The Department of Geography

SEMESTER WISE COURSE STRUCTURE FOR B. A. GEOGRAPHY

Effective from Academic Session 2018 – 2019 Onwards

<u>SEMESTER – I</u>

Paper-I : Fundamentals of Geography

Unit-I

Meaning, Definition, Nature, Scope and approaches of Geography, Objectives and Relevance; Basic Concepts of Geography, Branches of Geography; Dualism in Geography.

Unit-II

The Physical Dimension in Geography: The Universe; The solar system, The Earth Movement, Latitudes, Longitudes & Time calculation.

Unit-III

The Human Dimension in Geography: Man & Environment; Society, Culture & Civilization; Population; Economic Structure.

Unit-IV

Applied Geography: Recent Trends in Geography; Modern Concepts in Geography; Study of Geography in India; Career Opportunities for Geographers.

Reading List:-

- 1. Contemporary American Geography; Routledge New Jersey. 1992.
- 2. Dikshit R.D. Geographical Thought-

A contextual History of Ideas. Prentice Hall of India Pvt. Ltd.2000.

- 3. Dohrs. F.E. and Sommers, L.W. (sds.) Introduction to Geography, Thomas Y. Crowell Co. Chica go,1959
- 4. Harvey. David: Explanation in Geography Edward-Amold, London, 1972
- 5. Holt-Jensen, A Geography: Its History and Concepts, Longmans, 1980
- 6. Husain, Majid: Evolution of Geographical Thought, Rawat Publications, Jaipur, 1984
- 7. James, P.E.: All Possible Worlds: A History of Geographical Ideas. Sachin Publication, Jaipur
- 8. Johnston, P.J. and Claval, P. (eds.): Geography Since the Second World War. Croom Helm. London/Bernes and Noble, N.J. 1984.
- 9. Jones, PA/: Fieldwork in Geography, Longmans, 1968.
- 10. Lownsburg. J.F. and Aldrich, F.T.: Introduction to Geographical Methods and Techniques, Charless Marrili, Columbus, 1979.
- 11. Matthews J.A. and Herbert D.T.; Geography: A very short introduction, oxford university press, New York, 2009.
- 12. Minshull, R: The changing Nature of Geography. Hutchinson University Library, London, 1970
- 13. Wooldridge S.W.: The Geographer as Scientist, Thomas Nelson and Sons Ltd. London. 1956.
- 14. Fundamentals of physical geography, Class XI, N.C.E.R.T, New Delhi.
- 15. A text book of Geography, Class VI to VIII, ICSE, New Delhi.

<u>SEMESTER – I</u>

Paper – II : Physical Geography

Unit-I

Physical Geography, Nature, Definition and Scope, Origin of the Earth, Branches of Physical Geography.

Unit-II

Lithosphere – Internal Structure of Earth based on Seismic Evidences, Plate Tectonics and its associated features, Fluvial cycle of Erosion – Davis and Penck.

Unit-III

Atmosphere - Composition and structure, Heat Budget, Tropical cyclones, MonsoonClimatic Classification (Koppen).

Unit-IV

Hydrosphere - Hydrological Cycle, Ocean Bottom Relief Features, Tides and Currents

- 1. Conserva H. T., 2004: Illustrated Dictionary of Physical Geography, Author House, USA.
- 2. Gabler R. E., Petersen J. F. and Trapasso, L. M., 2007: Essentials of Physical Geography (8th Edition), Thompson, Brooks/Cole, USA.
- 3. Garrett N., 2000: Advanced Geography, Oxford University Press.
- 4. Goudie, A., 1984: The Nature of the Environment: An Advanced Physical Geography, Basil Blackwell Publishers, Oxford.
- 5. Hamblin, W. K., 1995: Earth's Dynamic System, Prentice Hall, N.J.
- 6. Husain M., 2002: Fundamentals of Physical Geography, Rawat Publications, Jaipur.
- 7. Monkhouse, F. J. 2009: Principles of Physical Geography, Platinum Publishers, Kolkata.
- 8. Strahler A. N. and Strahler A. H., 2008: Modern Physical Geography, John Wiley & Sons, New York.

SEMESTER - II

Paper-I : Human Geography

Unit-I

Definition, Nature, Major Subfields, Contemporary Relevance; Approaches to the Studyof Human Geography.

