

# HOME SCIENCE

## CORE COURSE 7: PHYSICAL SCIENCES (CREDITS: THEORY-4, PRACTICAL-2)

### SECTION A –CHEMISTRY

#### Unit 1 Solutions, acids and bases

Introduction to solute, solvent and solution  
Types of solutions, colloids and its classification and properties  
Definition of sols, gels and suspension and their properties  
Emulsions and its types  
Concept of acid, base and salt, pH and pH scale, buffer solution

#### Unit 2 Redox Reactions and household chemicals

Basic concept of oxidation and reduction  
Household chemicals;  
Chemicals in foods-preservatives and colourants  
Antiseptics and disinfectants  
Soaps and detergents

### SECTION –B: PHYSICS

#### Unit 3

- Measurements of Physical Quantities- Units and dimensions.
  - Different types of motions, Laws of motions
  - Gravity and Gravitation.
  - Work, Power, Energy, temperature (Basic concepts).
- Heat-transfer and modes

#### Unit 4:

- Light- Reflection, Refraction (Definition and Laws)
- Normal Vision, Defects of vision.
- Concept of current, voltage and resistance- Ohm's Law only.

### PRACTICAL

#### Section A: CHEMISTRY

1. Preparation of standard solutions
2. Determination of pH of different solutions
3. Volumetric analysis
  - a. Titration of strong acid vs strong base(Acid-base titration)

#### Section B: PHYSICS

1. Determination of the volume of the given body using Vernier Callipers.
2. Comparison of thermometric scales of temperature using graph method.
3. Determination of focal length of double convex lens by one pin method.