# **Learning Outcomes based Curriculum Framework** (LOCF)

# B. A. Multidisciplinary (Four Year Degree Programme)

# Scheme A



# Department of Economics Chaudhary Ranbir Singh University, Jind w.e.f. 2023-24

# Details of UG Programme (Multidisciplinary): Scheme A

**Table 1: Core Courses** 

Semester	Courses Code	Name of Course		Credits		
	Courses Code	Name of Course	L	T	P	
I	BA/MD/ECO/CC/101	Microeconomics-I	3	1	0	
II	BA/MD/ECO/CC/201	Microeconomics-II	3	1	0	

**Table 2: Minor and Vocational Courses** 

Semester	Courses Code	Name of Course	C	Credits		
	Courses Code	Name of Course	L	L T P	P	
I	BA/MD/ECO/MIC/101	Agricultural Economics	2	0	0	
II	BA/MD/ECO/MIC/201	Public Economics	2	0	0	

**Table 3: Multidisciplinary Courses** 

Semester	Courses Code Nome of Course	Credits			
	Courses Code	Name of Course	L	L T P	LT
I	BA/MD/ECO/MDC/101	Indian Economy - I	2	1	0
II	BA/MD/ECO/MDC/201	Indian Economy - II	2	1	0

**Table 4: Ability Enhancement Courses** 

Semester	Courses Code	Name of Carries	Credits		
	Courses Code	Name of Course	L	T	P
I	-	Choose from the common pool	2	0	0
II	•	Choose from the common pool	2	0	0

**Table 5: Skill Enhancement Courses** 

Semester	Courses Code	Name of Course	Credits		
	Courses Code	Name of Course	L	T	P
I	B-23-SEC-107	Basic Computer Applications	2	0	1
II	B-23-SEC-224	Computer Applications in Economics	2	0	1

**Table 6: Value Added Courses** 

Semester	Courses Code Name of Course	Name of Course	Credits		
	Courses Code	realite of Course	L	L T P	P
I	B-21-VAC-101	Human Values and Ethics	2	0	0
II	B-21-VAC-201	Environmental Studies	2	0	0

# Course Title: Microeconomics- I Course Code: BA/MD/ECO/CC/101

Total Credits: 4 Time: 3 Hours Max. Marks: 100 Theory Marks: 70 Internal Marks: 30

**Note:** The question paper will consist of nine questions in all. The first question will be compulsory and will consist of seven short answer type questions of two marks each covering the whole syllabus. In addition, the students are required to attempt one question from each unit. All questions carry equal marks.

#### **Course Outcomes:**

- 1. To know the scope and breadth of Microeconomics along with understanding of these concepts to comprehend real world problems along with the ability to think critically and analyze economic problems.
- 2. To understand the concept of ordinal utility. The core principles of demand so that they can apply the able to apply the understanding of these concepts to comprehend real world problems. It will make students aware about the various concept of utility.
- 3. Understanding the core principles of productions so that they can apply the understanding of the concepts to comprehended real world problems along with the ability to think critically and analyze economic problems.
- 4. It will make students aware about the various concepts of cost and revenue so that they are able to apply the understanding of these concepts.

# **Unit-I**

**The Economic Problem:** Scarcity and Choice, Functions of an Economic System, Circular Flow of Economic Activities, System of Economic Organization, Micro and Macro Economics, Law of Demand, Elasticity of Demand: Concept, Types, Measurement, Determinants and Importance.

# Unit-II

**Consumer Theory:** Concept of Utility, Cardinal Utility Analysis, Marginal and Total Utility, Consumer's Equilibrium, Derivation of Demand Curve, Consumer's Surplus.

Ordinal Utility Theory: Indifference Curves Analysis, its Characteristics, Budget Line, Marginal Rate of Substitution, Consumer's Equilibrium, Price, Income and Substitution Effects, Derivation of Demand Curve, Limitations of Utility Theory of Demand.

# **Unit-III**

**Producer's Behaviour and Supply:** Supply, Firm as an Agent of Production, Law of Variable Proportions, Returns to Scale, Characteristics of Iso-quants, Ridge Lines, Least Cost Combination of Factors, Internal and External Economies and Diseconomies. Movements and Shifts in Supply Curve, Elasticity of Supply.

