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Muhammad Mohsin



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First Edition

ILMI

INTRODUCTION

**TO THE
FUNDAMENTALS
OF
GEOGRAPHY**

For the students:

BS (4-Years) / M.Sc Geography's Foundation 1:
Fundamentals of Geography, ADP, CSS,
PMS, PPSC / FPSC Lectureship, Subject
Specialist, Assistant Professors and various
Competitive Examinations, GRE, GAT, DAT,
HAT and other Entry Test

Muhammad Mohsin

M. Phil. (IUB), M.Ed. (AIOU)

Assistant Professor,

Department of Geography,

Govt. Sadiq Egerton College, Bahawalpur



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by Muhammad Mohsin

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Dedicated
To my
Beloved Parents
(Late)

Preface

Geography is a very diverse field of science. This book 'Introduction to the Fundamentals of Geography' is the output of more than three and half years and accomplished by the grace of Allah almighty. This is the brief discourse of Geography's history, basic concepts, main physical and environmental elements. I have faced lot of hurdles and difficulties in the course of this work as twice the whole manuscript of the book had been corrupted by virus. But my objective and enthusiasm once again insisted and inspired me to resume this tedious task again. The main objective of this book is to provide a handbook for the students of BS-4 Years course work 'Fundamentals of Geography' being taught in universities and postgraduate colleges and as per the recommended syllabus from HEC as well as it covered many topics of Foundation II 'Physical Geography'. Simultaneously, it would also be proved a useful key source for other BS Geography courses, general readers, other competitive examinations (CSS, PMS, Lectureship, Subject Specialist, Assistant Professor of Geography etc.) and preparing of various entry examinations. The salient features of this edition are:

1. Easy to read and comprehend the main concepts of General Geography, Geographic History, Geographic Techniques, Physical and Human Geography.
2. Simple and to the point way of expression with ease language.
3. Short and long review questions at the end of every chapter.
4. Images, diagrams and illustrations of various concepts and land features.
5. Concise description of more than 80 major geographic theories, concepts, laws and rules.
6. A rich glossary of main terms.
7. For further reading, useful World Wide Web sources and Textual Bibliography is enlisted.

Last but not least, during the writing/ compiling of this book, many books, articles and websites were studied and proper citations made. A lot of care has been taken during write up of this book yet any omission or error observed is accepted and your opinions/ queries are highly welcomed.

Muhammad Mohsin

Bahawalpur,

15 January, 2021

mohsinshahzad10@yahoo.com

**Syllabus Outlines of Foundation 1: Fundamentals of Geography by HEC 2009
and 2013 for BS (4 Years) Geography**

Syllabus Outline 2009

Foundation-I GEOG 101 Fundamentals of Geography

Objectives:

To create awareness about Geography and Geographical knowledge

Course outline

- ◆ Introduction & Definitions of Geography
 - Themes of Geography
 - Roots of the discipline & basic geographic concepts
 - The evolution of geography from ancient to modern period
 - Branches of Geography and its relations with other disciplines.
- ◆ The universe
 - Galaxies and Solar system
 - Origin of the Earth,
- ◆ Earth as a planet and celestial positions its Shape and size.
 - Rotation and revolution and related phenomena
 - Earths' Satellite Moon
 - Lunar and solar Eclipses
- ◆ Positions on Map and Globe,
 - Geographical coordinates and its characteristics,
 - World time zones standard and local time
- ◆ Geological time scale,
 - Internal Structure of the Earth & Rocks.
 - Distribution of land and water,
 - Major Landforms (Mountain, Plateau and Plain)
- ◆ Atmospheric Structure and Composition,
 - Elements of Weather and climate.
- ◆ Ocean and its Configuration
 - Movement of Oceans
 - Biomes

Lab work outline

Comprehension of atlases, maps, location of places features and relevant work related to topics of the theoretical section.

Books Recommended

- Christopherson, R.W. (2000), Geo-systems, Prentice-Hall, Inc, USA.
- De Blij, H. J and Muller, P.O. (1996), Physical Geography of the global Environment, USA, John Wiley and Sons Inc.
- Diwan A.P. & D.K. Arora (1995), Origin of the Ocean, Anmol Publisher, Delhi.
- Gabler, R.E, Sager, R.J and Wise, D.L. (1997), Essentials of Physical Geography, Saunders College Publishing, New York.
- Kendrew, (1961), Climates of the continents, Longman London/New York
- King, CAM (1980), Physical Geography, Oxford, Basil Blackwell
- McIlveen, J.F.R. (1992), Fundamentals of Weather and climate, Prentice Hall New Jersey
- Miller, E.W. (1985), Physical Geography, Columbus, Charles E. Merrill
- Miller, G.T. (1996), Living in the Environment, Principles, connections and solutions, Wadsworth
- Monkhouse, F.J. (1996), Principles of Physical Geography, Hodder & Stoughton, London
- Rathor, A. Hamid (1996), Tabhi Geographia, Islamabad Muqtadra Qaumi Zaban
- Scott, R.C. (1996), Introduction to physical geography, West Publishing Co, New York. I
- Small, R. J. (1989), Geomorphology and Hydrology, London, Longman.
- Strahler, A.N., Strahler, A.H. (2004), Physical Environment, John Wiley,. New York
- Stringer, E.T. (2004), Modern Physical Geography, New York: John Wiley.
- Taylor, J. (1993), Integral Physical Geography, London Longman
- Thompson, R.D. et. Al. (1986), Process in Physical Geography, London, Longman.
- Thornbury, W.D. (1969), Principles of Geomorphology, John Willy & Sons. New York.
- Thurman, H.V. & Mexrill (1996), Essentials of Oceanography, Menson, London
- Shepherd (latest edition) Oceanography
- Pakistan Geographical Review (Lahore)
- Pakistan Journal of Geography (Peshawar)
- Journal Geography (Karachi)
- HEC Digital Library

