

**Scheme and Curriculum of Examinations of Three Year Degree Programme**

**(Under Credit Based Continuous Evaluation Grading System) (CBCEGS)**

**Bachelor of Arts/Bachelor of Science (Economics) Semester-I**

**Session- 2023-24**

Bachelor of Arts/Bachelor of Science (Economics) Semester-I										
Course Code	Course Title	Course Type	Hours per week	L-T-P	Total Credits	Marks				Examination time (in Hours)
						Total	Ext.		CA	
							Th	P		
BARL-1453/BECL-1453	Quantitative Techniques-I	E	4	4-0-0	4	100	80	-	20	3

E-Elective

Bachelor of Arts/Bachelor of Science (Economics)

Semester-I

Session: 2023-24

Course title: Quantitative Techniques-I

Course Code: BARL-1453/BECL-1453

Course Outcomes

After the successful completion of this course, the students will be able to

CO 1: Solve linear equations of two variables and its applications in economics under the quadratic equations, arithmetic progression, geometric progression and their applications in economics.

CO 2: Develop understanding of elements of analytical geometry, straight lines, basic concepts of trigonometry and permutations and combinations.

CO 3: Differentiate between a constant and a variable, graph of linear and quadratic functions and its applications in economics.

CO 4: Recognize derivative of implicit functions, parametric functions, exponential functions, logarithmic functions and how to apply these derivatives in economics theory.

Bachelor of Arts/Bachelor of Science (Economics)

Semester-I

Session: 2023-24

Course title: Quantitative Techniques-I

Course Code: BARL-1453/BECL-1453

Examination Time: 3 Hours

Max. Marks: 100

L T P

Theory : 80

4-0-0

CA : 20

Note: Instructions for the Paper–Setters/Examiners:

Eight questions of equal marks (16 marks each) are to be set, two in each of the four Sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any Section.

#### UNIT-I

Solution of Linear Equations: Solution of Simultaneous Linear Equations (upto two variable case), Application of Linear Equation in Economics; Solution of Quadratic Equations Series: Arithmetic Progression Series, Geometric Progression Series and their applications in economics.

#### UNIT-II

Elements of Analytical Geometry: Straight line; Basic concepts of trigonometry(with formulae); Concepts of combination and permutation, Elements of set theory, union, intersection, difference, symmetric difference, complementation, Venn diagrams.

#### UNIT-III

Difference between a constant and a variable, concept of functions, classifications of functions, graph of linear and quadratic functions (Economic applications).Limits and continuity of a function. Concept of differentiation.

#### UNIT-IV

Derivatives of elementary functions excluding inverse trigonometric functions, Rules of derivatives; functions of functions rule; derivatives of implicit functions, parametric functions, logarithmic differentiation (Application in Economics).

Text Book:

C.S. Aggarwal, R.C. Joshi, Mathematics for students of Economics, New Academic Publishing Co., Jalandhar, Thirty first edition, 2016.

Reference Books:

1. G.S. Monga, Mathematics and Statistics for Economics, Sangam Books Ltd, New edition, 1998.
2. T. Yamane, Mathematics for Economists (An Elementary Survey), Literary Licensing, LLC, 2012.
3. R.G.D. Allen, Mathematical Analysis for Economists, Trinity Press, 2014.
4. E.T. Dowling, Introduction to Mathematical Economics, McGraw Hill Publisher, Third edition, 2011.
5. A.C. Chiang, K. Wainwright, Fundamental Methods of Mathematical Economics, McGraw Hill, New York, Fourth edition, 2017.