Unit-II

Space and Society: Cultural Regions; Race, Religion and Language.

Unit-III

Population: Population Growth and distribution, Composition (Age, Gender andLiteracy), Demographic Transition theory.

Unit-IV

Settlements: types and Patterns of Rural Settlements; Classification of UrbanSettlements; Trends and Patterns of World Urbanization.

- 1. Chandna, R.C. (2010) Population Geography, Kalyani Publisher.
- 2. Daniel, P.A. and Hopkinson, M.F. (1989) The Geography of Settlement, Oliver & Boyd, London.
- 3. Johnston R; Gregory D, Pratt G. et al. (2008) The Dictionary of Human Geography, Blackwell Publication.
- 4. Jordan-Bychkov et al. (2006) The Human Mosaic: A Thematic Introduction to Cultural Geography. W. H. Freeman and Company, New York.
- 5. Kaushik, S.D. (2010) Manav Bhugol, Rastogi Publication, Meerut.
- 6. Maurya, S.D. (2012) Manav Bhugol, Sharda Pustak Bhawan. Allahabad.
- 7. Ghosh, S. (2015) Introduction to settlement geography. Orient Black Swan Private Ltd., Kolkata
- 8. Hussain, Majid (2012) Manav Bhugol. Rawat Publications, Jaipur

SEMESTER - II

Paper-II : General Cartography (Practical)

Unit-I

Maps – Types, Elements and Uses,

Unit-II

Map Scale – Types and Application, Reading Distance on a Map.

Unit-III

Map Projection – Criteria for Choice of Projection, Attributes and Properties of Zenithal Gnomonic Polar Case, Zenithal Stereographic Polar Case, Cylindrical Equal Area, Mercator's Projection, Conical Projection with Two Standard Parallel, Bonne's Projection.

Unit-IV

Representation of Data – Symbols, Dots, Choropleth, Isopleth and Flow Diagrams, Interpretation of Thematic Maps.

- 1. Dent B. D., 1999: Cartography: Thematic Map Design, (Vol. 1), McGraw Hill.
- 2. Gupta K. K and Tyagi V. C., 1992: Working with Maps, Survey of India, DST, New Delhi.
- 3. Mishra R. P. and Ramesh A., 1989: Fundamentals of Cartography, Concept Publishing.
- 4. Robinson A., 1953: Elements of Cartography, John Wiley.
- 5. Sharma J. P., 2010: Prayogic Bhugol, Rastogi Publishers.
- 6. Singh R. L. and Singh R. P. B., 1999: Elements of Practical Geography, Kalyani Publishers.
- 7. Singh R. L., 1998: Prayogic Bhoogol Rooprekha, Kalyani Publications.
- 8. Steers J. A., 1965: An Introduction to the Study of Map Projections, University of London.

SEMESTER - III

Paper-I : Resource Geography

UNIT-I

Meaning and nature of Resource Geography, components of resources, Environment Resources and environment interface.

UNIT-II

Classification of resource renewable and non-renewable; biotic (forests, wildlife. Live- stock, fisheries agricultural crops) and biotic (land, Water, mineral)

UNIT-III

Distribution and utilization of water; minerals and energy resources their economic and environmental significance and conservation. Types and distribution of forests, Fisheries their economic and Environmental significance and conservation.

UNIT-IV

Major soil types and their distribution; problems of soil erosion and soil Conservation, Utilization of Soil Resources.