# **Unit-IV**

**Cost Analysis:** Concepts of Costs, Short Period Costs and Long Period Costs, Modern Theory of Costs. Revenue: Concepts of Revenue; Total, Average and Marginal Revenue and their Relationships, Break-Even-Analysis & its Uses.

- 1. Paul Samuelson and Nordhaus: Economics), Tata McGraw Hill Publishing Company, New Delhi.
- 2. N. Gregory Mankiw: Principles of Economics, Thomson.
- 3. J.E. Stiglitz and G.E. Walsh: Principles of Economics, W.W. Norton & Co. N.Y.
- 4. R.G. Lipsey, and KA. Chrystal, Principles of Economics Oxford University Press, Oxford.
- 5. A. Koutsoyiannis, Modern Microeconomics, Macmillan.
- 6. R.G. Lipsey and KA. Chrystal, Economics, Oxford University Press, Oxford.

Course Title: Microeconomics - II Course Code: BA/MD/ECO/CC/201

> Total Credits: 4 Time: 3 Hours Max. Marks: 100 Theory Marks: 70 Internal Marks: 30

**Note:** The question paper will consist of nine questions in all. The first question will be compulsory and will consist of seven short answer type questions of two marks each covering the whole syllabus. In addition, the students are required to attempt one question from each unit. All questions carry equal marks.

# **Course Outcomes:**

- 1. Analyze given situations in a perfect market on a micro economic level. Understand the internal structure and assumptions of the different analytical frameworks of market conditions.
- 2. Analyze given situations in a monopoly and monopolistic competition markets on a micro economic level. Understand the internal structure and assumptions of the different analytical frameworks of market conditions.
- 3. Analyze given situations in a various market on a micro economic level. Understand the internal structure and assumptions of the different analytical frameworks of market conditions.
- 4. Apply Micro economic tools to solve real life problems especially under uncertainty and game theory.

#### Unit-I

**Market Structures:** Perfect Competition, Characteristics and Assumptions, Price Determination under Perfect Competition, Equilibrium of the Firm and Industry in the Short Period and the Long Period. Monopoly; Characteristics, Equilibrium of the Monopoly Firm in Short Period and Long Period, Concept of Supply-Curve under Monopoly, Price Discrimination, Measure of Monopoly Power.

# **Unit-II**

**Imperfect Market:** Monopolistic Competition, Characteristics, Short Period and Long Period Equilibrium of the Firm, Group-equilibrium, Selling Costs, Product Differentiation, Excess Capacity. Oligopoly; Characteristics, Emergence of Oligopoly, Cournot's Model, Bertrand's Model, Price Rigidity, Price Leadership, Collusive and Non-collusive Oligopoly.

# **Unit-III**

**Market Failure:** Market Efficiency, Reasons for Market Failure, Public Goods and Externalities, Transaction Costs, Asymmetric Information, Public Policy towards Monopoly and Competition.

# **Unit-IV**

**Theory of Factor Pricing:** Marginal Productivity Theory of Distribution, Backward Bending Supply Curve of Labour, Ricardian and Modern Theory of Rent, Quasi-rent, Net and Gross Interest, Theories of Interest, Net and Gross Profit, Theories of Profit.

- 1. Paul Samuelson and Nordhaus: Economics), Tata McGraw Hill Publishing Company, New Delhi.
- 2. N. Gregory Mankiw: Principles of Economics, Thomson.
- 3. J.E. Stiglitz and G.E. Walsh: Principles of Economics, W.W. Norton & Co. N.Y.
- 4. R.G. Lipsey, and KA. Chrystal, Principles of Economics Oxford University Press, Oxford.
- 5. A. Koutsoyiannis, Modern Microeconomics, Macmillan.
- 6. R.G. Lipsey and KA. Chrystal, Economics, Oxford University Press, Oxford.

Course Title: Agricultural Economics Course Code: BA/MD/ECO/MIC/101

Total Credits: 2 Time: 2 Hours Max. Marks: 50 Theory Marks: 35 Internal Marks: 15

**Note:** The question paper will consist of three questions in all. The first question will be compulsory and will consist of seven short answer type questions of one mark each covering the whole syllabus. In addition, the students are required to attempt one question of 14 marks from each unit.

#### **Course Outcomes:**

- 1. To understand, critically analyze and present the nature, importance and scope of agricultural.
- 2. To attain in-depth understanding of the burning issues in Indian agriculture including land reforms and labourers.