Syllabus Outline 2013

Foundation-I GEOG 101 Fundamentals of Geography

Objective:

To expose students with the founding principles of Geography and geographical knowledge.

Course outline:

- ◆ Introduction
 - Definitions, scope and branches of Geography
 - Roots of the discipline and basic geographic concepts
 - Themes and traditions of Geography
 - Tools of Geography
- ◆ The Universe
 - Galaxies and solar system
- ◆ The Earth as a planet
 - Celestial positions, its shape and size
 - Rotation, revolution and related phenomena
- ◆ Spheres of the earth
 - Lithosphere
 - Atmosphere
 - Hydrosphere
 - Biosphere
- ◆ Man-environment interaction
 - Population
 - Major Economic activities
 - Settlements
 - Pollution

Lab. work:

Comprehension of atlases, map reading skills, location of places, features and relevant work related to topics of the theoretical section.

Recommended Books:

Arbogast, A. F. (2007) Discovering Physical Geography, John Wiley and Sons, London.
Christopherson, R. W. (2009) Geo systems: An introduction to Physical Geography, Pearson Prentice Hall, New Jersey.
De Blij, H. J and Muller, P. O. (1996) Physical Geography of the Global Environment, USA, John Wiley and sons Inc., New Jersey.
Guinness, J. P. & Nagle, G. (2011) Geography, Hodder Education, London.
King, C. (1980) Physical Geography, Basil Blackwell, Oxford.
Miller, G. T. (2008) Living in the Environment, Principles, connections and Solutions, Wadsworth, USA.

- Monkhouse, F. J. (1996) *Principles of Physical Geography*, Hodder & Stoughton, London.
- Scott, R. C. (1996) *Introduction to physical geography*, West Publishing Co, New York.
- Small, R. J. (1989) *Geomorphology and Hydrology*, Longman, London.
- Strahler, A. (2013) *Introduction to Physical Geography*, John Wiley & Sons, New Jersey.
- Stringer, E. T. (2004) *Modern Physical Geography*, John Wiley, New York.
- Taylor, J. (1993) *Integral Physical Geography*, Longman, London.
- Thompson, R. D. (1986) *Process in Physical Geography*, Longman, London.
- Thornbury, W. D. (2004) *Principles of Geomorphology*, John Willy & Sons, New York.
- Thurman, H. V. & Trujillo, A. P. (2013) *Essentials of Oceanography*, Prentice Hall Inc., USA.

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Appendix-A

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g/m ³	grams per cubic meter
g/kg	grams per kilo grams
lb	Pound
psi	per square inch
lb/in ²	pounds per square inch
mb	millibars
cm ²	square centimeter
km ²	square kilometer
mi ²	square mile
km/hr	kilometer per hour
m/h	mile per hour
W/m ²	Watts per square meter
ha	hectares
µg/m ³	milligrams per cubic meters
ppb	parts per billion
ppm	parts per million
ppt	parts per thousand
pph	parts per hundred
mm	millimeters
cm ² /min	square centimeter per minute
hr	hour
sec	second

Appendix-B**Acronyms/ Abbreviations**

i.e.	(Latin) 'id est' means 'that is'
e.g.	(Latin) 'exempli gratia' means 'for example'
n.d	No Date/ Date is unknown
2D	Two Dimensional
3D	Three Dimensional
AAG	American Association of Geographers
AAG	American Geographical Society (AGS)
ALOS	Advanced Land Observation Satellite
AQI	Air Quality Index
BIPM	The International Bureau of Weights and Measures
BWMC	Bahawalpur Waste Management Company
CBD	Central Business District
CBR	Crude Birth Rate
CCD	Central Commercial District
CDR	Crude Death Rate
CIA	Central Intelligence Agency
DART	Deep-ocean Assessment and Reporting of Tsunami
EOLSS	Encyclopedia of Life Support Systems
EPA	Environmental Protection Agency
ESAs	Environmental Sensitive Areas
ETM	Enhanced Thematic Mapper
GA	Geographical Association
GDP	Gross Domestic Product
GIS	Geographic Information System
GMT	Greenwich Mean Time
GNP/ GNI	Gross National Product/ Gross National Income
GPS	Global Positioning System
GOES	Geostationary Operational Environmental Satellite
IAU	International Astronomical Union
IPCC	Inter-governmental Panel on Climate Change
ITCZ	Inter-tropical Convergence Zone
IRS	Indian Remote Sensing
IWM	Integrated Waste Management
	Landsat Land Satellite
LCL	Lifting Condensation Level
LCL	Least Cost Location

