AEC - 101: Agricultural Statistics 2 (1 + 1).

Theory:

Introduction: Definition of Statistics and its use and limitations; Frequency Distribution and Frequency Curves.

Measures of Central Tendency: Characteristics of Ideal Average, Arithmetic Mean; Median, Mode, Merits and Demerits of Arithmetic Mean.

Measures of Dispersion: Standard Deviation, Variance and Coefficient of Variation; Probability.

Definition and concept of probability; Normal Distribution and its properties.

Introduction to Sampling: Random Sampling; the concept of Standard Error; Tests of Significance - Types of Errors, Null Hypothesis, Level of Significance and Degrees of Freedom, Steps involved in testing of hypothesis; Large Sample Test - SND test for Means, Single Sample and Two Samples (all types); Small Sample Test for Means, Student's t - test for Single Sample, Two Samples and Paired t test. F test; Chi-Square Test in 2 x 2 Contingency Table, Yates' Correction for continuity.

Correlation: Types of Correlation and identification through Scatter Diagram, Computation of Correlation Coefficient 'r' and its testing.

Linear Regression: of Y on X and X on Y. Inter - relation between 'r' and the regression coefficients, fitting of regression equations.

Experimental Designs: Basic Designs, Completely Randomized Design (CRD), Layout and analysis with equal and unequal number of observations, Randomized Block Design (RBD), Layout and analysis, Latin Square Design (LSD), Layout and analysis.

Practical:

Construction of Frequency Distribution Tables and Frequency Curves; Computation of Arithmetic Mean for Un-Grouped and Grouped data; Computation of Median for Un-Grouped and Grouped data; Computation of Mode for Un-Grouped and Grouped data; Computation of Standard Deviation, Variance and Coefficient of Variation for Un-Grouped and Grouped data; SND test for Means, Single Sample; SND test for Means, Two Samples; Student's t - test for Single Sample; Student's t - test for Two Samples; Paired t - test and F - test; Chi-Square Test in 2 x 2 Contingency Table, Yates' Correction for continuity; Computation of Correlation Coefficient 'r' and its testing; Fitting of regression equations - Y on X and X on Y; Analysis of Completely Randomized Design (CRD); Analysis of Randomized Block Design (RBD); Analysis of Latin Square Design (LSD).

AEC - 102: Introduction to Computer Applications 3 (1 + 2).

Theory:

Introduction to Computers, Anatomy of Computers, Input and Output Devices. Units of Memory, Hardware, Software and Classification of Computers. Personal Computers, Types of Processors, booting of computer, warm and cold booting. Computer Viruses, Worms and Vaccines. Operating System - DOS and WINDOWS.

Disk Operating System (DOS): Some fundamental DOS Commands, FORMAT, DIR, COPY, PATH, LABEL, VOL, MD, CD and DELTREE, Rules for naming files in DOS and Types of files.

WINDOWS: GUI, Desktop and its elements, WINDOWS Explorer, working with files and folders; setting time and date, starting and shutting down of WINDOWS. Anatomy of a WINDOW, Title Bar, Minimum, Maximum and Close Buttons, Scroll Bars, Menus and Tool Bars.

Applications - MSWORD: Word, processing and units of document, features of word - processing packages. Creating, Editing, Formatting and Saving a document in MSWORD.

MSEXCEL: Electronic Spreadsheets, concept, packages. Creating, Editing and Saving a spreadsheet with MSEXCEL.

Use of in-built Statistical and other functions and writing expressions. Use of Data Analysis Tools, Correlation and Regression, t-test for two-samples and ANOVA with One-way Classification. Creating Graphs.

MS Power Point: Features of Power Point Package.

MSACCESS: Concept of Database, Units of database, creating database.

Principles of Programming: Flow Charts and Algorithms, illustration through examples.

Internet: World Wide Web (www), Concepts, Web Browsing and Electronic Mail.

Practical:

Study of Computer Components; Booting of Computer and its Shut Down; Practice of some fundamental DOS Commands, TIME, DATE, DIR, COPY, FORMAT, VOL, LABEL, PATH; Practicing WINDOWS Operating System, Use of Mouse, Title Bar, Minimum, Maximum and Close Buttons, Scroll Bars, Menus and Tool Bars; WINDOWS Explorer, Creating Folders, COPY and PASTE functions.

