

**Q) Is our Universe an open system or a closed system?**

**Answer:**

*A Thermodynamic System.*

*Definition:-*

*A thermodynamic system is a quantity of matter of fixed identity, around which we can draw a boundary. [<http://web.mit.edu/16.unified/http://www.FALL/thermodynamics/notes/node11.html>].*

Since we can't draw a boundary around our universe, the question in this context becomes invalid. The above answer is for all 12th standard students' academic purposes. But there is a case in which we could stretch our imagination and make sense of this question.

Kindly note this is not for academic purpose as it hasn't yet been proved and is still in postulate form. This is for the sake of kindling curiosity in young minds, which also happens to be a part of a teacher's duty. Hugh Everett hypothesized a Multi-World Interpretation [MWI] of quantum mechanics. It states superficially that-Our universe is not the only universe. There exist simultaneously many other universes. Here we could state our universe to have an infinite boundary with other parallel universe. PLEASE NOTE: - Between these parallel universes nothing can be transferred, neither mass nor energy nor information. Thus in this and ONLY in this hypothetical context we could call OUR Universe as a 'Super Isolated System'. Neither open nor closed.