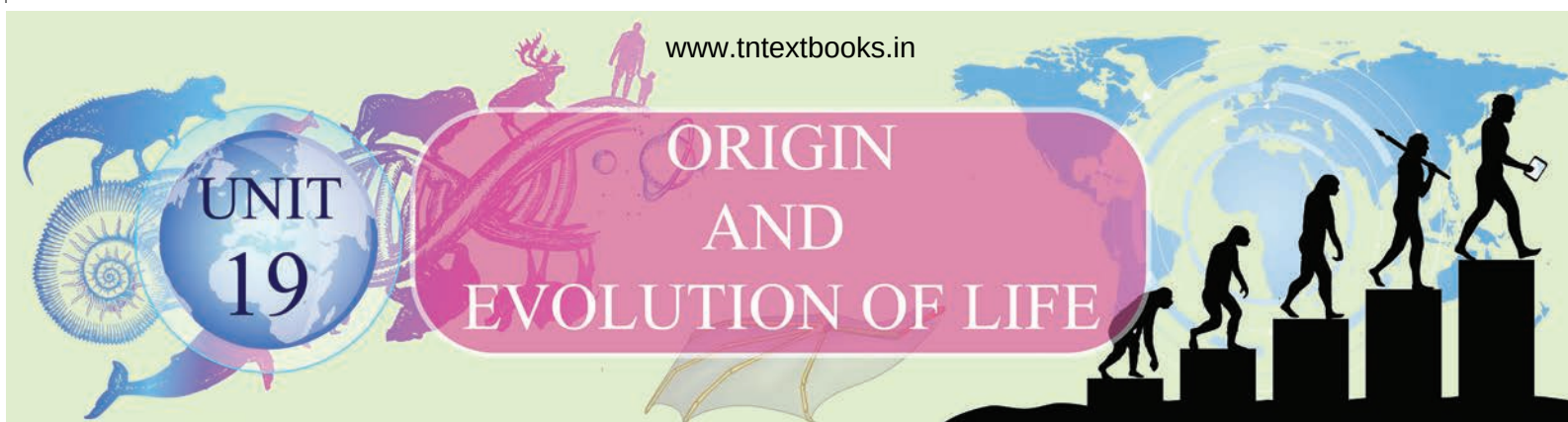




Learning Objectives



At the end of this lesson the students will be able to:

- ◆ Know about Big Bang theory on the origin of universe.
- ◆ Understand theories of origin of life.
- ◆ Discuss the process of evolution on the basis of the available evidences.
- ◆ Relate the principles of Lamarck and Darwin with evolution.
- ◆ Know how variation occurs and its significance.
- ◆ List the importance of fossils and describe the process of fossilization.
- ◆ Identify the plants of ethnobotanical importance.
- ◆ Realize about extraterrestrial life.

Introduction

Living organisms possess distinct characteristics, display organisational and functional unity, entail a mechanism of origin and evolution of diversities and maintain a balanced relationship with nature. Most aspects of evolution indicate that the knowledge of the past has become essential for fully understanding the present. Life since its beginning on earth had changed through time. The history of life comprises of two aspects, one is the origin of life on earth and the other is mechanism involved in the gradual changes and adaptations of living organisms through time which is known as the evolution of life.

Origin of Earth: Origin of life is linked with the origin of earth. The **Big Bang theory** explains the **Origin of Universe**. It proposes that the universe had an explosive beginning

(Big Bang) and originated 15 billion years ago. The universe comprised of stars, clouds of gas and dust which form the galaxies. The solar system was probably created when the gaseous clouds started to collapse due to the force of its own gravity forming atoms and particles. Atoms, dust grains and gaseous disc aggregated to form clumps and gave rise to planets. This forms the solar system of the milky way galaxy. Earth was supposed to have been formed about 4.5 billion years back. Life appeared 500 million years after the formation of earth.

19.1 Theories on Origin of Life

Many theories have been postulated to explain the origin of life. The views on the origin of life has been put forth as

Special creation: This idea embodies that life on Earth is a divine creation and also