- 1. Agarwal, et. al; The Citizen's Fifth Report, Centre for Science & environmental New Delhi, 1999.
- 2. Alexander, John, W. Economics Geography, Prentice Hall of India Ltd. New Delhi, 1988.
- 3. Ajlen, J. L.; Students Atlas of Environmental issues duskin Publication, 1997.
- 4. Brown, L. R. in the Human Interest, East-West press New Delhi, 1976.
- 5. Chandna, R. C.; A Geoggraphy of Population; Concepts, Determinants and patterns, Kalvani Publishers, New Delhi, 1986.
- 6. Cutter, L. Renwick, H. L. Exploitation, conservation and preservation A Geographical Perspective and Natural Resources Use, Rowman and Allaheld Totowa, N. J. 1985.
- 7. Global Environment Outlook, Earth London, 2000.
- 8. Haggest Peter Geography A Modern Sythesis, Harper & Row Publishers, New York, 1975.
- 9. Janaki, V A Economics Geography. Concept Publishing Co. New Delhi, 1985.
- 10. Liong G.C. and Nmorgen, G.C; Human & Economics Geography oxford University press.London, 1982.
- 11. Reid, D. Sustainable Development, Earthscan pub. London, 1995.
- 12. Sharma, H. S. Ravine Erosion in India Concept New Delhi, 1980.
- 13. Sharma, R. S. and Chattopadhyaya, S K sustainable Developments Concepts and issues; concepts. New Delhi, 2000.
- 14. Simmons. I. G.; The Ecology of Natural Resources Edwards Arnold London, 1974.
- 15. UNESCO: Use and Conservation of the Biosphere Paris, 1970.
- 16. Zelinsky W.; A Prologue to Population Geography, prentice Hall, Inc. Englewood Cliffs. N.J, 1966.

SEMESTER - III

Paper-II : Regional Planning and Development

UNIT-I

Concept, Need and Types of Regional Planning. Characteristics and Delineation of Planning Regions.

UNIT-II

Regionalization of India for Planning (Agro Ecological Zones)

UNIT-III

Models for Regional Planning; Growth Pole Theory; Core Periphery Model and GrowthFoci Concept in Indian Context.

UNIT-IV

Backward Regions and Regional Plans – Special Area Development Plans in India;DVC-The Success Story and the Failures; NITI Aayog.

- 1. Blij H. J. De, 1971: Geography: Regions and Concepts, John Wiley and Sons.
- 2. Claval P.l, 1998: An Introduction to Regional Geography, Blackwell Publishers, Oxford and Massachusetts.
- 3. Friedmann J. and Alonso W. (1975): Regional Policy Readings in Theory and Applications, MIT Press, Massachusetts.
- 4. Gore C. G., 1984: Regions in Question: Space, Development Theory and Regional Policy, Methuen, London.
- 5. Gore C. G., Köhler G., Reich U-P. and Ziesemer T., 1996: Questioning Development; Essays on the Theory, Policies and Practice of Development Intervention, Metropolis-Verlag, Marburg.
- 6. Haynes J., 2008: Development Studies, Polity Short Introduction Series.
- 7. Johnson E. A. J., 1970: The Organization of Space in Developing Countries, MIT Press, Massachusetts.
- 8. Peet R., 1999: Theories of Development, The Guilford Press, New York.
- 9. UNDP 2001-04: Human Development Report, Oxford University Press.
- 10. World Bank 2001-05: World Development Report, Oxford University Press, New

SEMESTER - IV

Paper - I : Environmental Geography

UNIT-I

Environmental Geography; Concepts and Approaches; Ecosystem – Concept and Structure; Ecosystem Functions.

UNIT-II

Human – Environmental Relationship in Equatorial, Desert, Mountain and CoastalRegions.

UNIT-III

Environmental Problems and Management; Air Pollution; Biodiversity Loss; Solid andLiquid Waste.

UNIT-IV

Environmental Programmes and Policies: Developed Countries; Developing Countries; New Environmental Policy in India; Government Initiatives.

- 1. Casper J.K. (2010) Changing Ecosystems: Effects of Global Warming. Infobase Pub. New York.
- 2. Hudson, T. (2011) Living with Earth: An Introduction to Environmental Geology, PHI Learning Private Limited, New Delhi.
- 3. Miller, G.T. (2007) Living in the Environment: Principles, Connections, and Solutions, Brooks/ Cole Cengage Learning, Belmont.
- 4. Singh, R.B. (1993) Environmental Geography, Heritage Publishers, New Delhi.
- 5. UNEP (2007) Global Environment Outlook: GEO4: Environment For Development, United Nations Environment Programme. University Press, Cambridge.
- 6. Wright R. T. and Boorse, D. F. (2010) Toward a Sustainable Future, PHI Learning Pvt Ltd, New Delhi.
- 7. Singh, R.B. and Hietala, R. (Eds.) (2014) Livelihood security in Northwestern Himalaya: Case studies from changing socio-economic environments in Himachal Pradesh, India. Advances in Geographical and Environmental Studies, Springer
- 8. Singh, Savindra 2001. Paryavaran Bhugol, Prayag Pustak Bhawan, Allahabad. (in Hindi)

SEMESTER - IV

Paper-II : Remote Sensing and GPS based Project Report (Practical)

UNIT-I

Remote Sensing: Definition, Development, Platforms and Types.

