | | | | |
|-------|--|----------------------------|--------------------|--------------------------|----------------------------|-------------|--------|--------------------|----------------------------|-------|
| | | | Duration Hrs | Max Marks | | Total Marks | Credit | Min. Passing Marks | | |
| | | Theory / Practical | | External TH Marks (Univ) | Practical / Internal Marks | | | External TH Marks | Practical / Internal Marks | Total |
| 1 | Paper - I - Core subject (Geography of Settlement) | 5 | 3 | 80 | 20 | 100 | 6 | 32 | 8 | 40 |
| 2 | Paper - II - Core subject (Social Geography) | 5 | 3 | 80 | 20 | 100 | 6 | 32 | 8 | 40 |
| 3 | Paper –III – Elective Subject- i (Regional Planning) ii (Environmental Geography) iii (Political Geography) | 5 | 3 | 80 | 20 | 100 | 6 | 32 | 8 | 40 |
| 4 | Paper - IV(Practical IV) | 10 | 6 | 0 | 100 | 100 | 7 | 0 | 40 | 40 |
| Total | | 25 | 12 | 240 | 100/60 | 400 | 25 | 96 | 64 | 160 |

PATTERN OF EXAMINATION (ALL SEMESTERS)

Theory :

Three theory papers of 80 marks each and of three hours duration will be conducted at the end of each semester.

Practical's :

- 1) One Practical examination of 100 marks and of six hours duration of each semester will be conducted at the end of the same semester.
- 2) Practical examinations of all four semesters will be conducted by internal and External examiners appointed by the University.

Internal Assessment:

- 1) Head of the department will carry out internal assessment of the students on the basis of evaluation report from the concerned teacher/ teachers, under the supervision of the principal of the college and will be done at the end of each semester.
- 2) Distribution of 20 marks of internal assessment is as under –
 - i) Class Attendance 05 marks
 - ii) Home Assignment 05 marks
 - iii) Group discussion / seminar/ Geographical activities etc. 10 marks

Pattern of Question Paper

| | | |
|---------|--|----------------------------|
| Que 1 : | A) from unit I OR B) from unit II | Marks 20 |
| Que 2 : | A) from unit III OR B) from unit IV | Marks 20 |
| Que 3 : | A) from unit I B) from unit I OR C) from unit II D) from unit II | Marks 20 (10 mark each) |
| Que 4 : | A) from unit III B) from unit III OR C) from unit IV D) from unit IV | Marks 20 (10 mark each) |

Rules and Regulation

1. There will be five periods per week for theory papers.
2. The batch of Practical class should not be exceeding 10 students.
3. The minimum passing marks of Theory paper and internal Assessment is 40
4. The minimum passing marks of Practical examination is 40
5. Marks will not be allotted to student if he found absent in study tour.

CERTIFICATE

Department of Geography

Name of College.....

This is to certify that this practical record is the Original practical works of

Shri/ Kumari/ Smt.

Class..... Semester..... During the academic year.

He/she has attended/ not attained the field work/ Study tour prescribed by the Gondwana University
Gadchiroli.

Signature of the teacher who taught the examinee.

1)

2)

Head of the Department

Master of Arts (Choice Based Credit System Semester Pattern)

M. A. Geography

Semester - I

Total Marks=100 Marks

PAPER – I (Core Subject)

6 Credit

Semester Examination =80 Marks

Internal Assessment= 20 Marks

History of Geographical Thoughts

Unit – I

The field of geography, its place in the classification of sciences; geography as a social science and natural science. Selected concepts in Philosophy of geography, distributions, relationship, interaction, areal differentiation and spatial organization.

Unit – II

Contributions of different scholars during ancient medieval and modern period. Geography In the 20th century : Status of Indian Geography, Future of Geography, relating to the development of geographic thought with special reference to changing views on man-environment relationship.

Unit – III

Dualism in geography; systematic and regional geography; physical and human geography; the myth and reality about dualism; Regional geography; Concept of region and regionalization and the regional method.

Unit – IV

Scientific explanations: routes to the scientific explanations (Inductive/Deductive); types of explanations; cognitive description; cause and effect; temporal; functional; ecological system. Laws, theories and models, the quantitative revolution.