LDCs	Less Developed Countries
LEDC	Less Economically Developed Country
LEO	Low Earth Orbits
Lidar	Light detection and ranging
LPG	Liquefied Petroleum Gas
MDCs	More/ Most Developed Countries
Mt.	Mount
MSS	Multispectral Scanners
NASA	National Aeronautics and Space Administration
NCGE	National Council for Geographic Education
NEPA	National Environmental Policy Act
NGS	National Geographic Society
NI	Natural Increase
NLR	Normal Lapse Rate
NOAA	The National Oceanic and Atmospheric Administration
PCBs	Polychlorinated biphenyls
PMD	Pakistan Meteorological Department
Radar	Radio detection and ranging
RGS	Royal Geographical Society
RNA	Ribonucleic Acid
RS	Remote Sensing
SARS	Severe Acute Respiratory Syndrome
SPOT	Système Pour l'Observation de la Terre
SRS	Satellite Remote Sensing
TFR	Total Fertility Rate
TIROS-1	Television and Infrared Observation Satellite-1
TM	Thematic Mapper
UTC	Universal Time Coordinated or Coordinated Universal Time
UN	United Nations
UNESCO	United Nations Economic
UNDP	United Nations Development Programme
WHO	World Health Organization
ZPG	Zero Population Growth
ZWS	Zero Waste Strategy

Glossary

Abiotic: A term meaning ‘without life’, commonly used to describe some components of an ecosystem. Examples of abiotic factors include climate, geology and mineral matter in soils.

Ablation: The process by which ice and snow are lost from a glacier. It includes; (i) surface, internal and basal melting (ii) sublimation and (iii) calving of icebergs or smaller ice blocks.

Absolute Humidity: The amount of water vapour contained within a unit volume of air, commonly expressed in grams per cubic meters (gm^3). Absolute humidity is highest near the Equator, and least over the poles.

Absolute Location: The exact position of an object or place stated in spatial coordinates of a grid system (latitudes and longitudes) designed for the location purposes.

Abyssal Plain: The broad, deep plain on either side of the mid-oceanic ridge lie in the abyssal zone.

Acid Rain: Rain polluted by human-produced chemicals in the atmosphere, such as nitrogen and sulphur compounds, in addition to the normal carbon dioxide content of the rain.

Adiabatic Process: The temperature changes with rising or descending air. Normally it expands and cools by rising and compressing and heating by descending. Atmosphere gets heated by descending the air through compression. It is called adiabatic process.

Adiabatic Lapse Rate (ALR): The rate of change of temperature by an ascending or descending airmass. The expansion causes the parcel of air to cool and compression causes the temperature within the parcel of air to increase.

Aerial Photograph: A photograph taken from above the ground through an air craft. There are two types of aerial photograph, a vertical photograph and an oblique photograph.

Aerosols: The small solid particles or droplets present in the air and also serve as condensation nuclei for cloud formation are called Aerosols.

Air Mass: An Air Mass is a large body of air with similar temperature and humidity characteristics throughout.

Air Pollutant: The gaseous or liquid tiny particles present in the air that are generated through human activity and threatens living organism and environment are called Air Pollutant.

Accessibility: The ease with which one location may be reached from another or it is that quality possessed by a place as a result of its particular location within a Transport Network.

Albedo: The share or proportion of the solar radiation or insolation that is reflected back by a surface is called its Albedo.

Atmosphere: It is a gaseous envelope surrounding the earth and held in place by the planet's gravitational attraction.

Asthenosphere: A less rigid layer of the upper Mantle that is assumed down to lies 70 km to 250 km. It is the main source of magma that is erupted during volcanic eruption.

Atoll: A low island found in the tropical oceans consisting of coral reefs surrounding a central depression.