UNIT-II

Aerial Photography: Principles, Types and Geometry.

UNIT-III

Satellite Remote Sensing: Principles, EMR Interaction with Atmosphere and EarthSurface; Satellites (Landsat and IRS) and Sensors.

UNIT-IV

Interpretation and Application of Remote Sensing : Land use/Land Cover; GlobalPositioning System (GPS) – Principles and Uses.

Practical Record : A project file consisting of five exercises will be done from aerialphotos, satellite images (Scale, orientation and interpretation) and GPS field survey.

- 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. Singh R. B. and Murai S., 1998: Space-informatics for Sustainable Development, Oxford and IBH Pub.
- 7. Wolf P. R. and Dewitt B. A., 2000: Elements of Photogrammetry: With Applications in GIS,McGraw-Hill.

SEMESTER - V

Paper - I : Geography of India

UNIT-I

Physical Setting – Location, Structure and Relief, Drainage, Climate; Population – Sizeand Growth since 1901, Population Distribution, Literacy, Sex Ratio.

UNIT-II

Settlement System – Rural Settlement Types and Patterns; Urban Pattern.

UNIT-III

Resource Base – Livestock (Cattle and Fisheries), Power (Coal and hydroelectricity), Minerals (iron ore and Bauxite)

UNIT-IV

Economy – Agriculture (Rice, Wheat, Sugarcane, Cotton), Industries (Cotton Textile, Iron and Steel, Automobile), Transportation Modes (Road and Rail)

- 1. Hussain M., 1992: Geography of India, Tata McGraw Hill Education.
- 2. Mamoria C. B., 1980: Economic and Commercial Geography of India, Shiva Lal Agarwala.
- 3. Miller F. P., Vandome A. F. and McBrewster J., 2009: Geography of India: Indo-Gangetic Plain, Thar Desert, Major Rivers of India, Climate of India, Geology of India, Alphascript Publishing.
- 4. Nag P. and Sengupta S., 1992: Geography of India, Concept Publishing.
- 5. Pichamuthu C. S., 1967: Physical Geography of India, National Book Trust.
- 6. Sharma T. C. and Coutinho O., 1997: Economic and Commercial Geography of India, Vikas Publishing.
- 7. Singh Gopal, 1976: A Geography of India, Atma Ram.
- 8. Spate O. H. K. and Learmonth A. T. A., 1967: India and Pakistan: A General and Regional Geography, Methuen.
- 9. Rana, Tejbir Singh, 2015, Diversity of India, R.K. Books, Delhi.

SEMESTER - V

Paper - II : Political Geography

UNIT-I

Nature and scope of political geography; political geography and geopolitics; Approachesto the study of political geography; morphological, functional and unified field theory.

UNIT-II

State as a politico – territorial phenomenon; Changing nature of location, size and shapein political geography of states.

UNIT-III

Global strategic views of Mackinder, Spykman; Seversky, and Mahan and their relevanceto contemporary world situation.

UNIT-IV

Underdevelopment and international policies, the North-south dialogues: SAARC and ASEAN in the new International Economic order.

- 1. Bhagwati, J. N. (ed.).; New International Economics Order The North-South Debagte. M.I.T. Press, London, 1976.
 - 2. Dikshit, R. D.; Political Geography, A Contemporary Tata Mcgraw-Hill Publishing Co. NewDelhi, 1982 (also latest edition)
 - 3. Dikshit S K; Rajnitik Bhoogol Viswvidyalaya Publication Varansi, 2010.
 - 4. Glassner. M.I. Political Geography, John Wiley, New York, 1993.
 - 5. Pankkar, K M Geographical factors in India History. Bharatiya Vidyabhavan, Bombay,1956.
 - 6. Pounds, N. T.; Political Geography Mcgraw Hill, New York, 1972.
 - 7. Prescott. J. R: Political Geography Mcgraw Hill, New York, 1972.
 - 8. Schwartzberg Je: A Historical Atlas of South Asia, University of Chicago press. U.S.A.1993.
 - 9. Short, J. R.; An Introduction to political Geography; Routlege and Kegan Paul, Londan, 1982
 - 10. Taylor. P. J. (ed.) Political Geography of the 20the Century A Global Analysis, New York, 1993.
 - 11. Taylor, Peter; Political Geography, Longman, London, 1985. Analysis. New York, 1993.
 - 12. William C. H (ed.) Political Geography of the New World order Halsted Ben, New York, 1993.

