

Q Briefly describe what is big bang Theory?

## Big Bang Theory

It is a theory about the beginning of the universe in which we are living currently. According to this theory, the universe was packed inside a small bubble that was like a pinhead. The bubble was called Singularity. Then after some time that bubble exploded completely and our universe got a present shape after evolving from different phases.

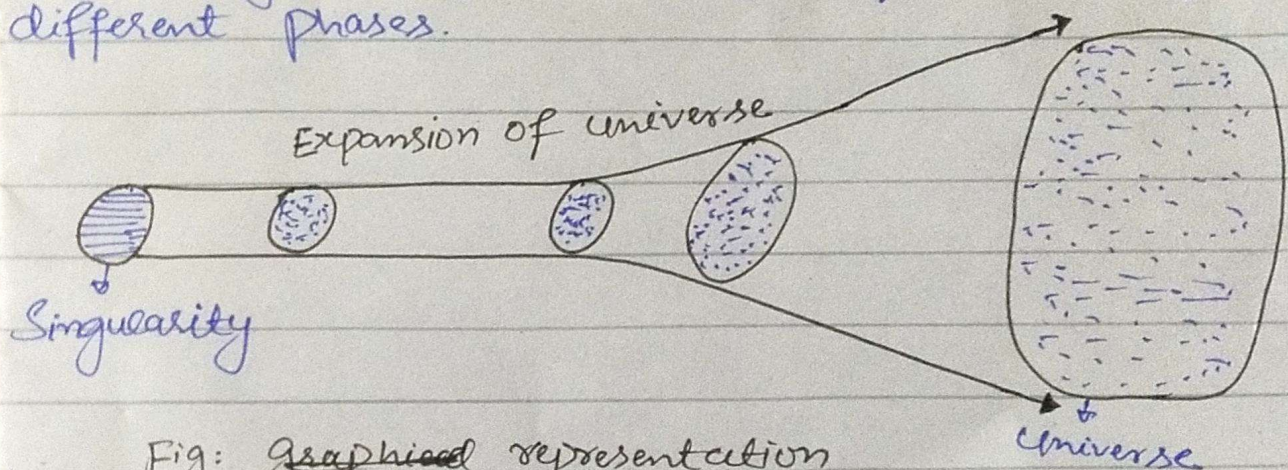


Fig: Graphical representation of Big Bang Theory

After explosion the temperature of the universe began to cool down. The matter and antimatter prevailed after the explosion. These opposite particles destroyed each other yet some of them survived.

## Explosion

↓  
Matter (destroyed each other)

↓  
Antimatter

The survived particles formed neutron and proton. After 300000 years, the temperature of the universe cooled down. The gases such as helium and hydrogen emerged and started to form celestial bodies.

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Q Explain the terms Dark energy and Dark matter?

### Dark Energy

The far present galaxies are moving away further and come under red shift while the near galaxies do not move away and cause the expansion of universe. The energy which restrains galaxies to move away from each other is dark energy. It is intrinsically present in empty space.

### Dark Matter

The observable matter is not enough for the motion of galaxies because it does not produce much gravity required for the motion of galaxies. The force that provide gravity to galaxy to move is known as dark matter.

### Difference between Dark matter and Dark energy

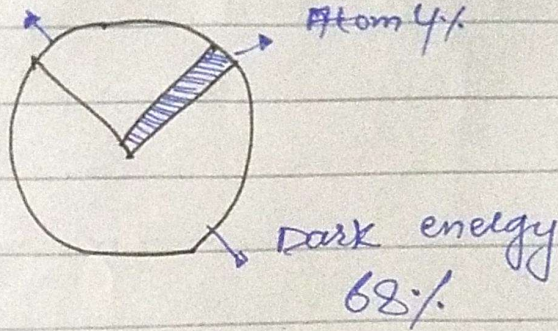
#### Dark Energy

- produce repulsive force
- move galaxies far
- present intrinsically

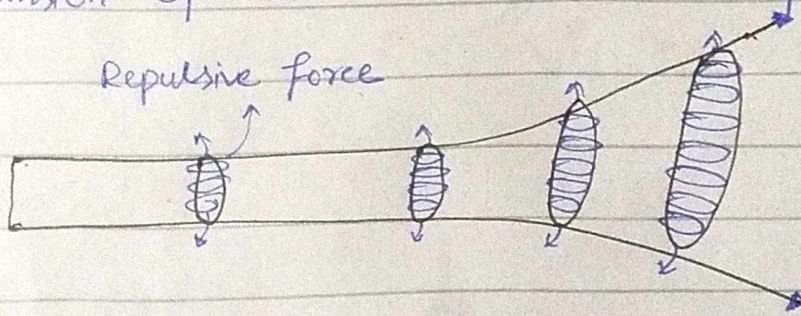
#### Dark Matter

- produce gravitational force
- Hold galaxies
- Non-luminous

Dark matter  
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Dark energy pushes galaxies far and cause expansion of the universe with repulsive force



Dark Matter holds galaxies with gravitational force