Bibliography

- Ackerman, E.A. (1958). *Geography as a Fundamental Research Discipline*. Chicago: University of Chicago Press.
- Alonso, W. (1960). A Theory of the Urban Land Market. *Papers and Proceedings of the Regional Science Association*, 6(1), 149-157.
- Alonso, W. (1964a). *Location and Land Use: Toward a General Theory of Land Rent*. Cambridge, MA: Harvard University Press.
- Anderson, D.L. (1989). *Theory of the Earth*. Blackwell Scientific Publications.
- Anwar, M.M. (2000). *Modern Physical Geography (Revised Edition)*. White Rose Publishers and Book Sellers, Urdu Bazar, Lahore, Punjab, Pakistan.
- Baker, R.G.V. (2009). Modelling Geographical Systems and Prediction. In: Maria Sala (Ed.) *In: GEOGRAPHY – Vol. II, UNESCO Encyclopedia of Life Support Systems (EOLSS)*.
- Basheer, S.N., Peeran, S.W. (2020). COVID-19 A Brief Overview. *Dentistry and Medical Research*, 8, 1-3.
- Bashir, I. (2014). *Human, Economic & Regional Geography (3rd Ed.)*. Lahore, Pakistan: Jahangir Books.
- Batty, M. (1992). The Fractal Nature of Geography. *Geographical Magazine*, 64(5), 34-36.
- Bukhari, I.A., Ahmad, S. (2000). *A Historical Description of Geography*. Iqbal Publishers, Sadar Bazar, Toba Tek Singh, Punjab, Pakistan.
- Boehm, R.G. (1996). *Careers in Geography*. Washington, D.C., USA: National Geographic Society (NGS), 1996. Previously published by Peterson's Guides, Inc.
- Boehm, R.G. (2003). *Building Geography Skills for Life: Student Text-Workbook*. Glencoe McGraw-Hill Inc.
- Borchert, J.R. (1967). American Metropolitan Evolution. *Geographical Review*, 57, 301-332.
- Botkin, D.B. Keller, E.A. (2011). *Environmental Science: Earth as a Living Planet (8th Edition)*. Hoboken, NJ, USA: John Wiley & Sons, Inc.
- Bowman, I. (1934). *Geography and the Social Sciences*. New York; Chicago: C. Scribner.
- Brick, B. (2018) What Tools Are Used in Geography? Available from: <https://sciencing.com/fundamentals-of-geology/> (26 Mar. 2020).
- Brunet, R. (2001). Models in Geography: A Sense to Research. *Cybergeo : European Journal of Geography*, Vol. II. Available from: <http://journals.openedition.org/cybergeo/4288> DOI: 10.4000/cybergeo.4288 (23 Apr. 2020).
- Buchanan, R.O. (1983). *An Illustrated Dictionary of Geography*. Singapore: FEP International.
- Burgess, E.W. (1967 [1925]). The Growth of the City: An Introduction to a Research Project. In: R. Park, E.W. Burgess and R. McKenzie (Eds.), *The City*. Chicago: The University of Chicago Press, pp. 47-62.
- Carey, H.C. (1858). *Principles of Social Science*. Philadelphia: J.B. Lippincott.

- Chaudhry, M.I.A.. (2017). Graduate Geography (Physical & Human). Ilmi Kitab Khana, Kabir Street, Urdu Bazar, Lahore, Punjab, Pakistan.
- Christaller, W. (1933). Die zentralen Orte in Süddeutschland. Jena: G. Fischer. Translated by C.W. Baskin as Central Places in Southern Germany. Englewood Cliffs, NJ: Prentice-Hall, 1966.
- Christopherson, R.W. (2012). Geosystems: An Introduction to Physical Geography (8th Edition). New Jersey: Pearson Prentice Hall.
- CIA. (2020). World Factbook. The World Factbook, Central Intelligence Agency (CIA). Available from: https://www.cia.gov/library/publications/the-world-factbook/geos/print_xx.html (28 Nov. 2020).
- Collier, S. (2020). What Can You Do With a Geography Degree? Available from: <https://www.topuniversities.com/student-info/careers-advice/what-can-you-do-geography-degree> (28 Apr. 2020).
- Daly, R.A. (1915). The Glacial-Control Theory of Coral Reefs. Proceedings of the American Academy of Arts and Sciences, 51(4), 157-251.
- Davis, W.M. (1909). Geographical Essays. Boston: Ginn.
- Dempsey, C. (2012). GIS Learning: Basic Geographic Concepts. Available from: <https://www.gislounge.com/basic-geographic-concepts> (12 Mar. 2017).
- Dempsey, C. (2012). Who Coined the Phrase Geographic Information System? Available from: <https://www.gislounge.com/phrase-geographic-information-systems/> (1 Mar. 2020).
- Febvre, L. (1932). A Geographical Introduction to History. London: Kegan Paul, Trench, Trubner (originally published in 1922 as *La Terre et l'Evolution Humaine*).
- Fenneman, N.M. (1919). The Circumference of Geography. Annals of the Association of American Geographers, 9, 3-11.
- Gabler, R.E., Petersen, J.F., Trapasso, L.M. (2007). Essentials of Physical Geography (8th Edition). Belmont, CA, USA: Thomson Brooks/Cole.
- Garreau, J. (1991). Edge City: Life on the New Frontier. New York: Doubleday.
- Gerber, R. (2009). Geographical Education. In: Maria Sala (Ed.) In: GEOGRAPHY – Vol. I, UNESCO Encyclopaedia of Life Support Systems (EOLSS).
- Getis, A., Bjelland, M.D., Getis, V. (2014). Introduction to Geography (14th Edition). New York: McGraw-Hill Education.
- Gollidge, R.G. (1996). Geographical Theories. Oxford: Blackwell Publishers.
- Gottmann, J. (1964). Megalopolis: The Urbanized Northeastern Seaboard of the United States. Cambridge, MA: The MIT Press.
- Gregory, D., Johnston, R., Pratt, G., Watts, M.J., Whatmore, S. (2009). The Dictionary of Human Geography (5th Ed.). Chichester, West Sussex, United Kingdom: Wiley-Blackwell.
- Gupta, A.D., Kapoor, A.N. (1996). Principles of Physical Geography. Urdu Bazar, Lahore: New Kitab Mahal.
- Haggett, P. (1965). Locational Analysis in Human Geography (1st Ed.). Arnold.
- Haggett, P. (1979). Geography A Modern Synthesis. New York, USA: Harper International.