SEMESTER - V

Paper-III : Urban Geography

Unit-I

Urban Geography: Meaning, Nature & Scope, Patterns of Urbanization in Developedand Developing Countries.

Unit-II

Functional Classification of Cities: Quantitative and Qualitative Methods, UrbanInfluences: Umland and Rural – Urban Fringe.

Unit-III

Study of Regional Urban Patterns; Central Place Theory of Christaller & Losch, GrowthPole Theory of Perroux, Metropolitan City and Primate City.

Unit-IV

Contemporary Urban Issues; Urban Poverty; Housing; Slums, Master Plan : A case studyof Lucknow.

- 1. Alam, S.M.: Hyderabad Secunderabad Town in Cities Asia Publishing House, Bombay, 1964.
- 2. Berry, B.J.L. and Horton F.F. Geographic Perspectives on Urban Systems, Prentice Hall, EnglewoodClitts, New Jersey, 1970.
- 3. Carter; The Study of Urban Geography, Edward Arnold Publishers, London, 1972.
- 4. Dickinson, R.E.; City and Region, Routledge, London, 1964.
- 5. Dwyer, D.J.(ed.); The City as a Centre of Change in Asia, University of Hong Kong Press, Hongkong. 1971.
- 6. Gibbs, J.P.; Urban Research Methods D.Van Nostrand Co. Inc. Princeton, New Jersey, 1961.
- 7. Hall P; Urban and Regional Planning, Roultledge, London, 1992.
- 8. Houser, Philip M and Schnore Leo F. (ed.): The Study of Urbanization, Wiley, New York, 1965.
- 9. James, P. E. and Jones, C.F. (eds.); American Geography, Inventory and Prospect, SyracuseUniversity Press, Syracuse, 1954.
- 10. Mayer, H.M. Kohn, C.F. (eds.); Readings in Urban Geography, University of Chicago Press, Chicago.
- 11. Mumford, 1.; Culture of Cities, McMillan & Co., London, 1958.
- 12. Nangia, Sudesh: Delhi Metropolitan Region: A Study in Settlement Geography, Rajesh Publication, 1976.
- 13. Nangia, Sudesh; Delhi Metropolitan Region : A Study in Settlement Geography, Rajesh Publication, 1976.
- 14. Ram Chandran, R. Urbanization and Urban System in India, New Delhi, Oxford Publication, 1988.
- 15. Singh, R. B.;(ed.) Urban Sustainable in the context of Global Change, Oxford & IBN Pub.New Delhi, 2000.

SEMESTER - VI

Paper - I : Disaster Management

Unit-I

Hazards, Risk, Vulnerability and Disaster; Definition and Concepts; Disasters in India : (a) Causes, Impact, Distribution and Mapping; Flood Landslide, Drought.

Unit-II

Disasters in India: (b) Causes, Impact, Distribution and Mapping, Earthquake, Tsunami and Cyclone.

Unit-III

Human induced Disaster; Causes, Impact, Distribution and Mapping

Unit-IV

Response and Mitigation to Disaster; Mitigation and preparedness, NDMA and NIDM; Indigenous Knowledge and Community-Based Disaster Management; Do's and Don'ts During Disasters.

- 1. Government of India. (1997) Vulnerability Atlas of India. New Delhi, Building Materials & Technology Promotion Council, Ministry of Urban Development, Government of India.
- 2. Kapur, A. (2010) Vulnerable India: A Geographical Study of Disasters, Sage Publication, New Delhi.
- 3. Modh, S. (2010) Managing Natural Disaster: Hydrological, Marine and Geological Disasters, Macmillan, Delhi.
- 4. Singh, R.B. (2005) Risk Assessment and Vulnerability Analysis, IGNOU, New Delhi. Chapter 1, 2 and 3
- 5. Singh, R. B. (ed.), (2006) Natural Hazards and Disaster Management: Vulnerability and Mitigation, Rawat Publications, New Delhi.
- 6. Sinha, A. (2001). Disaster Management: Lessons Drawn and Strategies for Future, New United Press, New Delhi.
- 7. Stoltman, J.P. et al. (2004) International Perspectives on Natural Disasters, Kluwer Academic Publications. Dordrecht.
- 8. Singh Jagbir (2007) "Disaster Management Future Challenges and Opportunities", 2007. Publisher- I.K. International Pvt. Ltd. S-25, Green Park Extension, Uphaar Cinema Market, New Delhi, India (www.ikbooks.com).