#### Unit-I

**Agriculture and Economic Development:** Agricultural Economics—Definition, Nature and Scope; Role of Agriculture in Economic Development; Inter-Sectoral Linkages of Agriculture (Backward & Forward Linkages and Feedback Effects); Agriculture and Industry; Need of Agricultural Economics.

# **Unit-II**

**Land Reforms and System of Farming:** Farm Size and Productivity Relationship, Agricultural Taxation (With Special Reference to India); Problems and Measures to Improve the Conditions of Agricultural Labourers

- 1. Phougat, S. and Kumar, D. (2023). Principles of Agricultural Economics. *Academic Publication*, *New Delhi*.
- 2. Southworth, H.M. and B.F. Johnston (ed.) Agricultural Development and Economic Growth (Cornell University Press, London, 1974).
- 3. Heady, E.O. Economics of Agricultural Production and Resources Use (Prentice Hall India Ltd. New Delhi-1964).
- 4. Sadhu, A.N. and A. Singh, Agricultural Problems in India (Himalaya Publishing House, Bombay).
- 5. Mellor, J.W. The Economics of Agricultural Development (Vora and Co. Bombay, 1966).
- 6. Donner, Peter: Land Reforms and Economic Development.
- 7. Kahlon, AS. And Tyagi, D.S. Agricultural Price Policy in India (allied Pub. New Delhi, 1983).
- 8. Patnaik, Utsa (ed.) Agrarian Relations and Accumulation. The mode of production in India.
- 9. Kaur, Rajbans Agricultural Price Policy in Economic Development.
- 10. Ellis, Frank Peasant Economics (Cambridge University Press 1963).
- 11. Bhalla G.S. and Y.K. Alagh Performance of Indian Agriculture a district-wise Study.
- 12. Rao, C.H.H. Technological change and Distribution of gains in Indian Agriculture.
- 13. Lehman, Davir (ed) Agrarian Reform and Agrarian reformism in India.
- 14. Ghatak, S. and Ken Ingersent Agriculture and Economic Development.
- 15. Soni, RN. Leading Issues in Agricultural Economics (Sohan Lal Nagin Chand Co. Jalandhar, 2006).
- 16. Khusro, AM. Readings: in agricultural Development.
- 17. Vandana Shiva The Violence of Green Development.
- 18. Dantwala, M.L. (ed.) Indian Agricultural Development since Independence.

# Course Title: Public Economics Course Code: BA/MD/ECO/MIC/201

Total Credits: 2 Time: 2 Hours Max. Marks: 50 Theory Marks: 35 Internal Marks: 15

**Note:** The question paper will consist of three questions in all. The first question will be compulsory and will consist of seven short answer type questions of one mark each covering the whole syllabus. In addition, the students are required to attempt one question of 14 marks from each unit.

# **Course Outcomes:**

- 1. Students will understand the nature, scope and importance of public finance and different role of government.
- 2. To become familiar with the concept of budget and types or classification of budget, budget making process in India.

# Unit-I

**Introduction to Public Economics:** Nature, Scope and Importance; Theory of Maximum Social Advantage; Private Goods, Public Goods and Merit Goods; Different Roles of Government: Allocation, Stabilization and Distribution.

#### **Unit-II**

**Budget:** Meaning and Purpose of Budget; Types or Classification of Budget, Budget Making Process in India. Budgeting; Zero Based Budgeting, Performance Budgeting; Measures of Budget Deficit and their Significance.

- 1. Musgrave, R & Musgrave, P B: Public Finance in Theory and Practice. McGraw-Hill International eds.
- 2. Houghton, R.W. (ed.) (1970): Public Finance
- 3. Atkinson, A B and Stiglitz, J E: Lectures on Public Finance
- 4. Peacock, and Straw, G K (1970): The Economic Theory of Fiscal Policy
- 5. Chellah, RC (1996): Sustainable Growth, Essays on Financial and Fiscal Sector Reforms, Oxford University Press.
- 6. Raghbendra Jha (1999): Modern Public Economics, Routledge
- 7. Govt. of India, Ministry of Finance: 9<sup>th</sup>, 10<sup>th</sup> and 11<sup>th</sup> Finance Commission Reports
- 8. Govt. of India, Ministry of Finance: Sarkaria Commission Report on Centre State Financial Relations.