- Hägerstrand, T. (1965). A Monte Carlo Approach to Diffusion. *Archives Européennes de Sociologie*, 6(1), 43-67.
- Harris, C.D., Ullman, E.L. (1945). The Nature of Cities. *Annals of the American Academy of Political and Social Science*, 242, 7-17.
- Hall, P., Ward, C. (1998). *Sociable Cities: The Legacy of Ebenezer Howard*. Chichester: Wiley.
- Haidu, I. (2016). What Is Technical Geography? *Geographia Technica*, 11(1), 1-5, DOI: 10.21163/GT_2016.111.01.
- Hartshorne, R. (1939). *The Nature of Geography*. Lancaster, Pennsylvania: Association of American Geographers.
- Hess, H. (1962). The History of Ocean Basins. *Petrologic Studies: A Volume to Honor A. F. Buddington*, 599-820.
- Hetwig, H.H. (1999). Geopolitik: Haushofer, Hitler and Lebensraum. *Journal of Strategic Studies*, 22(2), 218-241.
- Holden, J. (Ed.) (2017). *An Introduction to Physical Geography and the Environment* (4th Ed.). Harlow, United Kingdom: Pearson Education Limited
- Holt-Jensen, A. (1981). *Geography its History and Concepts: A Student's Guide*. London: Harper & Row Publishers.
- Hoyt, H. (1939). *The Structure and Growth of Residential Neighborhoods in American Cities*. Washington, DC: Federal Housing Administration.
- Howell, E. (2018). Navstar: GPS Satellite Network. Available from: <https://www.space.com/19794-navstar.html> (9 Apr. 2018).
- Huff, D.L. (1962). A Probability Analysis of Consumer Spatial Behavior. In: William S. Decker (Ed.), *Emerging Concepts in Marketing*. Chicago: American Marketing Association, 443-461.
- Huggett, R.J. (2011). *Fundamentals of Geomorphology* (3rd Ed.). 270 Madison Avenue, New York: Routledge.
- IPCC. (2007). *Climate Change 2007: The Physical Science Basis*. Geneva, Switzerland: IPCC Secretariat, February 2007.
- Jefferson, M. (1939). The Law of the Primate City. *Geographical Review*, 29, 226-232.
- Jackson, P. (2006). Thinking Geographically. *Geography*, 91(3), 199-204.
- Johnston, R.J., Fairbrother, M., Hoare, T., Hayes, D., Jones, K. (2008). The Cold War and Geography's Quantitative Revolution: Some Messy Reflections on Barnes' Geographical Underworld. *Geoforum*, 39(6), 1802-1806.
- King, C. (2010). *The Planet We Live On: The beginnings of the Earth Sciences*. Basic Books in Science: A Series of Books that Start at the beginning Book 6. Available from: www.paricenter.com: Basic Books in Science (23 Mar. 2017).
- Kupkova, L. (2010). Suburbanization and Urbanization of Prague - The Theory of Zonal Models and Reality (Chapter 12). Available from: <https://studylib.net/doc/8201219/the-theory-of-zonal-models-and-reality> (11 Jul. 2019).
- Lee, E.S. (1966). A Theory of Migration. *Demography*, 3, 47-57.

