

INDEX

| Sr. | CHAPTER | Pg. No |
|------------|--|---------------|
| 1 | ORIGIN OF EARTH | 1 |
| 2 | GEOMORPHOLOGY | 16 |
| 3 | INDIA: GEOLOGICAL STRUCTURE AND PHYSIOGRAPHY | 40 |
| 4 | COMPOSITION AND STRUCTURE OF ATMOSPHERE | 53 |
| 5 | ATMOSPHERIC PRESSURE AND AIR CIRCULATION | 59 |
| 6 | WATER IN THE ATMOSPHERE | 67 |
| 7 | WORLD CLIMATE REGIONS | 74 |
| 8 | OCEANOGRAPHY | 83 |
| 9 | INDIAN CLIMATE | 99 |
| 10 | DRAINAGE SYSTEMS AND PATTERNS | 115 |
| 11 | SOILS | 127 |
| 12 | NATURAL VEGETATION | 133 |
| 13 | HUMAN SETTLEMENT | 139 |
| 14 | INDIA - POPULATION | 141 |
| 15 | INDIA - LAND RESOURCES | 146 |
| 16 | AGRICULTURE | 148 |
| 17 | INDUSTRY | 153 |
| 18 | WATER RESOURCES | 156 |
| 19 | MINERAL RESOURCES | 158 |
| 20 | TRANSPORT AND COMMUNICATIONS | 161 |
| 21 | CONTINENTS | 164 |

CH.1 ORIGIN OF EARTH

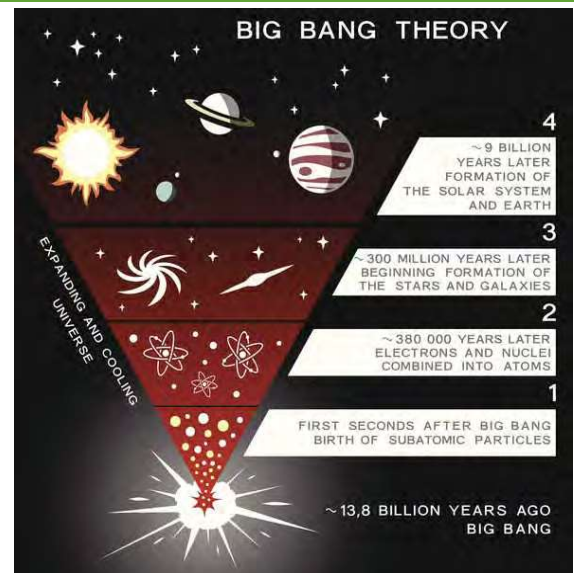
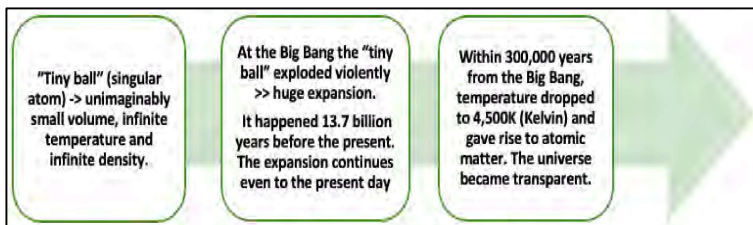
EARLY THEORIES

| THEORY | BY | DETAILS |
|--------------------------------|---|--|
| Nebular Hypothesis | <ul style="list-style-type: none"> By German philosopher Immanuel Kant. Mathematician Laplace revised it in 1796. | <ul style="list-style-type: none"> The hypothesis considered that the planets were formed out of a cloud of material associated with a youthful sun, which was slowly rotating. |
| | <ul style="list-style-type: none"> Again in 1950 somewhat revised by Otto Schmidt in Russia and Carl Weizsacar in Germany. | <ul style="list-style-type: none"> They considered that the sun was surrounded by solar nebula containing mostly the hydrogen and helium along with what may be termed as dust. The friction and collision of particles led to formation of a disk-shaped cloud and the planets were formed through the process of accretion. |
| Planetesimal hypothesis | <ul style="list-style-type: none"> 1900, Chamberlain and Moulton Supported by- Sir James Jeans and later Sir Harold Jeffrey | <ul style="list-style-type: none"> Considered that a wandering star approached the sun. As a result, a cigar-shaped extension of material was separated from the solar surface. As the passing star moved away, the material separated from the solar surface continued to revolve around the sun and it slowly condensed into planets. |

MODERN THEORIES:

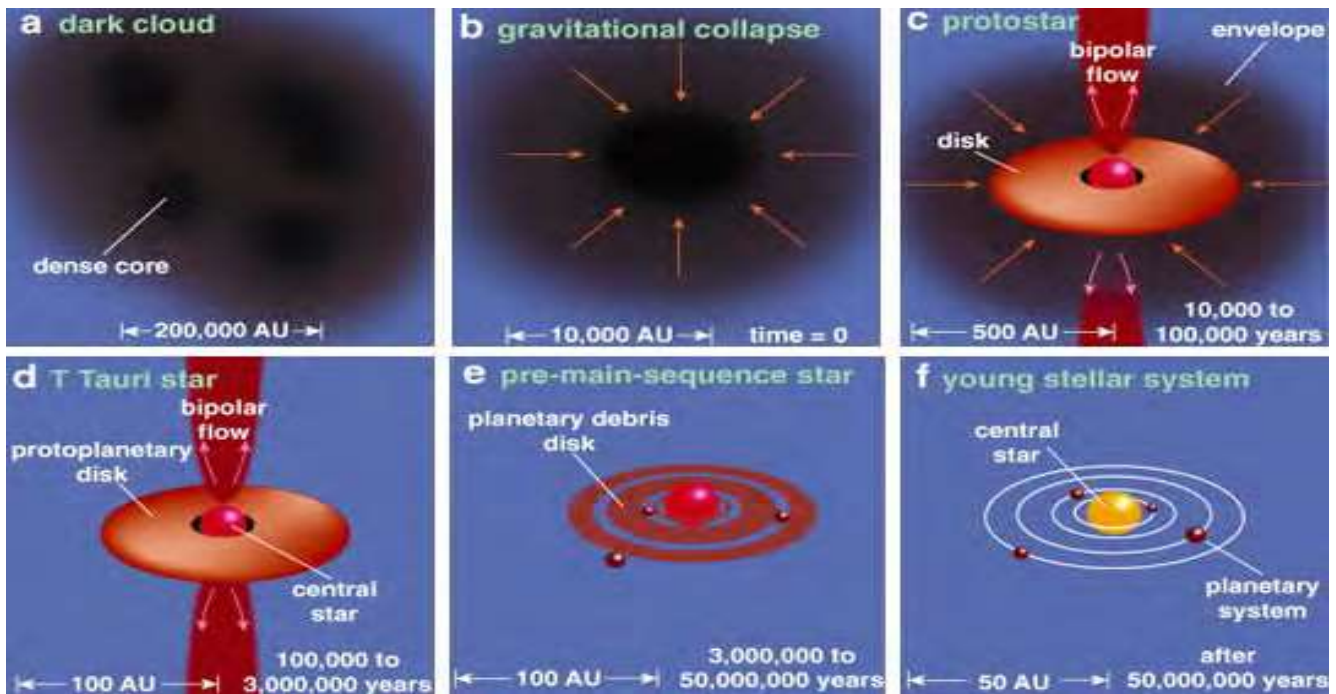
BIG BANG THEORY:

- Also called **Expanding Universe Hypothesis**.
- This theory was propounded by **Georges Lemaitre** in late 1920s.
- Edwin Hubble** → 1920, provided evidence that **the universe is expanding**.
- The expansion of universe means increase in space between the galaxies.
- As time passes, galaxies move further and further apart. The Big Bang Theory considers the following stages in the development of the universe:



STAR FORMATION:

- The distribution of matter and energy was not even in the early universe. These initial density differences in gravitational forces caused the matter to get drawn together.
- These formed the bases for development of galaxies. A galaxy contains a large number of stars.
- A galaxy starts to form by accumulation of hydrogen gas in the form of a very large cloud called **nebula**.
- Eventually, growing nebula develops localized clumps of gas.
- These clumps continue to grow into even denser gaseous bodies, giving rise to formation of stars.



FORMATION OF PLANETS

- The stars are localized lumps of gas within a nebula. The gravitational force within the lumps leads to the formation of a core to the gas cloud and a huge rotating disc of gas and dust develops around the gas core.
- **In the next stage**, the gas cloud starts getting condensed and the matter around the core develops into small rounded objects. These small-rounded objects by the process of cohesion develop into what is called planetesimals. Larger bodies start forming by collision, and gravitational attraction causes the material to stick together. Planetesimals are a large number of smaller bodies.
- **In the final stage**, these large number of small planetesimals accrete to form a fewer large bodies in the form of planets.

OUR SOLAR SYSTEM

- Our solar system consists of the **sun (the star)**, **8 planets**, 63 moons, millions of smaller bodies like asteroids and comets and huge quantity of dust-grains and gases.
- The **Sun is the central star** of our solar system. There are eight planets in our solar system: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune (**My Very Efficient Mother Just Served Us Nuts!!**)
- Mercury is the smallest and the nearest planet to the Sun.
- **Venus** is considered as '**Earth's-twin**' because its size and shape are very much similar to that of the earth. It is probably the hottest planet because its atmosphere contains 90-95% of carbon dioxide with clouds of Sulphuric acid.