# Course Title: Indian Economy-I Course Code: BA/MD/ECO/MDC/101

Total Credits: 3 Time: 3 Hours Max. Marks: 75 Theory Marks: 50 Internal Marks: 25

**Note:** The question paper will consist of four questions in all. The first question will be compulsory and will consist of four short answer type questions of two marks each covering the whole syllabus. In addition, the students are required to attempt one question of 14 marks from each unit.

#### **Course Outcomes:**

- 1. To understand the characteristics and indicators of Indian economy.
- 2. To know the institutional structure of agriculture and issues of food security in Indian economy.
- 3. Understanding the India's population growth, its reasons and various theory of population growth.

# Unit-I

**Indian Economy:** Nature and Characteristics of Indian Economy. Basic Economic Indicators—National Income, Performance of Different Sectors. Trends in Prices and Money Supply.

#### Unit-II

**Institutional Structure:** Land-reforms in India; Agricultural Marketing and Warehousing; Issues in Food Security – Policies for Sustainable Agriculture; Agricultural Finance Policy; Agricultural Price Policy.

# **Unit-III**

**Theories of Population:** Malthusian Theory of Population, Optimum Theory of Population, Theory of Demographic Transition, Population as 'Limits to Growth' and as 'Ultimate Source'.

**India's Population:** Size and Growth Trends; Causes of Rapid Growth of Population, Remedies for Population Explosion, Population Policy.

- 1. Bardhan. P.K. (9<sup>th</sup> Edition) (1999), The Political Economy of Development in India, Oxford University Press, New Delhi.
- 2. Brahmanada, P.R. and V.R. Panchmukhi (Eds.) (2001), Development Experience in the Indian Economy: Inter-State Perspectives, Bookwell, Delhi.
- 3. Datta, R. and K P. M. Sundhram (latest edition), Indian Economy. S. Chand & Company Ltd. New Delhi.
- 4. Mishra, S.K and V.K. Puri Indian Economy-151 Development Experience, Himalaya Publishing House, Mumbai, Latest Edition.
- 5. Meier, Gerald M. (1987). Pioneers in Development. Oxford University Press, New Delhi.
- 6. Ministry of Finance (2020). Economic Survey. Government of India.

# Course Title: Indian Economy-II Course Code: BA/MD/ECO/MDC/201

Total Credits: 3 Time: 3 Hours Max. Marks: 75 Theory Marks: 50 Internal Marks: 25

**Note:** The question paper will consist of four questions in all. The first question will be compulsory and will consist of four short answer type questions of two marks each covering the whole syllabus. In addition, the students are required to attempt one question of 14 marks from each unit.

#### **Course Outcomes:**

- 1. To understand the monetary and fiscal policy.
- 2. To understand the concept of agricultural, industrial and service sectors of Indian economy.
- 3. To understand the concept of international trade.

# Unit-I

**Growth and Development:** Meaning of Growth and Development, Indicators & Measurements of Growth, Determinant of Growth, Sustainable Development, Planning in India

**Monetary and Fiscal Policy**: Goals and Instruments of Monetary and Fiscal Policy with Special Reference to India.

# **Unit-II**

**Agricultural, Industrial and Service Sectors:** Constraint to agricultural Development, Industry as the Engine of Growth, Determinant of Industrialization, Excess Growth of Service Sector, Taxation and Reforms.

# **Unit-III**

**International Trade:** Foreign Trade, Determinant of Export and Import, Balance of Payment, Trade and Development, Export Import Policy.

- 1. Bardhan, P.K. (1999). The Political Economy of Development in India,9<sup>th</sup> Edition, Oxford University Press, New Delhi.
- 2. Byres, T.J. (Ed.) (1998). The Indian Economy: Major Debate since Independence, Oxford University Press, New Delhi.
- 3. Dhar, P.K. (2014) Indian Economy-Its growing dimensions, Kalyani Publishers, New Delhi.
- 4. Economic Surveys, Government of India Various Issues.
- 5. Reserve Bank of India: Report on Currency and Finance (Annual), Mumbai.
- 6. Economic and Political Weekly: Various Issues.
- 7. Dutt Rudder and K.P.M Sundaram (2018). Indian Economy, 72th Edition, S, Chand

# Course Title: Basic Computer Applications Course Code: B-23-SEC-107

Total Credits: 3 Time: 2 Hours Max. Marks: 75 Theory Marks: 50 Practical Marks: 25

**Note:** The question paper will consist of four questions in all. The first question will be compulsory and will consist of four short answer type questions of two marks each covering the whole syllabus. In addition, the students are required to attempt one question of 14 marks from each unit.

