DISCRETE MATHEMATICS
Knowledge has Organizing Power

Theme 4
LOGIC
Knowledge has Organizing Power

LESSON 16
COMBINATORIAL CIRCUITS
Knowledge is for Action

Wholeness of the Lesson

The structure of Boolean algebra is used to design and implement logical circuits, the basic controlling structure of all microprocessors.
Science and Technology of Consciousness: The fundamental impulses of intelligence responsible for the entire manifest universe are found in the transcendental field of pure consciousness.

Main Points

1. Mathematical logic is incorporated into microprocessors by means of logical gates: OR, AND, NOT, etc., and combinations of these gates called combinatorial circuits. Combinatorial circuits are represented mathematically by Boolean functions.
   Science and Technology of Consciousness: The managing intelligence of nature is present in every grain of creation and in creation as a whole.

2. Combinatorial circuits for a given Boolean function can be constructed from the disjunctive normal form of the function and can be simplified using the laws of Boolean algebra and/or Karnaugh maps.
   Science and Technology of Consciousness: All aspects of life become simplified when one is functioning from the simplest form of awareness, pure consciousness, the home of all the laws of nature.

UNITY CHART
Connecting the Parts of Knowledge
with the Wholeness of Knowledge
Applying Boolean Algebra

1. Microprocessors, which control automatic machines, are designed to react to an input according to a preset logical pattern, which is structured into the microprocessor using electronic devices called logical gates.

2. Combinatorial circuits involving logical gates are modeled mathematically by Boolean expressions and simplified using the laws of Boolean algebra.

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3. In Transcendental Consciousness, one comes in full alliance with the Cosmic Mathematician, ritam bhara pragya, all-knowing intelligence.

4. **Impulses within the transcendental field:** Within the transcendental field reside all the Devas, natural laws, governing the entire manifest universe.

5. **Wholeness moving within itself:** In Unity Consciousness, one always functions from that level, as the Cosmic Mathematician, as the grand custodian of natural law. This is the supreme level of management of all of creation.