Part I: Topic-Wise Notes for UPSC Current Affairs

Module 1: Polity & Governance – Electoral Reforms, SIR & Voter Roll Discrepancies

(GS Paper II: Salient features of the Representation of the People Act; Electoral Reforms)

1.1 Special Intensive Revision (SIR) & Roll Management

Definition: Special Intensive Revision (SIR) is a time-bound, house-to-house physical verification conducted by **Booth Level Officers (BLOs)** to verify every elector entry on the electoral roll. Unlike routine annual summary revisions, SIR requires in-person door-to-door verification.

Constitutional & Statutory Basis:

Article 324: Grants superintendence, direction, and control of electoral rolls to the Election Commission of India (ECI).

Article 327: Empowers Parliament to make provisions regarding elections and electoral roll preparation.

Section 21 of the Representation of the People Act (RPA), 1950: Authorizes the ECI to order a special revision of electoral rolls for reasons recorded in writing.

Registration of Electors Rules, 1960: Governs procedures for house-to-house enumeration and verification.

1.2 Statutory Roll Authorities vs. Judicial Appellate Bodies

Designated Keyholders under RPA, 1950: The RPA, 1950 names strictly four roll authorities: **Chief Electoral Officer (CEO)**, **District Election Officer (DEO)**, **Electoral Registration Officer (ERO)**, and **Assistant Electoral Registration Officer (AERO)**.

The Legal Dilemma (West Bengal Case):

Following judicial review of ~60 lakh "doubtful and pending" voter cases, ~32.77 lakh voters were cleared by judicial officers.

The Supreme Court ordered a temporary appellate body mechanism.

The ECI filed appeals against 16.10 lakh cleared voters. However, the filers were described merely as "officers of the office of CEO West Bengal", whose locus standi under RPA, 1950 remains legally questionable as the Act names no tribunals.

1.3 Deletion Mechanism: Form 7 & Procedural Safeguards

Function of Form 7: Form 7 acts as an objection to a proposed inclusion or an application for deletion of an existing entry. It functions purely as a complaint and does **not** automatically remove any name.

Mandatory Safeguard: Under the Registration of Electors Rules, 1960, an **ERO must conduct a formal hearing and pass a reasoned order** before deleting any name.

Mass Misuse Allegations: In Uttar Pradesh, petitioners alleged bulk filings of Form 7s targeting specific communities with false details or forged signatures.

Penal Provision: Section 31 of RPA, 1950 prescribes penal consequences for making false declarations or fraudulent objections in connection with electoral roll revisions.

SC Ruling on Ongoing Revisions: The Supreme Court affirmed that roll correction is a "continuing process", allowing left-out legitimate electors to seek inclusion via representations to the ECI even after deadlines expire.

Module 2: Social Justice & Economy – World Bank Data on Poverty in India

(GS Paper II: Issues relating to poverty and hunger | GS Paper III: Inclusive Growth)

2.1 World Bank Poverty Estimations (2023 Update)

Extreme Poverty Line ($3/day PPP): Defined as living on less than **$3 a day in 2021 Purchasing Power Parity (PPP)** terms.

Trend: India's extreme poverty rate **halved to 2.6% in 2023** (from 5.3% in 2022–23 and 27.1% in 2011).

Absolute Impact: Lifted ~496 million people out of poverty across various lines since 2011.

Lower Middle-Income Line ($4.2/day PPP): Standard line for lower middle-income countries like India.

Fell from **57.7% in 2011** to **23.9% in 2022–23** and **16.1% in 2023**.

Urban rate stands at 8.6%, whereas rural rate stands at 19.3%.

Upper Middle-Income Line ($8.3/day PPP): 80% of India's population lived below this threshold in 2023 (down from >90% in 2011).

2.2 Inequality & Structural Challenges

Consumption Inequality (Gini Index): Improved to **23.0 in 2023** (from 28.8 in 2011–12 and 25.5 in 2022–23).

Wage Polarization: Median earnings of the top 10% highest-paid workers are approximately **13 times** those of the lowest 10%. Real wages have stagnated due to low-productivity job creation.

Geographical Concentration: ~57% of India's poor are concentrated in the belt extending from Uttar Pradesh to West Bengal.

Youth Unemployment: Youth unemployment increased slightly from **14.6% to 15.9%** year-on-year.

2.3 Multidimensional Poverty Index (MPI)

Concept: Measures non-income deprivations across health, education, and living standards (developed by OPHI and UNDP).