Suggested Reading:

- 1 Albert, Ronald, Adams, John S, Gould, Peter (1971) Spatial Organisation, The Geographers View of the World, Prtentice Hall. N.J
2. Ali, S.M. (1966): The geography of Puranas, People Publishing House
3. Amedeo, Douglas (1971): An Introduction to Scientific Reasoning in Geography, John Wiley U.S.A
- 4 Cole, J.P. and King, C.A.M. (1968): Quantitative Geography, John Wiley and sons. London
5. Dixit., R.D. :Political geography: A comtemporary Policies
6. Dixshit, R.D.(ed)(1994): The Arts and Science of Geography-Integrated readings, Prentice Hall of India, New Delhi
7. Hartshorne, R(1959): Perspectives on Nature of geography, Rand McNally and Co.
8. Husain, M. (1984): Evolution of Geographical Thought, Rawat Publication, Jaipur
9. Kothari, C.R.(1993) : Research Methodology, Methods and Techniques Wiley Eastern Ltd, New Delhi
- 10 Mahmood Aslam (1977): Statistical methods in geographical studies, Rajesh Publication, New Delhi
11. Taylor, Peter(1977)Quantitative Methods in Geography, Houghton and Maffin co. Boston
12. Yeats ,M.(1974): An Introduction to quantitative Analysis in Human Geography, Mcgraw Hill Book Co, New York.
- 13 Minshull R. (1970): The Changing Nature of Geography, Hutchinson University Library London

Semester - I

Marks- 100

PAPER – II (Core Subject)

Semester Examination=80Marks

Internal Assessment=20 Marks

6 Credit

OCEANOGRAPHY

Unit – I

Nature and scope of oceanography, History of oceanography. Distribution of land and water; major features of ocean basins, continental margin and deep ocean basins.

Unit – II

Physical and chemical properties of sea water: distribution of Temperature and salinity of oceans and sea. Surface currents – currents of the Atlantic, Pacific and Indian Oceans, thermohaline, waves and tides.

Unit – III

Major Marine Environment, impact of human on Marine Environment, Marine Pollution – causes, Marine Deposits and formation of coral reefs.

Unit – IV

Applied Oceanography – Marine life – factor of Marine Environment, Marine Biozones, law of the sea; exclusive economic zone, Food and Mineral resources of the sea, Oceans and world Geopolitics.

Suggested reading:

Davis Recharj.A.(1986) Oceanography- An Introduction to the Marin Environment,W.M.C.Brown Iowa.

Garrison T (2001): Oceanography- An Introduction to marine science Books/Cole, Pacific Grove. USA

Savindra Singh: Oceanography

Lal : Oceanography

Duxbary C.A. and Cuxbary B : An introduction to the world's Oceans – C Brown Iowa 2nd ed, 1996.

Gross M Grant.: Oceanography a view of the earth, Prantice – Hall inc. New Jersy 1987.

Semester - II

Marks -100

Semester Examination=80Marks

Internal Assessment = 20 Marks

Paper III (Core Subject)

6 Credit

Climatology

Unit – I

Nature and scope of climatology and its relationship with meteorology, Composition, mass and structure of atmosphere.

Insolation: Heat balance of the earth, green house effect; vertical and horizontal distribution of temperature.

Atmospheric Pressure and winds, jet stream

Atmospheric moisture; humidity, evaporation, condensation, precipitation; Formation types, world pattern of rainfall.

Unit – II

Concept of air masses and atmospheric disturbances, ocean atmospheric interaction -- EL Nino, southern oscillation (ENSO) and La Nino, monsoon winds, Norwesters, Cyclones – Tropical and Temperate, Climate of India and its controls.

Unit – III

Climatic classification: Koppen's, Thornthwaite's and Genetics. Major climates of the world—tropical, temperate, polar desert and mountain climate.

Unit – IV

Climatic changes: Evidences, possible causes; global warming, environmental impacts and society's response.

Applied Geography : Impact of climate on Water Balance Study, Soil, Agriculture Activities, House Types and Health.

