

Political Science

Politics in India Since Independence

1. **The Era of One-Party Dominance:** First Three General Elections; Nature of Congress Dominance at the National Level; Uneven Dominance at the State Level, Coalitional Nature of Congress; Major Opposition Parties
2. **Nation-Building and Its Problems:** Nehru's approach to Nation-building; Legacy of Partition; The Challenge of 'Refugee' Resettlement; The Kashmir Problem; Organisation and Reorganisation of States; Political Conflicts Over Language
3. **Politics of Planned Development:** Five-year plans; Expansion of State Sector; The Rise of New Economic Interests; Famine and Suspension of Five-year Plans; Green Revolution and its Political Fallouts
4. **India's External Relations:** Nehru's Foreign Policy; Sino-Indian War of 1962; Indo-Pak War of 1965 and 1971; India's Nuclear Programme and Shifting Alliances in World Politics
5. **Challenge to and Restoration of Congress System:** Political succession after Nehru; Non-Congressism and Electoral Upset of 1967; Congress Split and Reconstitution; Congress' Victory in 1971 Elections; Politics of 'Garibi Hatao'
6. **Crisis of the Constitutional Order:** Search for 'Committed' Bureaucracy and Judiciary; Navnirman Movement in Gujarat and the Bihar movement; Emergency: Context, Constitutional and Extra-constitutional Dimensions; Resistance to Emergency; 1977 Elections and the Formation of the Janata Party; Rise of Civil Liberties Organisations
7. **Regional Aspirations and Conflicts:** Rise of Regional Parties; Punjab Crisis and the Anti-Sikh Riots of 1984; The Kashmir situation. Challenges and responses in the North East
8. **Rise of New Social Movements:** Farmers' Movements; Women's movements, Environment and Development-affected people's movements; Implementation of Mandal Commission report and its aftermath
9. **Democratic Upsurge and Coalition Politics:** Participatory Upsurge in the 1990s; Rise of the JD and the BJP; The Increasing Role of Regional Parties and Coalition Politics; UF and NDA governments; Elections 2004 and the UPA government
10. **Recent Issues and Challenges: Challenge of and Responses to Globalisation:** New Economic Policy and its Opposition; Rise of OBCs in North Indian politics; Dalit politics in the Electoral and Non-electoral Arena; Challenge of Communalism; Ayodhya Dispute; Gujarat Riots

- Wave Optics: Wave Front and Huygens' Principle, Reflection, and Refraction of Plane Wave at a Plane Surface Using Wave Fronts
- Proof of Laws of Reflection and Refraction Using Huygens' Principle
- Interference, Young's Double Hole Experiment and Expression for Fringe Width, Coherent Sources, and Sustained Interference of Light
- Diffraction Due to a Single Slit, Width of Central Maximum
- Resolving the Power of Microscopes and Astronomical Telescopes. Polarization, Plane Polarized Light; Brewster's Law, Uses of Plane Polarized Light and Polaroids

Unit VII: Dual Nature of Matter and Radiation

- Photoelectric Effect, Hertz and Lenard's Observations; Einstein's Photoelectric Equation – Particle Nature of Light.
- Matter Waves – Wave Nature of Particles, de Broglie Relation. Davisson-Germer Experiment (Experimental Details Should Be Omitted; Only the Conclusion Should Be Explained.)

Unit VIII: Atoms and Nuclei

- Alpha - Particle Scattering Experiment; Rutherford's Model of Atom; Bohr Model, Energy Levels, Hydrogen Spectrum. Composition and Size of Nucleus, Atomic Masses, Isotopes, Isobars; Isotones.
- Radioactivity – Alpha, Beta, and Gamma Particles/Rays, and Their Properties; Radioactive Decay Law. Mass-Energy Relation, Mass Defect; Binding Energy per Nucleon and Its Variation With Mass Number; Nuclear Fission and Fusion.

Unit IX: Electronic Devices

- Energy Bands in Solids (Qualitative Ideas Only), Conductors, Insulators, and Semiconductors; Semiconductor Diode – I-v Characteristics in Forward and Reverse Bias, Diode as a Rectifier; I-V Characteristics of Led, Photodiode, Solar Cell, and Zener Diode; Zener Diode as a Voltage Regulator. Junction Transistor, Transistor Action, Characteristics of a Transistor; Transistor as an Amplifier (Common Emitter Configuration) and Oscillator. Logic Gates (Or, and, Not, Nand and Nor). Transistor as a Switch

Unit X: Communication Systems

- Elements of a Communication System (Block Diagram Only); Bandwidth of Signals (Speech, TV, and Digital Data); Bandwidth of Transmission Medium. Propagation of Electromagnetic Waves in the Atmosphere, Sky, and Space Wave Propagation. Need for Modulation. Production and Detection of an Amplitude-Modulated Wave