MSWORD: Creating a Document, Saving and Editing; MSWORD, Use of options from Tool Bars, Format, Insert and Tools (Spelling & Grammar) Alignment of text; MSWORD, Creating a Table, Merging of Cells, Column and Row width.

MSEXCEL: Creating a Spreadsheet, Alignment of rows, columns and cells using Format tool bar. Entering Expressions through the formula tool bar and use of inbuilt functions, SUM, AVERAGE, STDEV, Data Analysis using inbuilt Tool Packs, Correlation & Regression. Creating Graphs and Saving with & without data.

MSACCESS: Creating Database, Structuring with different types of fields.

MS Power Point: Preparation of slides on Power Point; transforming the data of WORD, EXCEL and ACCESS to other formats.

Internet Browsing: Browsing a Web Page and Creating of E-Mail ID.

AEC - 201: Principles of Agricultural Economics 2 (2 + 0).

Theory:

Economics: Meaning, Definition, Subject matter, Divisions of Economics, Importance of Economics; Agricultural Economics: Meaning, Definition; Basic Concepts: Goods, Service, Utility, Value, Price, Wealth, Welfare.

Wants: Meaning, Characteristics, Classifications of Wants, Importance.

Theory of consumption: Law of Diminishing Marginal utility, Meaning, Definition, Assumption, Limitations, Importance.

Consumer's surplus: Meaning, Definition, Importance.

Demand: Meaning, Definition, Kinds of Demand, Demand schedule, Demand Curve, Law of Demand, Extension and Contraction Vs Increase and Decrease in Demand.

Elasticity of Demand: Types of Elasticity of Demand, Degrees of price elasticity of Demand, Methods of Measuring Elasticity, Factors influencing elasticity of Demand, Importance of Elasticity of Demand.

Welfare Economics: Meaning, Pareto's optimality.

National Income: Concepts, Measurement. Public Finance: Meaning, Principles.

Public Resource: Meaning, Services Tax, Classification of Taxes.

Public expenditure: Meaning, Principles.

Inflation: Meaning, Definition, Kinds of inflation, effects of inflation.

AEC - 203: Agricultural Finance and Co-Operation 2 (1 + 1).

Theory:

Agricultural finance: nature and scope. Time value of money, Compounding and Discounting.

Agricultural credit: meaning, definition, need, classification. Credit analysis: 4 R's, 5 C's and 7 P's of credit, repayment plans. History of financing agriculture in India. Commercial banks, nationalization of commercial banks. Lead bank scheme, regional rural banks, scale of finance. Higher financing agencies, RBI, NABARD, AFC, Asian Development Bank, World Bank, Insurance and Credit Guarantee Corporation of India. Assessment of crop losses, determination of compensation. Crop insurance, advantages and limitations in application, estimation of crop yields.

Agricultural cooperation: philosophy and principles of cooperation. History of Indian cooperative Movement, pre-independence and post independence periods, cooperation in different plan periods, cooperative credit structure: PACS, FSCS.

Practical:

Factors governing use of Capital and identification of credit needs; Time value of money, Compounding and discounting; Tools of financial management, Balance sheet, Income statement and cash flow analysis; Estimations of credit needs and determining unit costs; Preparations and analysis of loan proposals; Types of repayment loans; Study of financial institutions: PACS, DCCB, Apex Banks, RRB's, CB's, NABARD. Co-operative movement in Nagaland & its present status.

AEC - 202: Production Economics and Farm Management 2 (1 + 1).

Theory:

Production Economics: Meaning, Definition, Nature and Scope of Agricultural Production Economics. Basic concepts and terms. Concepts of Production.

Production Functions: Meaning, Definition, Types.

Laws of returns: Increasing, Constant and decreasing. Factor Product Relationship. Determination of optimum input and output. Factor relationship. Product relationship. Types of enterprise relationships.

Returns to scale: Meaning, Definition, Importance. Farm Management. Economic principles applied to the Organisations of farm business.

