



Consistency. Right Direction. Discipline.

SCIENCE and TECHNOLOGY PRELIMS PYQs

THEMES AND KEYWORDS



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AIR 587 – CSE 2023

UPSC PRELIMS (2015–2025)

SCIENCE & TECHNOLOGY – PYQ-WISE KEYWORD MAPPING

2025 (LATEST – HIGH SIGNAL YEAR)

Biology / Microbiology

- Viruses
- DNA viruses vs RNA viruses
- Bacteriophages
- Genetic material in viruses

Energy & Transport Technology

- Full Battery Electric Vehicles (BEVs)
- Hydrogen fuel cell vehicles
- Fuel cell–electric hybrid vehicles
- Alternative powertrains
- Decarbonisation of transport

Aerial / Defence Tech

- UAVs (Unmanned Aerial Vehicles)

Nature: Basic concepts + application-based statement questions

2024

Biotechnology & Health

- mRNA vaccines
- Viral vector vaccines
- Antimicrobial resistance (AMR)
- Probiotics / Human microbiome

Space Science

- Lagrange Points
- Aditya-L1
- Solar wind
- Coronal Mass Ejection (CME)

Emerging Tech

- Quantum computing
- Qubits
- Artificial Intelligence (AI)

2023

Biotechnology

- CRISPR-Cas9
- DNA vs RNA
- Stem cells
- Gene therapy

Environment + Tech

- Microplastics
- Bio-remediation
- Carbon Capture and Storage (CCS)

Materials Science

- Graphene
- Nanomaterials

2022

Health & Disease

- Zoonotic diseases
- Herd immunity
- Monoclonal antibodies

Space

- James Webb Space Telescope
- Exoplanets

Energy

- Hydrogen fuel cells
- Green hydrogen

2021

Biotechnology

- Recombinant DNA technology
- Plasmids
- GM crops (Bt cotton)

IT & Digital Tech

- Blockchain
- Cryptography

Defence Tech

- Hypersonic missiles
- MIRV

2020

Health

- RT-PCR
- Antigen vs Antibody
- Pandemic vs Epidemic

Physics

- Lasers
- Semiconductor devices

Environment

- Aerosols
- Ozone depletion

2019

Biotechnology

- Human Genome Project
- DNA fingerprinting
- Cloning

Space

- Chandrayaan-2
- Orbital velocity

Chemistry

- Polymers
- Biodegradable plastics

2018

IT & Emerging Tech

- Internet of Things (IoT)
- Cloud computing
- Big Data

Energy

- Biofuels (1G, 2G)
- Ethanol blending

Physics

- Superconductivity

2017

Biotechnology

- Stem cell research
- Induced Pluripotent Stem Cells (iPSCs)

Environment + Tech

- Remote sensing
- GIS

Defence

- Ballistic missiles vs Cruise missiles

2016

Biotechnology

- GM organisms
- Transgenic plants

Space

- Polar satellites
- Geostationary satellites

Chemistry

- Green chemistry
- Catalysts

2015

Health

- Antibiotic resistance
- Vaccination

Physics

- Nuclear fission
- Nuclear fusion

Environment

- Bio-fertilizers
- Bio-pesticides

MOST REPEATED / CORE UPSC KEYWORDS (2015–2025)

Biotech

- DNA / RNA
- CRISPR
- Stem cells

- Vaccines
- GM crops

Space

- Satellites & orbits
- Solar phenomena
- Space missions (ISRO focus)

Energy

- Hydrogen
- Fuel cells
- Biofuels
- EV technology

Emerging Tech

- AI
- Quantum computing
- Blockchain
- Nanotechnology

Environment-linked Tech

- Microplastics
- CCS
- Bio-remediation