

#### **Unit-IV : (Extension Communication)**

Communication: Definition, meaning, nature, types and importance of communication, elements of communication, communication process, and communication models. Communication Channels: Definition, dimensions, classification, and nature of channels, selection of communication channels. Communication Approaches: basic principles and steps in teaching & learning in extension education, extension teaching methods, classification & factors involved in selection of appropriate methods, feature, advantages & limitations of different method of teaching (mass, group, individual). Audio-visual aids in communication, choice, planning, selection & types of visual aids, Audio aids & audio-visual aids, other teaching aids, contribution of audio-visual aids in extension teaching.

#### **Unit-V : (Textiles)**

Textile fibers : Classification of textile fibers, according to sources and chemical composition, manufacturing process - Cotton, Wool Silk, Rayon, Acrylic, Polyester. Fiber to Fabric: Construction yarn making process, types of yarns, fabric construction techniques. Weaving, parts of loom, types of weave and process of weaving. Fabric finishes (textural finishes, Functional finishes). Different types of dyeing and printing methods.

#### **Unit-VI : (Research Methodology)**

Trends in Research in Home Science. Types of Social Science Research. Selecting and defining a research problem. Research Design: Concept, need and features of a research design. Sampling design: Probability and non-probability sampling. Methods of data collection: Primary and secondary data collections. Classification and tabulation of data. Diagrammatical and graphical presentation of data. Analysis of data through parametric and non-parametric statistics. Report writing - interpretation, steps followed and layout of report writing.

## **Logic & Philosophy**

### **PAPER-I**

#### **Group-A : DEDUCTIVE LOGIC**

1. Truth and validity
2. Sentence and proposition
3. Classification of propositions
4. Seven-fold relation of proposition
5. Existential import of propositions
6. Immediate inference : conversion and obversion
7. Categorical syllogism: figure; mood; general syllogistic rules; special rules of different figures; Aristotle's dictum, direct and indirect reduction.
8. Mixed syllogism
9. Fallacies: logical and extra-logical

### **Group-B: INDUCTIVE LOGIC**

1. Nature, problem and procedure of induction
2. Induction and probable inference
3. Formal and material grounds of induction
4. Hypothesis
5. Methods of experimental enquiry
6. Scientific order, system and explanation

### **Group-C: SYMBOLIC LOGIC**

1. Logical form of arguments
2. The calculus of propositions
3. Predicate calculus
4. Algebra of classes
5. Logic of sets
6. Logic of relations

### **Group-D: LOGIC AND LANGUAGE**

1. Sign and symbol
2. Ambiguity
3. Vagueness
4. Definition
5. Concept and image
6. What is knowledge?
7. Analytic truth and logical possibility
8. A priori and a posteriori
9. The principles of logic

## **PAPER-II**

### **Group-A: MODERN EUROPEAN PHILOSOPHY**

1. Bacon
2. Descartes
3. Spinoza
4. Leibnitz
5. Locke
6. Berkeley
7. Hume
8. Kant

**(Metaphysics and Epistemology only)**

### **Group-B : INDIAN PHILOSOPHY**

1. Carvaka
2. Buddhism
3. Jainism
4. Samkhya

5. Yoga
6. Nyaya
7. Vaisesika
8. Mimamsa
9. Samkara Vedanta
10. Ramanuja Vedanta

**(Metaphysics and Epistemology only of all except Mimamsa; Epistemology only of Mimamsa)**

#### **Group-C: MORAL PHILOSOPHY (WESTERN)**

1. Utilitarian theories
2. Deontological theories
3. Virtue Ethics
4. Bio-medical ethics
5. Environmental ethics
6. Business Ethics

#### **Group-D: MORAL PHILOSOPHY (INDIAN)**

1. Ethics of the Upanisads
2. Buddhist ethics
3. Jaina ethics
4. Purusarthas
5. Doctrine of karma
6. Karmayoga of the Bhagavadgita

## **Mathematics**

### **PAPER - I**

#### **UNIT - I    ALGEBRA AND NUMBER THEORY**

Group Theory : Groups, Subgroups, Normal Subgroups and Quotient Groups, Homomorphisms and applications, Permutation groups, Conjugacy and Class equation, Simple group, Sylow Theorems.

Ring Theory : Rings, Special Classes of rings, Homomorphisms, Ideals and Quotient rings, Maximal and Prime ideals, Polynomial rings, Principal Ideal Domain, Unique Factorization Domain.

Field : Field of Quotients of an Integral Domain, Polynomials over the rational field, Algebraic Extension of Fields: Irreducible polynomials and Eisenstein Criterion, roots of Polynomial, Splitting field and its degree of extension, Multiple roots, Ruler and Compass Constructions, Symmetric function of roots, Solution of Cubic and Biquadratic Equations.

Number Theory : Integers, g.c.d., Fundamental Theorem of Arithmetic, Euclidean Algorithm, Arithmetical functions (Euler-function, Mobius function- ), Dirichlet multiplication, Linear Congruences, Euler-Fermat Theorem, Linear Diophantine Equations, Fermat's Theorem, Fermat Little Theorem, Polynomial Congruence, Lagrange's Theorem, Chinese Remainder Theorem, Wilson's Theorem and Applications.