Types and systems of farming. Farm planning and budgeting.

Risk and uncertainty. Farm budgeting.

Linear programming: Assumptions, advantages and limitations of linear programming.

Practical:

Computation of cost concepts; Methods of computation of depreciation; Analysis of Net worth statement; Farm inventory analysis; Preparation of farm plans and budgets; Types of farm records and accounts; Preparation of profit and loss account; Break, Even analysis; Economics analysis of different crop and livestock enterprises; Application of Farm Management Principles. Determination optimum product combination.

AEC - 301: Agricultural Marketing, Trade and Prices 2 (1 + 1).

Theory:

Agricultural Marketing: Concepts and Definition, Scope and subject matter.

Market and Marketing: Meaning, Definitions, Components of a market, Classification. Market structure, Conduct, performance. Marketing structure, Market functionaries or agencies.

Producer's surplus: Meaning, Types of producers surplus, marketable surplus. Marketed surplus, importance, Factors affecting Marketable surplus.

Marketing channels: Meaning, Definition, Channels for different products. Market integration, Meaning, Definition, Types of Market Integration.

Marketing efficiency: Meaning, Definition, Marketing costs, Margins and price spread, Factors affecting the cost of marketing, Reasons for higher marketing costs of farm commodities, Ways of reducing marketing costs.

Theories of International Trade: Domestic Trade, Free trade, International Trade, GATT, WTO, Implications of AOA. Market access, Domestic support, Export subsidies, EXIM-Policy & Ministerial conferences. Cooperative Marketing. State Trading. Ware Housing Corporation; Central and State, Objectives, Functions, Advantages.

Food Corporation of India: Objectives and Functions. Quality Control, Agricultural Products, AGMARK. Price Characteristics of agricultural product process, Meaning, Need for Agricultural Price Policy. Risk in Marketing: Meaning and importance, Types of Risk in Marketing. Speculations and Hedging, Futures trading, Contract farming.

Practical:

Identification of marketing channels; Study of livestock and horticultural markets; Price spread analysis; Visit to market institutions, NAFED; Study of SWC, CWC and STC; Analysis of information of daily prices; Marketed and marketable surplus of different commodities. Study of marketing-efficiency.

AEC - 302: Agri-Business Management 3 (2 + 1).

(Including Project Development, Appraisal and Monitoring)

Theory:

Definitions of Management. Management Functions, Planning, Meaning, Definition.

Agribusiness: Meaning, Definition, Structure of Agribusiness, (Input, Farm, Product Sectors). Importance of Agribusiness in the Indian Economy, Agricultural Policy. Agribusiness Management, Distinctive features, Importance of Good Management,

Types of Plans (Purpose or Mission, Goals or Objectives, Strategies, Polices, Procedures, rules, programmes, Budget) characteristics of sound plan, Steps in planning.

Organisation, Staffing, Directing, Motivation, Ordering, Leading, Supervision, Communication, control. Capital Management.

Financial Management of Agribusiness: Importance of Financial Statements, Balance sheet, Profit and Loss Statement, Analysis of Financial statements.

Agro-based Industries: Importance and Need, Classification of Industries, Types of Agro-based Industries, Institutional arrangement, Procedure to set up agro-based industries, Constraints in establishing agro-based industries.

Marketing Management: Meaning, Definitions, Marketing Mix, 4 P's of Marketing. Mix, Market segmentation, Methods of Market, Product life cycle.

Project, definitions, project cycle, Identification, Formulation, Appraisal, Implementation, Monitoring and evaluation, Appraisal and Evaluation techniques, NPW, BCR, IRR, N/K ratio, sensitivity analysis. Characteristics of agricultural projects: preparation of project reports for various activities in agriculture and allied sectors: Dairying, poultry, fisheries, agro-industries etc.

Practical:

Study of input markets: seed, fertilizers, pesticides. Study of output markets, grains, fruits, vegetables, flowers. Study of product markets, retail trade commodity trading, value added products. Study of financing institutions cooperatives commercial banks, RRB's, Agribusiness Finance Limited, NABARD; Preparations of projects, Feasibility reports; Project appraisal techniques; Case study of agro-based industries.

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