Suggested Reading :

- 1 Barry R.G.& R.J.Chorley : Atmosphere, weather and Climate. Methuan & Col
2. Critchfield H.J.: General Climatology
3. Trewartha, G.T.: An Introdduction to Climate
4. Subrahmanyam, V.P : General Climatolgy Vol 3& 4 Heritage Publication New Delhi.
5. Savindra Singh: Climatology
6. Lal : Climatology

Semester - I

Marks- 100

PAPER – IV

7 Credit

PRACTICAL – I

1. Preparation and interpretation of the following maps and diagrams. (20 Marks – 2 Periods)
(10 Marks)
Group A
 - i Equivariable
 - ii Equipluves
 - iii Frequency graph
 - iv Rainfall dispersion diagram
 - v Running mean
 - vi Wind rose and compound wind rose**Group B** (10 Marks)
 - i. Water budget graph
 - ii. Climatograph
 - iii. Hythergraph
 - iv. Taylor’s Climograph
 - v. Compound columnar graph
 - vi. Index of aridity and index of moisture
2. Study of Indian daily weather map and weather analysis. (15 Marks – 2Periods)
Study and interpretation of at least four maps of India pertaining to –
 - (a) S. W. Monsoon Season
 - (b) Summer season
 - (c) Transition period
 - (d) Cyclonic
3. Advanced techniques of spatial analysis:
 - (a) **Remote sensing** (15 Marks –2 Periods)
Definition of remote sensing. Remote sensing platforms and scanners. Electromagnetic radiation and physics of remote sensing. Arial remote sensing data products- Arial photographs, types, scales, displacement, parallax, aerial mosaics, radial line methods (graphical) (exercise).
 - (b) **Geographical information system** (10 Marks – 2 Periods)
Introduction to GIS. Fundamental of GIS- Spatial concepts and spatial relationships. Data models and structures- raster and vector. Integration procedure for spatial and non-spatial data. Scanning and digitization exercises. Editing and topology creation. Thematic mapping.
4. Excursion: (20 Marks – 2 Periods)
Visit to any plain, plateau, hilly, coastal area, Mines, Forest, Tiger Project, National Park, Sanaturies, Dams, metorological centre and submit a report with photographs.
5. Viva Voce (10 Marks)
6. Practical Record (10 Marks)

Suggested Reading

- Aronoff S.(1989): Geographic Information System: Management Perspective, DDI Publication Ottawa.
- Burrough P.A. (1986): principles of Geographic information system for Land Resource Management, Oxford University press, New York.
- Barrett E.C. and L.F Curtis (1992): Fundamentals of Remote Sensing and Air photo Interpretation, McMillan New York
- Campbell J(1989): Introduction to Remote Sensing Guilford, New York
- Clendinning J (1985): Principal and use of Surveying Instruments 2nd edition Blockie A
- Curran (1985): Principals of Remote Sensing Longman, London
- Fraser Taylor D.R. (1991) Geographic In information system Pergamum Press oxford,1991
- Hord R.M.(1989): Digital Image processing of remotely sensed data Academic New York
- Hotine, Major M.(1935) : The re-triangulation of Great Britain Empire Survey Review
- Luder D.(1955): Aerial Photography Interpretation: Principals and Application Mc graw Hill, New York.
- Mark S.Monmoni er (1982): Computer assisted geography, Prentice Hall, Englewood Cliff, New Jersey.
- MaquireD.G.M.F Goodchild and D.W. Rhind (eds)(1991): geographic information system : Principals and Application Taylor& francis Washington.
- Mishra R.P and Ramesh,A (1986) : Fundamentals of cartography.
Mcmillan Co.New Delhi
- Pal.S.K(1968): Statistics for Geoscientist_ Techniques and Application, Concept, New Delhi
- Peuquet D.Jand D.F. Marble (1990): Introductory teaching in Geographic Information system. Taylor& Fransis Washinton
- Pratt W.K. (1978): Digital Image Processing, Wiley, New York.
- Rao D.P(ed)(1998): Remote Sensing for Earth Resources, Association of Exploration Geophysicist,
- Star J and J Estes (1994); Geomorphic Information system: An Introduction Prentice Hall Englewood Cliff, New Jers
- Thomas M. Lilles and and Ralph W Kefer,(1994): Remote Sensing and Image Interpretation John Wiley & son, New York.
- Nagtode P. M. & Lanjewar H.D. : Nakashashtra, Pimplapure Publication Nagpur.

Semester - II

PAPER – I (Core Subject)

Marks -100

Semester Examination=80 marks

Internal Assessment =20 marks

6 Credit

RESEARCH METHODOLOGY

Unit - I

Meaning, origine of research, research design, Types of research methods – Formulation of research problem – Objectives and hypotheses: testing of hypotheses.

Unit - II

Characteristics of geographical data – Measurement of data:– Primary and secondary data – Sources of data: traditional and modern – Data compilation. Primary data collection: census and sampling methods – Types of sampling – Spatial adaptation of sampling techniques – Data collection techniques through field work and questionnaires.

