**LESSON 6**
**HOW TO FIND A SPANNING TREE IN A GRAPH**
*Transcending to the Simplest Level*

**Wholeness of the Lesson:** There are various algorithms for finding spanning trees, all of which are natural in some way. The most efficient way of locating the underlying structure of creation is to allow the awareness to settle down, naturally and spontaneously, to its simplest state in Maharishi's Transcendental Meditation.

**MAIN POINTS**

1. One way to find a spanning tree is to remove cycles one by one by deleting an edge of each. The complications in life are removed if we contact the simplest level of life, pure consciousness.

2. Two ways of asking a computer to find a spanning tree of a graph are the breadth first search, which gives a shortest path tree, and the depth first search. TM improves both the abilities of wide comprehension and sharp focus, enabling us to go deeply into a subject without losing sight of the whole.

**3.** In a weighted graph we may be looking for a minimal spanning tree or a maximal spanning tree. Kruskal's algorithm and Prim's algorithm give straightforward ways of finding these. Nature functions according to the principle of least action. By establishing our awareness in pure consciousness, the field of all possibilities, we function spontaneously using nature's principle of least action.

CONNECTING THE PARTS OF KNOWLEDGE
WITH THE WHOLENESS OF KNOWLEDGE
**HOW TO FIND A SPANNING TREE**

1. Within every connected graph is a spanning tree.

2. To find a spanning tree we can search in every direction at once (breadth first search) or we can search each direction one at a time, backing up when we reach the end of a branch (depth first search).

3. Transcendental Consciousness is experience of our simplest structure of consciousness, the blueprint of all of creation.

4. Impulses within the transcendental field: While stationed in that simplest structure of our own Transcendental Consciousness, Transcendental Consciousness is aware of itself and thus begins the first step in creating all of the manifest universe from within itself.

5. Wholeness moving within itself: In Unity Consciousness, we maintain our own simplest state of awareness, while aware that we are simply an expression of the wholeness of life. Grounded in the totality, we live life most simply, naturally, and successfully.