- Lewis, H. (1911). The Theory of Isostasy. *The Journal of Geology*, 19(7), 603-626.
- Lösch, A. (1940). *The Economics of Location*. Trans. W. Woglom & W. Stolper. New York: Wiley Science Editions, 1967; originally published in 1940.
- Lukermann, F. (1961). The Role of Theory in Geographical Inquiry. *The Professional Geographer*, 13(2), 1-6.
- Lukermann, F. (1965). The 'Calcul des Probabilites' and the Ecole Francaise de Geographie. *Canadian Geographer*, 9(3), 128-137.
- Lwin, K.K. (2008). *Fundamentals of Remote Sensing and its Applications in GIS*. Division of Spatial Information Science, University of Tsukuba.
- Mahan, A. (1890). *The Influence of Sea Power upon History, 1660–1783*. Boston: Little, Brown and Company.
- Mackinder, H.F. (1904). The Geographical Pivot of History. *The Geographic Journal*, 23(4), 435.
- Mann, P. (1965). *An Approach to Urban Sociology*. London: Routledge, p. 96.
- Mohsin, M. (2014). *Urban Growth and Conversion of Farmland in Bahawalpur City, Pakistan: Causes, Rates and Remedies*. Saarbrücken, Germany: LAMBERT Academic Publishing.
- Mohsin, M., Chinyama, A. (2016). Impacts of Solid Waste Management Practices on Environment and Public Health: A Case of Bahawalpur City, Pakistan. *Journal of Environmental & Agricultural Sciences*, 9, 69-79.
- Mohsin, M., Safdar, S., Khan, A.A. (2019). Selection and Studying of Geography as a Masters Subject in Bahawalpur, Pakistan: Students Perceptions and Prospects. *Journal of Environmental & Agricultural Sciences*, 18, 19-28.
- Mohsin, M. (2020). Geography: From Ancient Study to Modern Discipline. *Sunjaan (Insight) College Magazine*, Govt. Degree College (Boys), Choti Zareen, D.G. Khan, Punjab, Pakistan.
- Morrill, R.L. (2005). Hägerstrand and the 'Quantitative Revolution': A Personal Appreciation. *Progress in Human Geography*, 29, 333-6.
- Ormeling, F. (2009a). Technical Geography: Core Concepts in the Mapping Sciences. In: Maria Sala (Ed.) *GEOGRAPHY Vol. II, UNESCO Encyclopedia of Life Support Systems (EOLSS)*.
- Pacione, M. (2005). *Urban Geography: A Global Perspective (2nd Edition)*. London and New York: Routledge Taylor & Francis Group.
- Pariona, A. (2017). Notable Institutions and Societies Associated with Geographical Studies. Available from: <http://www.worldatlas.com/articles/notable-institutions-and-societies-associated-with-geographical-studies.html> (3 Apr. 2018).
- Pattison, W.D. (1964). The Four Traditions of Geography. *Journal of Geography*, 63(5), 211-216.
- Pendall, R. (1999). Do Land-Use Controls Cause Sprawl? *Environment and Planning B*, 26 (4), 555-571.
- Peterson, J.F., Sock, D. Gabler, R.F. (2011). *Fundamentals of Physical Geography*. Belmont, CA, USA: Brook/Cole, Cengage Learning.

- Pidwirny, M. (2002). Fundamentals of Physical Geography (Version 1.31). Available from: <http://www.geog.ouc.bc.ca/physgeog/home.html> (3 Sep. 2020).
- Poiata, C. (2019). The Dramatic Global Rise of Urbanization 1950-2020. Available from: <https://www.weforum.org/agenda/2019/09/mapped-the-dramatic-global-rise-of-urbanization-1950-2020/> (21 Jan. 2020).
- Pryor, R.J. (1968). Defining the Rural-Urban Fringe. *Social Forces*, 47(2), 202-215.
- Quizlet. (2019). AP Human Geography Models & Theories. Available from <http://quizlet.com/2260847/ap-human-geography-models-theories> (13 Mar. 2020).
- Rana, L. (2015). Models, Theory & Systems Analysis in Geography. *The Association for Geographical Studies*, 1-33.
- Ratzel, F. (1901). *Der lebensraum: Eine biogeographische studie* (Living Space: A Biogeographical Study). Tübingen, Germany: Verlag der Laupp'schen Buchhandlung.
- Ravenstein, E. (1885). The Laws of Migration. *Journal of the Statistical Society of London*, 48(2), 167-235.
- Reid, H.F. (1910). The Mechanics of the Earthquake. The California Earthquake of April 18, 1906, Report of the State Investigation Commission, Vol. 2, Washington, D.C: Carnegie Institution of Washington, pp.16-28.
- Rostow, W.W. (1990 [1960]). *The Stages of Economic Growth: A Non-Communist Manifesto*. Cambridge: Cambridge University Press.
- Sala, M. (2009). Theory and Methods in Geography. In: *GEOGRAPHY – Vol. I, UNESCO Encyclopedia of Life Support Systems (EOLSS)*, p. 113.
- Sala, M. (2009). Main Stages of Development of Geography. In: *GEOGRAPHY – Vol. I, UNESCO Encyclopedia of Life Support Systems (EOLSS)*.
- Sauer, C.O. (1925). The Morphology of Landscape. *Geography*, 2(2), 19-54.
- Saylor Foundation. (2012). *World Regional Geography: People, Places, and Globalization*. Saylor Foundation, Minneapolis: Open Textbook Library.
- Segar, D.A. (2007). *Introduction to Ocean Sciences*. (2nd Edition). W. W. Norton & Company.
- Sinclair, R. (1967). Von Thunen and Urban Sprawl. *Annals of the Association of American Geographers*, 57, 72-87.
- Singh, G. (1996). *Map Work and Practical Geography* (3rd Edition). New Delhi, India: Vikas Publishing House Pvt. Ltd.
- Skinner, M., Redfern, D., Farmer, G. (1999). *The Complete A-Z Geography Handbook*. London: Hodder & Stoughton.
- Smith, T.L. (1937). The Population of Louisiana: Its Composition and Changes. *Louisiana Bulletin*, 293, 24.
- Smith, D.M. (1971): *Industrial Location: An Economic Geographical Analysis* (1st Ed.). New York and Chichester: Wiley.
- Stamp, L.D., Stamp, E.C. (1927). *How to Teach Geography?* London: Longmans, Green and Co. Ltd.