Unit - III

Data processing: classification and tabulation – Cartographic representation of data – Descriptive and inferential statistics – Functional and spatial interpretation of the results.

Unit - IV

Preparation of project report: basic heads- Introduction to the problem- Results of analysis- Summary of findings in the light of the hypotheses- Conclusion. Writing of references, Bibliography.

Suggested reading;

Mishra R.P: Research methodology

Bhandarkar: Research methodology in social science

Kothari : Research Methodogy

Nagtode P. M. & Lanjewar H.D. : Nakashashtra, Pimplapure Publication Nagpur.

Semester - II

Marks-100

PAPER – II (Core Subject)

Semester Examination=80 Marks

Internal Assessment = 20 Marks

6 Credit

GEOMORPHOLOGY

Unit - I

Nature and scope of geomorphology, Geological structures and landforms. Uniformitarianism; multicyclic and polygenetic evolution of landscape; concept of threshold; environmental change – climatic change and geochronological methods- documentary evidence, artifacts, major horizons, dendrochronology, pollen, thermoluminescens.

Unit - II

Earth movements-epirogenic, orogenic and cymatogenic earth movements. Forces of crustal instability, isostasy, plate tectonics, seismicity, volcano city, orogenic structures with reference to the evolution of Himalayas.

Unit - III

Exogenic processes: Concept of gradation, agents and processes of gradation, causes, types of weathering, mass movement, erosional and depositional processes and resultant landforms and soil formation, slope evolution, down wearing, parallel retreat and replacement models.

Unit - IV

Geomorphic processes: dynamics of fluvial, glacial, Aeolian marine and karsts processes and resulting landforms; complexities in geomorphologic processes; Erosion surfaces-techniques of identification and correlation. Application of geomorphic mapping, terrain evaluation, land capability and land suitability, classification, urban geomorphology and geomorphic hazards.

Suggested Reading :

1. Chorley, R.G.(1972) Spatial Analysis In Geomorphology, Methuen, London
2. Dr,V.S.Kale& Abhijit Gupta: Introduction to Geomorphology
3. Garner H.F. (1974) : The origin of the Landscape- A synthese of Geomorphology, Oxford university Press London
4. Mitchell C.W.(1973):Terrain Evolution, Longman, London
5. Ollier C.D,(1979) : Weathering, Longman London.
6. Sharma. H.S.(Ed)(1980)" Perspective in Geomorphology, Concept, New Delhi
7. Singh Savindra (1998) Geomorphology, Prayag Publication, Allahabad
8. Skinner B.J. and peter S.C. (1995) The Dynamic Earth, John Willey, New York
9. Spark.B.W.(1960): Geomorpholgy Longman London
10. Naktode P.M., Sheikh J.A. & Dudhapachare Y.Y., Bhurupshashtra va Sagarvidnan.

Semester - II

Marks-100

PAPER – III (Core Subject)

Semester Examination=80 Marks

Internal Assessment = 20 Marks

6 Credit

Geography of Resource

Unit I :- Nature and scope of Geography of Resource, Significance of Resource, Concept of Resource, utilization of Resources; factors affecting on utilization of Resources classification of Resources.

Unit II :- Natural Resources – Renewable resources.

Land – a Resources, soil formation and composition, classification of soil, world soil distribution soil erosion, causes soil, conservation importance, water resources – distribution economic relation of man and water resources water conservation.

Unit III:- Mineral Resource – Importance of mineral Resource Type, characteristics uses world distribution, Iron ore, Manganese, Bauxite copper, Mica, Environmental effect of mineral production conservation power Resources – classification – coal, mineral oil, natural gas Hydro-Electricity.

Unit :- Priotic Resources –ocean as a resources, Animal resources, forest Resources – use of forest resources, type of forest, forest conservation man as a resources, distribution of Human resources problems of population and resources. Agriculture Resources –factors affecting on agriculture Type of Agriculture, major crop wheat, Rice, corm, Tea, cotton sugarcane.

Reference :

- 1) Economic Geography – Alexander J.
- 2) Economic Geography – B. Agunachalam
- 3) Basic of Economic Geography – Boyce, Renold, Red.
- 4) Economic and commercial Geography - Dasgupta.
- 5) Economic and commercial Geography – R.S. Dube, R.L. Singh.
- 6) Economic Geography – H. Robinson
- 7) Economic Geography – Jones and Darkenwald
- 8) Economic Geography – Leong Cheng.
- 9) Geography of Resources – Balbir Negi.
- 10) Geography of Resources – M.P. Karan.
- 11) Geography of Resources – Dr. Kaushik.