Decline: India's MPI headcount ratio fell from **53.8% (2005–06)** to **16.4% (2019–21)**.

Module 3: Environment & Energy – Biofuels, E100, and Energy Security

(GS Paper III: Infrastructure: Energy; Environmental Conservation)

3.1 Ethanol Blending: E20 vs. E100

Regulatory Change: Central Motor Vehicles Rules, 1989 were amended to permit vehicles to operate on **E100 (100% pure ethanol)**.

Energy Density Disparity: A 20% ethanol blend (E20) reduces petrol consumption by **~15.56%** (not 20%), because ethanol contains less energy per litre than petrol, reducing overall fuel efficiency.

3.2 The Refining & Demand Asymmetry (The Diesel Paradox)

Refining Output Yield: A standard barrel of crude yields only **15–18% petrol**, whereas **diesel accounts for 44–45%**.

Consumption Ratio: India consumes **~2.5 times as much diesel as petrol** (~503 million tonnes of diesel vs. 200 million tonnes of petrol between FY21 and FY25).

Core Takeaway: Because petrol represents under one-fifth of refinery yield, reducing petrol consumption via ethanol blending does **not** proportionally reduce crude oil imports unless diesel demand is also addressed through biodiesel or alternative fuels.

3.3 Concerns & Policy Framework

Food vs. Fuel Friction: Meeting the 2025–26 ethanol targets requires ~275 million tonnes of sugarcane alongside substantial maize and rice diversion. Disrupted feed supplies (e.g., DDGS byproduct) impact soybean meal pricing.

Subsidized Grain Allocation: Government allocated FCI rice at ₹22.5/kg for ethanol distillation against an economic cost of ₹42/kg, effectively using food subsidies for fuel.

Key Biofuel Initiatives:

National Policy on Biofuels: Categorizes 4 generations of biofuels (1G edible crops to 4G advanced synthetic fuels).

PM JI-VAN Yojana: Financial support for 2G ethanol plants utilizing agricultural stubble/crop residues.

SATAT Initiative: Promotes Compressed Bio-Gas (CBG) from agricultural waste, targeting 5,000 plants.

Ethanol Interest Subvention Scheme: Offers 6% interest subvention soft loans for distillery capacity expansion.

Module 4: Science & Technology / Defence – AI Transformation of Military Complex

(GS Paper III: Awareness in IT, Robotics, AI, and Defence Technologies)

4.1 Transition to "Software-Defined Warfare"

Shift from Traditional Primes to "Neo-Primes": The traditional defence manufacturing model dominated by hardware giants ("Big Three": Lockheed Martin, RTX, Northrop Grumman) using cost-plus contracts is shifting toward software/AI firms ("Neo-Primes": Palantir, Anduril, SpaceX) operating on fixed-price contracts.

War Economics Inversion: Traditional air defence systems firing multi-million dollar interceptor missiles against $10,000 attack drones create a unsustainable cost exchange ratio.

Defence Autonomous Warfare Group (DAWG): Replaced the Replicator Initiative to deploy thousands of low-cost, uncrewed autonomous systems; budget projected to jump from $225.9M (FY26) to $54.6B (FY27).

4.2 Military AI Tech Stack Architecture

Brain Layer: Advanced AI models (e.g., OpenAI for multilingual intelligence, Google for satellite image targeting, Reflection AI for autonomous combat agents).

Compute & Cloud Layer: Nvidia GPU clusters hosted on Microsoft, AWS, and Oracle military clouds.

Communications & Edge Layer: SpaceX (Starlink/Starshield) combined with Palantir (Maven Smart System) and Anduril for edge AI, drone swarms, and counter-drone operations.

4.3 Drone Swarms & Vulnerabilities

Characteristics: AI-enabled swarms communicate autonomously between nodes to coordinate saturation attacks.

Counters: Electronic warfare jammers, GPS spoofing, radar detection, and directed-energy lasers.

Governance Risks: Traditional hardware-focused testing systems fail to validate continuously updated AI software, creating single points of failure and software verification gaps.

Module 5: Governance & Labour Reforms – Code on Social Security, 2020

(GS Paper II: Government Policies & Federal Issues | GS Paper III: Employment & Labour Market)

5.1 Statutory Welfare Architecture

Legislative Consolidation: The Code on Social Security, 2020 consolidates **nine central labour laws** into a single framework.