#### **Course Outcomes:**

- 1. Students will be able to understand MS-word.
- 2. To understand technique of Inserting graphs and diagrams.
- 3. To understand the concepts and working of MS power point.

# Unit-I

**Introduction to Computer Fundamental:** Basic Computer Terminology, Generations of Computer, Components of Computer.

#### **Unit-II**

**Input-Output Devices:** Monitor, Keyboard, Mouse and Printer. Memory; Types of Memory. Hardware and Software. Internet & Intranet

#### Unit-III

**Introduction to MS Word:** Editing and formatting of documents, inserting page Numbers and footnotes.

Introduction to MS Excel: Auto format and properties, inserting tables, graphs and diagrams.

**Introduction to MS Power point**: Creating and enhancing presentation.

- 1. Ahlawat, Surender (2020). *Computer Application in Economics*. Kindle Direct Publishing. Seattle, Washington. USA.
- 2. Rajaraman, V. (2015), Fundamentals of Computers, Prentice Hall of India, New Delhi.
- 3. Bhattacharjee Jyoti (2010), *Practical Statistics: Using Microsoft Excel*, Asian Books, Asian Books Private Limited, New Delhi.
- 4. ITL Education Solution Limited (2012), *Introduction to Information Technology*, Pearson, New Delhi.
- 5. House, D. (2015), *Microsoft Word, Excel, and PowerPoint: Just for Beginners*. India: Outskirts Press.

# Course Title: Computer Applications in Economics Course Code: B-23-SEC-224

Total Credits: 3 Time: 2 Hours Max. Marks: 75 Theory Marks: 50 Practical Marks: 25

**Note:** The question paper will consist of four questions in all. The first question will be compulsory and will consist of four short answer type questions of two marks each covering the whole syllabus. In addition, the students are required to attempt one question of 14 marks from each unit.

#### **Course Outcomes:**

- 1. To understand the concepts and working of MS excel.
- 2. To understand the concepts and working of uses of mathematical techniques.
- 3. To understand the statistical technique and analysis on MS excel.

# **Unit-I**

**Data and Information**: Meaning and Types, Database Management System; Advantages and Limitations. Email, Search Engines, Social Media.

# **Unit-II**

**Introduction to Excel**: Creation of Worksheets; Data Entry, Formatting, Sorting and Validation; Importing and Exporting of Data Files.

#### **Unit-III**

**Uses of Mathematical Techniques:** Uses of Mathematical (Addition, Subtraction, Multiplication and Division) and Descriptive Statistics (Mean, Median, Mode); Creation of Diagrams and Graphs.

- 1. Ahlawat, Surender (2020). *Computer Application in Economics*. Kindle Direct Publishing. Seattle, Washington. USA.
- 2. Rajaraman, V. (2015). Fundamentals of Computers. Prentice Hall of India, New Delhi.
- 3. Bhattacharjee Jyoti (2010), *Practical Statistics: Using Microsoft Excel*, Asian Books, Asian Books Private Limited, New Delhi.
- 4. ITL Education Solution Limited (2012), *Introduction to information Technology*, Pearson, New Delhi.
- 5. House, D. (2015), *Microsoft Word, Excel, and PowerPoint: Just for Beginners*. India: Outskirts Press.

# Course Title: Human Values and Ethics Course Code: B-21-VAC-101

Total Credits: 2 Time: 2 Hours Max. Marks: 50 Theory Marks: 35 Internal Marks: 15

**Note:** The question paper will consist of three questions in all. The first question will be compulsory and will consist of seven short answer type questions of one mark each covering the whole syllabus. In addition, the students are required to attempt one question of 14 marks from each unit.

# **Course Outcomes:**

- 1. To know the Need, Content and Process for Value Education.
- 2. To understand the Human Values and Ethics.

# Unit-I

**Introduction, Need, Content and Process for Value Education:** Understanding the Need, Content and Process for Value Education.

**Classification of Value Education:** Understanding Personal Values, Social Values, and Moral Values & Spiritual Values; Understanding the Difference between Ideology and Values.

**Meaning and nature of human values:** Significance of Human Values in Life; Relation between Values and Ethics. Understanding the Relationship among: Self, Identity and Personality.