Semester - II

Marks-100

PAPER – IV

7 Credit

PRACTICAL – II

1. Basics of computer system: Application in geographical studies. (10 Marks – 2 Periods)
Theoretical aspect of computer system

2. Study of topographical maps (15 Marks – 2 Periods)
Interpretation of maps: Topographical maps.
Aspects of Physical and Human Environment.

(Note: - Teachers should select Topographical maps from plains, plateaus, mountains and coastal regions of India.)

3. Measurement of area by graphical methods. (10 Marks – 2 Periods)

4. Morphometric measurement (45Marks – 4 Periods)

(A) Graphical methods. (10 Marks)

- i) Serial profile
- ii) Superimposed profile
- iii) Projected profile
- iv) Composite profile
- v) Longitudinal profile
- vi) Transverse profile

(B) Slope analysis by using the following methods. (15 Marks)

- i) Wentworth's method
- ii) Raisz and Henry's method
- iii) G. H. method

(C) Drawing and interpretation of following graphs. (10 Marks)

- i) Hypsographic curve
- ii) Altimetric Frequency graph
- iii) Area Height Diagram

(D) Drainage basin analysis (10 Marks)

- i) Determination of stream order
- ii) Stream length and determination of basin area
- iii) Drainage density and texture of topography

E) Viva (10 Marks)

(F) Practical record (10 Marks)

Suggested Readings:

Aronoff S.(1989): Geographic Information System: Management Perspective, DDI Publication Ottawa.

Burrough P.A. (1986): principles of Geographic information system for Land Resource Management, Oxford University press, New York.

Barrett E.C. and L.F Curtis (1992): Fundamentals of Remote Sensing and Air photo Interpretation, McMillan New York

Campbell J(1989): Introduction to Remote Sensing Guilford, New York

Clendinning J (1985): Principal and use of Surveying Instruments 2nd edition Blockie A

Curran (1985): Principals of Remote Sensing Longman, London

Fraser Taylor D.R. (1991) Geographic In information system Pergamum Press oxford,1991

Hord R.M.(1989): Digital Image processing of remotely sensed data Academic New York

Hotine, Major M.(1935) : The re-triangulation of Great Britain Empire Survey Review

Luder D.(1955): Aerial Photography Interpretation: Principals and Application Mc graw Hill, New York.

Mark S.Monmoni er (1982): Computer assisted geography, Prentice Hall, Englewood Cliff, New Jersey.

MaquireD.G.M.F Goodchild and D.W. Rhind (eds)(1991): geographic information system : Principals and Application Taylor& francis Washington.

Mishra R.P and Ramesh,A (1986) : Fundamentals of cartography.

Mcmillan Co.New Delhi

Mitra R.P and Ramesh : Fundamentals of Geography revised Edition, Concept Publication, New delhi

Monkhouse F.J (1971) Maps and Diagram, Methuen

Negi, Balbir Singh (1995): Practical geography third revised edition Kedarnath and Ramnath, Meerut &Delhi

Pal.S.K(1968): Statistics for Geoscientist_ Techniques and Application, Concept, New Delhi

Peuquet D.Jand D.F. Marble (1990): Introductory teaching in Geographic Information system. Taylor& Fransis Washinton

Pratt W.K. (1978): Digital Image Processing, Wiley, New York.

Rao D.P(ed)(1998): Remote Sensing for Earth Resources, Association of Exploration Geophysicist, Hyderabad.

Robinson, A.H et al (1995): Element of Cartography, John Wiley & Sons. USA

Sandover,J. A.(1961): Plane Surveying Arnold

Sarkar A.K.(1977): Practical geography: A systematic Approach. Oriental Longman, Calcutta

Singh, R.L. and Dutt P.K. (1968): Elements of Practical Geography, Students Friends, Allahabad

Star J and J Estes (1994); Geomorphic Information system: An Introduction Prentice Hall Englewood Cliff, New Jersey.

Singh and Kanojiya (1972): Map work and practical Geography central Book depot, Allahabad

Thomas M. Lilles and and Ralph W Kefer,(1994): Remote Sensing and Image Interpretation John Wiley & son, New York.

Nagtode P. M. & Lanjewar H.D. : Nakashashtra, Pimplapure Publication Nagpur.