- Stone, C.N. (1989). *Regime Politics: Governing Atlanta, 1946-1988*. University Press of Kansas.
- Stone, C.N. (1993). Urban Regimes and the Capacity to Govern: A Political Economy Approach. *Journal of Urban Affairs*, 15(1), 1-28 <https://doi.org/10.1111/j.1467-9906.1993.tb00300.x>
- Strahler, A. (2011). *Introducing Physical Geography* (5th Edition). Hoboken, NJ, USA: John Wiley & Sons Inc.
- Thomas, B. (2010). Prospects for Geography as an Interdisciplinary Discipline. *Annals of the American Association of Geographers*, 100(3), 493-501.
- Tobler, W. (1970). A Computer Movie Simulating Urban Growth in the Detroit Region. *Economic Geography*, 46(2), 234-240.
- Turekian, K.K. (1968). *Oceans*. Prentice-Hall.
- Vance, J.E. Jr. (1964). *Geography and Urban Evolution in the San Francisco Bay Area*. Berkeley, CA: Institute of Local Government Studies, University of California.
- Wallerstein, I. (1974). *The Modern World System: Capitalist Agriculture and the Origins of the European World Economy in the Sixteenth Century*. New York: Academic Press.
- Warf, B. (2006). *Encyclopedia of Human Geography*. Thousand Oaks, CA: SAGE Publications Inc.
- Whittlesey, D. (1936). Major Agricultural Regions of the Earth. *Annals of the Association of American Geographers*, 26, 199-240.
- Weng, Q. (2012). *An Introduction to Contemporary Remote Sensing*. The McGraw-Hill Companies, Inc.
- Witherick, M., Ross, S. Small, J. (2001). *Modern Dictionary of Geography* (4th Edition). London: Arnold.
- Woodward, J. (2013). *Geography: A Visual Encyclopedia* (First Animation Edition). New York: DK Publishing.
- Yadav, H.L., Sinha, S. (n.d). *Fundamentals of Human Geography*. (Textbook for XII). National Council for Educational Research and Training (NCERT), India.
- Zelinsky, W. (1971). The Hypothesis of the Mobility Transition. *Geographical Review*, 61, 219-249.

World Wide Web Useful Links

The list of internet sources used with their title and date of accession is as follows that might be useful for further reading:

1. <https://www.opengeography.org/ch-1-intro-to-geographic-science.html>: Chapter 1: Introduction to Geographic Science (17 Feb. 2017).
2. <https://www.pinterest.com/pin/177329304047571510>: Ptolemy's World Map (12 Mar. 2017).
3. www.killinglyschools.org/cms/.../Five%20Themes%20of%20Geography%202012.doc: Five Themes of Geography (12 March, 2017).
4. <https://spaceplace.nasa.gov/galaxy/en/>: Galaxy (14 Sep. 2017).
5. <http://www.moonchart.org/time-zones.html>: World Time Zone Map (14 Sep. 2017).
6. <https://www.quora.com/what-is-the-diameter-of-the-sun/>: Diameter of the Sun (14 Sep. 2017).
7. <https://www.pbs.org/..dp27bi>: Big Bang Theory (14 Sep. 2017).
8. <https://hubpages.com/education/Origin-of-the-Earth>: Origin of the Earth (15 Sep. 2017).
9. <https://www.en.wikipedia.org/wiki/landform>: Landform (18 Sep. 2017).
10. <https://www.earthclipse.com/geology/what-a-landform>: Landform (18 Sep. 2017).
11. <https://www.reference.com/science/mountains-important-eda05929d8082b7d#>: Mountains Importance (19 Sep. 2017).
12. https://en.wikipedia.org/wiki/Landscape_ecology: Landscape Ecology (10 Feb. 2018).
13. <https://oceanservice.noaa.gov/facts/geodesy.html>: Geodesy (10 Feb. 2018).
14. <https://www.oxfordbibliographies.com/view/document/obo.../obo-9780199874002-0069.x>: Behavioural Geography (10 Feb. 2018).
15. <https://www.geolounge.com/tourism-geography>: Tourism Geography (10 Feb. 2018).
16. <https://sites.google.com/a/uwlax.edu/transp-geography/home>: Transportation Geography (10 Feb. 2018).
17. <http://www.yourarticlelibrary.com/population-geography/4-general-theories-of-migration-explained/43257>: 4 General Theories of Migration (10 Feb. 2018).
18. <https://www.yourarticlelibrary.com/geography/urban-geography-meaning-scope.../39922>: Urban Geography: Meaning, Scope and Concepts (with statistics) (10 Feb. 2018).
19. <https://www.brand2global.com/the-geography-of-marketing>: Geography of Marketing (10 Feb. 2018).
20. <https://www.onlinelibrary.wiley.com/doi/10.1002/9781118786352.wbieg0280/full>: Military Geography (10 Feb. 2018).
21. https://www.healthcybermap.org/HGeo/pg1_1.htm: Medical Geography and Geography of Disease (10 Feb. 2018).

