

Science & Technology -Study Plan

Students shall read the NCERTs for covering the basics. Then, focus on the special topics listed in the study plan.

[Test Date :04/01/2019]

Syllabus-Science and Technology

Primary Source:

- NCERT Class- VI – Class X
- NCERT Class - XI - Biology
 - Unit 1 - DIVERSITY IN THE LIVING WORLD
 - Unit 3 - CELL: STRUCTURE AND FUNCTIONS
 - Unit 5 - HUMAN PHYSIOLOGY
- NCERT Class - XII - Biology
 - Unit 7 - GENETICS AND EVOLUTION
 - Unit 8 - BIOLOGY IN HUMAN WELFARE
 - Unit 9 - BIOTECHNOLOGY

Additional Reference: Officers IAS Academy Materials, Internet.

Focus areas

1. Space Technology:
 - a. Indian Space Programme
 - b. Rocket Engines & Propellants
 - c. Evolution of Indian Launch Vehicles
 - d. Space Orbits and Space Satellites
 - e. Indian Human Space Flight Programme
 - f. Indian contribution in Space Exploration (Space Observatories, Missions to Moon, Mars & Sun)
 - g. Some other key topics: Dark Matter, Gravitational Waves
2. Computer and Robotics:
 - a. Supercomputers
 - b. Net Neutrality
 - c. Artificial Intelligence

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(IAS Academy by IAS Officers)

- d. Machine Learning
 - e. Blockchain Technology
 - f. Internet of Things
 - g. Malware Types: Virus, Worm, Trojan, Ransomware etc.
3. Biotechnology & Nanotechnology:
- a. DNA, Gene, Gene Expression, Chromosome, Genome
 - b. DNA sequencing, DNA fingerprinting, DNA barcoding
 - c. Gene editing techniques (esp. CRISPR-Cas9)
 - d. Genomics, Human Genome Project, India's Gene Sequencing Mission
 - e. Genetically Modified Organisms. (Bt. Brinjal, Bt. Cotton, GM Mustard)
 - f. Applications of Genetic engineering in conservation of plants and animals.
 - g. Applications of Genetic engineering in personalized medicine, correcting genetic disorders, and treating diseases.
4. Health
- a. Predominant communicable and non-communicable diseases in India
 - b. Antibiotics and Antibiotic resistance
 - c. NFHS and the problems in Public health
 - d. Ayushman Bharat & Other National Health Initiatives.