SEMESTER - VI

Paper - II : Geography of Tourism

UNIT- I

Concepts, Nature and Scope; Inter-Relationships of Tourism, Geographical Parameters of Tourism by Robinson. Types of Tourism: Natural Tourism, Cultural Tourism, Medical Tourism, Pilgrimage

UNIT- II

Recent Trends of Tourism: International and Regional; Domestic (India); Eco Tourism, Sustainable Tourism, Meetings, Incentives, Conventions and Exhibitions (MICE)

UNIT - III

Impact of Tourism: Economy; Environment; Society.

UNIT - IV

Tourism in India: Tourism Infrastructure; Case Studies of Himalaya, Desert and Coastal and Heritage; National Tourism Policy

- 1. Dhar, P.N. (2006) International Tourism: Emerging Challenges and Future Prospects. Kanishka, New Delhi.
- 2. Hall, M. and Stephen, P. (2006) Geography of Tourism and Recreation–Environment, Place and Space, Routledge, London.
- 3. Kamra, K. K. and Chand, M. (2007) Basics of Tourism: Theory, Operation and Practise, Kanishka Publishers, Pune.
- 4. Page, S. J. (2011) Tourism Management: An Introduction, ButterworthHeinemann- USA. Chapter 2.
- 5. Raj, R. and Nigel, D. (2007) Morpeth Religious Tourism and Pilgrimage Festivals Management: An International perspective by, CABI, Cambridge, USA, www.cabi.org.
- 6. Tourism Recreation and Research Journal, Center for Tourism Research and Development, Lucknow
- 7. Singh Jagbir (2014) "Eco-Tourism" Published by I.K. International Pvt. Ltd. S-25, GreenPark Extension, Uphaar Cinema Market, New Delhi, India (www.ikbooks.com).

SEMESTER - VI

Paper-III: Surveying and Survey based Project Report / Field Trip and Report Writing(Practical)

UNIT-I

Instrumental Surveying; Meaning, classification and significance, Introduction to (i) Chain and tape (ii) Indian Clinometer and (iii) Dumpy Level. Prismatic Compass and Plane Table, Surveying(Three Point problem).

UNIT-II

Socio-economic survey / Field trip and report writing

Socio-economic survey: Selection of Area, Objectives, Methodology, Questionnaire, Data Collection, Entry and Tabulation and its interpretation.

Field Trip:

Mountain / Desert / Plateau / Costal Region or any local geographical area in unavoidable circumstances,

Designing the field report: Aims and Objectives, Methodology, Analysis, Interpretation andwriting the report based on field observations, photographs, sketch etc.

- 1. Davis, R.E. and Foote, F.S. (1953): Surveying, 4th edition, McGraw Hill Publication, NewYork.
- 2. Jones, P.A. (1968): Fieldwork in Geography, Longmans, Green and Company Ltd. FirstPublication, London.
- 3. Kanetker, T. P. and Kulkarni, S. V.(1967); Surveying and Levelling, Vol-I and II V.G.Prakashan, Poona.
- 4. Natrajan, V. (1976); Advances Surveying, B.I Publication, Mumbai.
- 5. Pugh, J.C. (1975): Surveying for field Scientists, Methuen and Company Ltd. London, FirstPublication.
- 6. Punmia, B.C. (1994): Surveying, Vol. I, Laxmi Publication Private Ltd., New Delhi.
- 7. Shephard, F. A. (1968): Surveying Problems and Solutions, Edward Arnold (Publishers)Ltd. London.
- 8. Singh, R. L. and Singh, Rana P.B. (1993): Elements of Practical Geography. (Hindi and English editions), Kalyani Publishers, Ludhiana and New Delhi.
- 9. Venkatramaiah, C. (1997): A Text Book of Surveying, Universities Press, Hyderabad.