Syllabus for Heliodyssey 2019 (For College Students)

Syllabus for Space HeliOdyssey Test 2019 for college students is a culmination of the syllabus of topics like general science, geography, general maths, astronomy and astrophysics till class 8th as taught In the Indian Education System. Selected topics from class 9th and 10th are also included as follows:

❖ **For college students:**

- **General Science****
  - Atoms, Molecules and Matter, Elements and Compounds, Cells, Tissue, Organs, Organ System, Organism, Biological Diversity, Health and Diseases, Motion, Force, Work, Energy, Power, Newton's Laws of Motion, Sound, Gravity, Sources of Energy, Bio-Geo-Chemical cycles in nature.
  - Chemical Reactions, Acid, Bases, Salt, Metals, Non-metals, Organic (Carbon) Compounds, Periodic classification of elements, Reproduction, Heredity and Evolution, Control and coordination in elements and plants. Reflection, Refraction, Dispersion, Scattering, Lenses, Mirrors, Pendulum, Strings, Simple Machines, Current, Magnetism, Electromagnetism, Energy and its sources.

- **General Maths****
  - Real numbers, Mensration- Area, Surface Area and Volume, Polynomials, Linear Equation in Two Variables, Coordinate Geometry, Lines and Angles, Triangles, Circles, Quadilaterals, Construction of figures, Statistics and Probability.
  - Pair of Linear Equations in Two Variables, Quadratic equations, Trigonometry, Arithmetic Progression, Lines (in 2-D), Heights and Distances, Work and Time, Speed, Distance and Time.
- **General Knowledge**
  - Current affairs related to astronomy and space science, important dates in space exploration and astronomy

- **Geography**
  - India – Size and Location, Physical Features of India – Relief, Structure, Major Physiographic Unit, Drainage – Major Rivers and Tributaries, Lakes, Seasons, Soil and its classification, Major crops and Cropping Pattern, Minerals, Conventional and Non-Conventional Energy Resources, Natural Vegetation and Wildlife, Climate, Conservation of Resources, Population and the crisis.

- **Astronomy and Space Science**

  - Solar System, Names and Distances
  - Astronomical Facts
  - Structure of Sun
  - Sun's apparent motion in the sky
  - Eclipses, geometry of earth, sun and moon.
  - Sun, its formation, characteristics, solar energy etc.
  - Life cycle of stars
  - Directions, Conventions and their basic understanding
  - Coordinate systems in Astronomy
  - Time and idea of time keeping.
  - Galaxies
  - Comets, Asteroids & Meteors
  - Important Discoveries and Invention
  - Instruments and astronomical accessories
  - Constellations, galaxies, nebulae and their classification (structure and composition)
  - Basic of night sky observation
  - Birth and evolution of Universe
  - Myth Busting

- **Space Missions and ISS**

  - Read about the main missions launched by space agencies like ISRO, NASA, ESA, JAXA etc. Include rocket launches, shuttle missions, planetary missions, lunar missions, space telescope missions, missions to Moons of other planets, and missions beyond the solar system.

- **Astronomers and Astronauts**

  - Neil Armstrong, Kalpana Chawla, Sunita Williams, Yuri Gagarin, Galileo Galilei, Sallyride, Nicolaus Copernicus, Ptolemy, Edwin Hubble, Issac Newton, Albert Einstein, Charles Messier, Subrahmanyan Chandrasekhar, Johannes Kepler, Tycho Brahe, Christiaan Huygens, William Herschel, Stephan Hawking, Vainu Bappu.

Note: In case of Famous Astronomers and Astronauts, questions will be related to the names given in list only.

** For detailed syllabus of General Science and Mathematics, refer to Syllabus prescribed for Science and Maths by NCERT for class 09^{th} and 10^{th}. Syllabus of NCERT can be downloaded from: http://www.ncert.nic.in/rightside/links/pdf/syllabus/vol1_el.zip