SUBJECT: <u>ECONOMICS AND BUSINESS MATHEMATICS & STATISTICS - I</u> (EBMI)

CLASS XI

SEMESTER I

GROUP A – (ECONOMICS – I)

<u>THEORY</u>

<u>FULL MARKS – 35</u>

(MCQ Type Question)

UNIT	Topic	No of periods assigned	Marks
1	Introduction to Economics	4	5
2	Utility and Demand Analysis	6	5
3	Elasticity of Demand	5	5
4	Production and Cost	15	20
	Total	30	35

DETAIL SYLLABUS

UNIT	Topic / Sub Topic	No of periods assigned
1	Introduction to Economics – Definition of Economics, scope and subject matter of economics, Micro and Macro-economics, basic problems of an economy (scarcity, choice and resource allocation), three economic questions (what, how and for whom to produce).	4
2	Utility, marginal utility, diminishing marginal utility, consumers' surplus. Concepts of Cardinal and ordinal utility. Demand – factors affecting demand, demand function, law of demand – exceptions to the law, demand curve and its shifts – market demand curve.	6
3	Elasticity – price, income and cross price elasticities of demand (concept of normal/inferior good, substitute and complementary goods), factors affecting price elasticity of demand, measurement of price elasticity – arc/ point elasticities.	5
4a	Production – short-run and long run; Law of Variable Proportion and Returns to Scale, Total Product, Average Product, Marginal Product curves and their relationship. Revenue – Marginal Revenue, Average Revenue, relation between them.	8
4b	Cost – Fixed and variable, average and marginal, their relation, shapes of different types of cost curves. Long run cost curves.	4
4c	Supply – factors affecting it, law of supply, individual and market supply curves, elasticity of supply.	**3**

THEORY

FULL MARKS – 35

(SAQ AND LAQ Type Question)

UNIT	Topic	No of periods assigned	SAQ Marks	LAQ Marks
I	Theory of Goods Market	28	5x2marks=10marks	2x5marks=10marks
II	Theory of Factor Market	14	2x2marks=4marks, 1x1mark=1mark	2x5marks=10marks

DETAIL SYLLABUS

UNIT	Topic / Sub Topic	No of periods assigned
I(a)	Theory of Goods market – determination of equilibrium price and quantity in a market.	4
I(b)	Different forms of market – perfect competition, monopoly, monopolistic competition, and oligopoly.	10
I(c)	Equilibrium of a firm under perfect competition in short-run: break-even, shut down point and supply curve of a firm.	14
II	Theory of Factor Market – marginal productivity theory, wage determination from supply and demand of labour, rent and economic rent, interest-loanable fund theory, profit.	14

GROUP B – (Business Mathematics & Statistic - I)

THEORY

FULL MARKS –35

(MCQ Type Question)

UNIT	Topic	No of periods assigned	Marks
1	Indices	3	3
2	Logarithm	5	6
3	Progression	7	8
4	Simple and Compound Interest	5	6
5	Descriptive Statistics-I	10	12
	Total	**30**	**35**

DETAIL SYLLABUS

UNIT	Topic / Sub Topic	No of periods assigned
1	**Indices:** Basic concept, various laws of indices (without proof), simple problems**.**	3
2	**Logarithm:** Basic concept, laws of logarithm (without proof), common logarithm, characteristic and mantissa, use of log table.	5
3	**Progression:** Basic concept, formula for the nth term of A. P. and G.P. series. Sum of finite A.P. and G.P. series, simple problems.	7
4	**Simple and Compound Interest:** Basic concept of simple interest and compound interest, formula for measuring simple and compound interest (when interest is payable yearly, half-yearly, quarterly,	5

	monthly, weekly and daily basis), logarithmic solutions of the problems in compound interest (simple problems).		
5	**Descriptive Statistics-I:** Importance of Statistics, Meaning of data, classification, collection and tabulation of statistical data, basic concepts and calculation of arithmetic mean, median and mode for an ungrouped data only.	10	

SEMESTER II

THEORY

FULL MARKS – 35

(SAQ AND LAQ Type Question)

UNIT	Topic	No of periods assigned	SAQ Marks (Any 5 Q out of 8 Q each of 1 marks)	LAQ Marks (Any 3 Q are to be attempted out of 5 Q each of 10 marks)
1	Annuities	10	1x2=2	(5+5) x2=10
2	Linear and Quadratic equations	10	1x2=2	(5+5) x2=10
3	Graphical Representation of Statistical Data	10	1x2=2	10x1=10
4	Descriptive Statistics-II	12	1x2=2	10x2=20

DETAIL SYLLABUS

UNIT	Topic / Sub Topic	No of periods assigned
1	**Annuities:** Basic concept of annuities, formula for measuring amount on maturity of an immediate annuity and present value of an immediate annuity only (without proof), simple problems.	10
2	**Linear and Quadratic equations:** Basic concepts, solving two linear equations. Finding roots of a quadratic equation. Formulation of a quadratic equation from the given roots, simple problems.	10
3	**Graphical Representation of Statistical Data:** Line chart, Bar chart, Pie chart, Histogram, Frequency Polygon, Ogive.	10
4	**Descriptive Statistics-II:** Basic concept and calculation of arithmetic mean, median and mode for a grouped data. Simple problems	12

Project   **Total no. of periods = 72**

Sl No.	Details of Practical/ Project	Periods
1.	Select a current economic issue (e.g., inflation, unemployment, etc.) and analyze it using micro and macroeconomic principles. Discuss the basic problems of the economy related to this issue.	7
2.	Have students design and conduct a survey to understand consumer choices and calculate consumer surplus based on the data collected.	7

3.	Have students observe a local market and collect price and quantity data to analyze price elasticity in a real-world setting.	7
4.	Assign a research project where students investigate a specific industry to classify it according to market structures (perfect competition, monopoly, etc.).	7
5.	Investigate how arithmetic and geometric progressions appear in real-life scenarios, such as investment growth, population studies, or construction projects. Present analysis using formulas and graphs.	7
Project		
6.	Collect and analyze data on wage rates and employment levels in various sectors to discuss the marginal productivity theory.	7
7.	Design and conduct a survey to measure consumer preferences for a particular good or service. Analyze the results to calculate consumer surplus and discuss utility concepts (cardinal vs. ordinal).	7
8.	Choose a dataset (e.g., sports statistics, population demographics) and present it using various graphical representations, including line charts, bar charts, pie charts, histograms, and ogives. Justify the choice of representation based on data characteristics.	9
9.	Conduct a survey on a topical issue (e.g., favorite hobbies). Collect and analyze data using classification, tabulation, and calculation of mean, median, and mode. Present findings in a report with graphs.	7
10.	Conduct a study on grouped data (e.g., test scores from a class) and calculate mean, median, and mode. Present findings through a report, including visual aids like histograms and frequency polygons.	7