# **Unit-II**

**Nature, Characteristics and Scope of Professional Ethics:** Types of Professional Ethics; Professional Values: Trusteeship, Inclusiveness, Commitment, Sustainability, Accountability, Transparency, Impartiality.

**Values for Global Citizenship:** Equality, Justice, and Human Dignity. Nature and Need of Competency based Education; Types of Competencies, Core Competencies: Communication, Teamwork, Planning and Achieving Goals, Functional Competencies: Analytical Thinking, Knowledge Sharing and Learning, Decision Making, Partnership Building.

- 1. R.R. Gaur, R Sangal, G.P. Bagaria (2009): A Foundation Course in Human Values and Professional Ethics, Excel Books.
- 2. D.R. Kiran (2014) Professional Ethics and Human Values, McGraw Hill Education (India).
- 3. Happiness and Well-Being, NIOS Module V (Health and well-being)
- 4. Kiran Kumar, K. Salagame (2016): Meaning and Well-Being: Indian Perspectives, Journal of Constructivist Psychology
- 5. Dan P. McAdams, Kali Trzesniewski, Jennifer Lilgendahl, Veronica Benet-Martinez, Richard W. Robins (2021) Self and Identity in Personality Psychology, Personality Science, 2021, Vol. 2, Article e6035,https://doi.org/10.5964/ps.603
- 6. S.K. Kiran Kumar (2003): An Indian conception of wellbeing, in Henry, J. (Ed) European Positive Psychology Proceedings 2002. Leicester, UK: British Psychological Society.
- 7. Vivian L Vignoles (2017): Identity: Personal and Social, Chapter to appear in Oxford Handbook of Personality and Social Psychology (2nded.), edited by Kay Deaux and Mark Snyder.
- 8. Wong, S.-C. (2020). Competency Definitions, Development and Assessment: A Brief Review. International Journal of Academic Research in Progressive Education and Development, 9(3),95–114.

# Course Title: Environmental Studies Course Code: B-21-VAC-201

Total Credits: 2 Time: 2 Hours Max. Marks: 50 Theory Marks: 35 Internal Marks: 15

**Note:** The question paper will consist of three questions in all. The first question will be compulsory and will consist of seven short answer type questions of one mark each covering the whole syllabus. In addition, the students are required to attempt one question of 14 marks from each unit.

#### **Course Outcomes:**

- 1. Understand the concept of environmental studies, sustainable development and ecosystem.
- 2. Know about the types of pollution, solid waste management, global environmental issues and environmental laws.

#### Unit-I

**Introduction to Environmental Studies:** Multidisciplinary Nature of environmental Studies; Scope and Importance; Concept of Sustainability and Sustainable Development.

**Natural resources:** Renewable and Non-renewable Resources; Land Resources: Land Degradation and Soil Erosion; Forest Resources: Importance of Forests, Deforestation: Causes and Impacts on Environment; Water Resources: Use and Over- exploitation of Surface and Ground Water; Energy Resources: Renewable and Non-renewable Energy Sources.

#### Unit-II

**Environmental Pollution:** Types, Causes, Effects and Controls; Air, Water, Soil and Noise Pollution; Solid Waste Management: Sources, Methods of Disposal: Landfill, Incineration and Composting; Climate Change, Global Warming, Ozone Layer Depletion, Acid Rain and Impacts on Human Communities and Agriculture.

- 1. Kumar, D. and Phougat, S. (2022). Environmental Economics: Theory and Practice, *Academic Publication*, *New Delhi*.
- 2. Kaushik, A & Kaushik, C.P. 2022. Perspectives in Environmental Studies. New Age International Pvt Ltd, New Delhi.
- 3. Bharucha, E. 2021. A Textbook of Environmental Studies for Undergraduate Courses, Orient Blackswan Pvt. Ltd.
- 4. Goswami, P., Mandal, J. & Singh, S. 2022. A Textbook on Environmental Studies, Ashok book stall, Assam.
- 5. Joshi, P.C. & Joshi, N. 2009. A Text Book of Environmental Science. APH Publishing Corporation.
- 6. Basu, M. & Xavier Savarimuthu, S.J. 2017. Fundamentals of Environmental Studies. Cambridge University Press.
- 7. Singh, R.P. & Islam, Z. 2012. Environmental Studies. Concept Publishing Company.