Gig & Platform Worker Recognition: Provides statutory recognition to gig and platform workers operating outside traditional employer-employee **relationships.**

5.2 Board Composition & Federal Controversies

Board Structures:

Unorganised Workers Board: 40 members (7 worker and 7 employer representatives).

Gig and Platform Workers Board: 22 members (5 aggregator and 5 worker representatives).

Centralization & Federal Concerns:

Both national boards are chaired by the **Union Labour Minister** with the Union Labour Secretary as Vice-Chairman.

Federal Issue: Labour falls under the **Concurrent List (List III)**. However, state representation on national boards has been limited to select NDA-ruled states (Maharashtra, UP, WB, AP, Gujarat), excluding Opposition-ruled states.

Trade Union Exclusion: Major Central Trade Unions (e.g., CITU, AITUC) lack representation, with union seats allocated primarily to Bharatiya Mazdoor Sangh (BMS).

5.3 Expert Recommendations

ILO Compliance: ILO defines social security as guaranteed protection for healthcare, old age, sickness, unemployment, and maternity. Over 92% of India's unorganised workforce remains outside comprehensive ILO coverage.

Unaddressed Expert Reports:

Arjun Sengupta Commission (NCEUS): Recommended universal basic social security entitlements for unorganised sector workers.

Justice V. Gopala Gowda Report (2026): Highlighted anti-federal provisions in the code and urged amendments to safeguard state autonomy and worker rights.

Module 6: Polity & Civil Society – Civil Unrest & Pressure Groups

(GS Paper II: Role of NGOs, Pressure Groups, and Development Processes)

6.1 Protests as "Revolts of the Powerless"

Concept ("Estallidos Sociales"): Widespread global protests reflect a crisis of popular consent where citizens feel devoid of institutional influence over economic inequality, corruption, climate policy, and surveillance state expansion.

Hyperpolitics: Term coined for viral, social media-driven outbursts that flare up rapidly but dissolve without achieving lasting institutional policy change.

Democratic Role: Protests function as a civilian **"emergency brake"** against perceived government overreach or policy failure.

6.2 Pressure Groups in a Pluralistic Democracy

Definition: Private associations formed to influence public policy without seeking direct political office or contesting elections (defined by political scientist V.O. Key).

Methods:

Direct: Executive lobbying, legislative petitions, Public Interest Litigation (PIL).

Indirect: Media campaigns, public rallies, strikes, and social media mobilization.

Safety Valve Function: Act as institutional watchdogs that bring excluded grievances onto the formal policy agenda (e.g., Mazdoor Kisan Shakti Sangathan pushing for the RTI Act, 2005).

Part II: 15 UPSC Prelims-Style MCQs

Q1. Consider the following statements regarding the Representation of the People Act (RPA), 1950 and electoral roll management:

1. The RPA, 1950 explicitly names four roll authorities: Chief Electoral Officer, District Election Officer, Electoral Registration Officer, and Assistant Electoral Registration Officer.
2. The RPA, 1950 contains statutory provisions establishing year-round standing judicial tribunals to settle electoral roll disputes.
3. Section 21 of the RPA, 1950 empowers the Election Commission of India to order a Special Intensive Revision (SIR) of electoral rolls.

Which of the statements given above is/are correct? (a) 1 and 3 only
(b) 2 only
(c) 1 and 2 only
(d) 1, 2 and 3

Q2. With reference to Form 7 under the Registration of Electors Rules, 1960, consider the following statements:

1. Submission of Form 7 automatically results in immediate voter deletion prior to an inquiry.
2. The Electoral Registration Officer (ERO) is legally mandated to hold a hearing and pass a reasoned order before removing any voter entry.
3. Section 31 of the Representation of the People Act, 1950 prescribes penal consequences for making false declarations in voter deletion applications.

Which of the statements given above is/are correct? (a) 1 and 2 only
(b) 2 and 3 only
(c) 3 only
(d) 1, 2 and 3

Q3. Regarding World Bank poverty estimations for India (2023 update), consider the following statements:

1. Extreme poverty is defined as living on less than $3 a day measured in 2021 Purchasing Power Parity (PPP) terms.
2. India's extreme poverty headcount ratio stood at 2.6% in 2023.
3. The lower middle-income poverty line used by the World Bank is set at $8.3 a day.