Govt. S.E. College Bahawalpur**BS Botany 4-years****3rd Semester (2018-22) Final Term Examination (2020)****Fundamentals of Geography (F-1) GEIG001106****Marks: 40****Time Allowed: 90 Minutes****Q.2: Answer/explain the following briefly: (2 × 10 = 20)**

1. Define Geography.
2. What is Solar System?
3. What do you know about rotation of earth?
4. Define Geomorphology.
5. What do you know about the shape of the earth?
6. What is Prime Meridian?
7. What is time zone?
8. Write about formation of Tides.
9. Enlist the major layers of the atmosphere with relative height.
10. What is Asthenosphere?

Q.3: Write a detailed note on the Internal Structure of the Earth. (10)**Q.4: Write a comprehension on Indian Ocean Currents with suitable diagrams. (10)**

**THE ISLAMIA UNIVERISTY OF
BAHWALPUR**
BS Geography 4-years (Session 2015–19)
1st Semester Final Term Examination
Paper: Fundamentals of Geography Foundation–I
(GEOG–101)

Marks: 40	Time Allowed: 90 Minutes
------------------	---------------------------------

Q.2: Answer/explain the following briefly: (2 × 10 = 20)

- (a) What is Insolation?
- (b) What is normal lapse rate?
- (c) What is inversion of temperature?
- (d) What are isotherms?
- (e) What is solar constant?
- (f) What are ocean currents?
- (g) What is condensation?
- (h) What is atmospheric pressure?
- (i) What are different layers of atmosphere?
- (g) What are tides?

Q.3: Define atmosphere and explain its composition. (marks 10, time 25 minutes).

Q.4: Enlist and explain the fundamental themes at geography.
(marks 10, time 25 minutes).

THE ISLAMIA UNIVERISTY OF BAHWALPUR
BS 4 Year Botany, Chemistry, Economics
3rd Semester Final Term Examination 2016 (Session 2014–
18)
Paper: Geography (Foundation–I)

Marks: 40**Time Allowed: 90 Minutes**

Q.2: Answer/explain the following briefly: (2 × 10 = 20)

1. What is mesosphere?
2. Define ocean wave.
3. Define isobars.
4. What are folded mountains?
5. What do you know about Peru Current?
6. What is P-wave?
7. What are metamorphic rocks?
8. What do you know about Earth Core?
9. Define atmosphere?
10. What do you know about the mountains of Alpine Period?

Q.3: Define and classify and also give a detailed account of sedimentary rocks. (10)

Q.4: Name and explain various types of ocean tides along with their advantages and disadvantages. (10)

ABOUT THE AUTHOR



Mr. Muhammad Mohsin has graduated from The Islamia University of Bahawalpur (IUB). He completed M.Phil. Geography from the Department of Geography (IUB). Currently he is working as an Assistant Professor of Geography at Department of Geography, Govt. Sadiq Egerton College, Bahawalpur. He has over ten years teaching experience of Intermediate, Masters and BS-4 Years in Geography. He has also performed his duties as a In charge Admissions, Paper Setter, Evaluator, Practical Examiner, Tutor, Seminar Conveyor and Focal Person in his and outside the departments. He is also engaged in research projects and authored/ co-authored over 35 research articles in various HEC recognized National and International Journals. He is also an author of one book titled “Urban Growth and Conversion of Farmland in Bahawalpur City, Pakistan” published from Germany in 2014. Presently, he is also working on many projects of research and an objective book of Geography. His areas of interests are urban dynamics, solid waste, water quality and changing land use patterns of cities.

ILMI KITAB KHANA

Kabir Street, Urdu Bazar, Lahore. Ph: 042-37353510, 37248129
www.ilmikitabhkhana.com, www.facebook.com/ilmikitabhkhana