Which of the statements given above is/are correct? (a) 1 and 2 only
(b) 2 and 3 only
(c) 1 only
(d) 1, 2 and 3

Q4. Consider the following statements regarding poverty and income dynamics in India based on World Bank data:

1. India's consumption inequality Gini index declined from 28.8 in 2011–12 to 23.0 in 2023.
2. Approximately 57% of India's poor population is concentrated in the state belt extending from Uttar Pradesh to West Bengal.
3. The headcount ratio below the lower middle-income line ($4.2/day) is higher in urban areas than in rural areas.

Which of the statements given above is/are correct? (a) 1 only
(b) 1 and 2 only
(c) 2 and 3 only
(d) 1, 2 and 3

Q5. With reference to ethanol blending and crude refining dynamics in India, consider the following statements:

E100 refers to pure ethanol fuel approved under the Central Motor Vehicles Rules, 1989.

Blending petrol with 20% ethanol (E20) reduces petrol consumption by exactly 20% by volume and efficiency.

Petrol accounts for nearly 44% to 45% of the total refined yield obtained from a barrel of crude oil.

Which of the statements given above is/are correct? (a) 1 only
(b) 1 and 2 only
(c) 2 and 3 only
(d) 1, 2 and 3

Q6. Which of the following biofuel schemes/initiatives are correctly matched with their primary objective?

PM JI-VAN Yojana – Financial support for second-generation (2G) ethanol plants using crop residue.

SATAT Initiative – Production of Compressed Bio-Gas (CBG) from agricultural waste.

Ethanol Interest Subvention Scheme – Provision of soft loans with interest subvention to distilleries.

Select the correct answer using the code given below: (a) 1 and 2 only
(b) 2 and 3 only
(c) 1 and 3 only
(d) 1, 2 and 3

Q7. In the context of modern defence industrial transformation, what does the term "Neo-Primes" refer to?

(a) State-owned defence public sector undertakings manufacturing heavy artillery.
(b) Commercial software and AI-centric firms supplying algorithms, code, and autonomous systems to military forces.
(c) Joint ventures formed between state shipbuilders and foreign defense contractors.
(d) Statutory defense research laboratories established under parliamentary statutes.

Q8. Consider the following statements regarding software-defined warfare and defence procurement:

> Traditional defence contractors typically operate under fixed-price contracts for upfront platform development.
>
> Neo-prime software firms often absorb upfront development costs and utilize fixed-price contracts.
>
> The Defence Autonomous Warfare Group (DAWG) absorbed the Replicator Initiative to scale low-cost uncrewed autonomous systems.

Which of the statements given above is/are correct? (a) 1 and 2 only
(b) 2 and 3 only
(c) 1 and 3 only
(d) 1, 2 and 3

Q9. Which of the following statements regarding AI-enabled drone swarms and counter-drone systems is/are correct?

> Individual drones within an AI-enabled swarm can communicate autonomously with other drones in the swarm.

Non-state actors have increasingly conducted drone strikes in active conflict zones in recent years.

GPS spoofing, electronic jammers, and directed-energy lasers serve as primary counter-drone measures.

Select the correct answer using the code given below: (a) 1 and 2 only
(b) 2 and 3 only
(c) 1 and 3 only
(d) 1, 2 and 3

Q10. With reference to the Code on Social Security, 2020, consider the following statements:

It amalgamates nine existing central labour statutes into a unified code.

It grants legal recognition to gig and platform workers for the first time in Indian statutory law.

The National Social Security Board for Gig and Platform Workers is statutorily chaired by an independent trade union representative.

Which of the statements given above is/are correct? (a) 1 and 2 only
(b) 2 and 3 only
(c) 1 and 3 only
(d) 1, 2 and 3

Q11. Regarding statutory boards constituted under the Code on Social Security, 2020, consider the following statements:

Labour is a subject enumerated in the Concurrent List (List III) of the Seventh Schedule of the Constitution.

The National Unorganised Workers Board comprises 40 members, whereas the Gig and Platform Workers Board comprises 22 members.

State representation on these national boards is statutorily mandated to include representatives from all 28 Indian States.

Which of the statements given above is/are correct? (a) 1 and 2 only
(b) 2 and 3 only
(c) 1 only
(d) 1, 2 and 3

Q12. Consider the following statements regarding Pressure Groups in a democratic polity:

Political scientist V.O. Key defined pressure groups as "private associations formed to influence public policy."

Pressure groups actively field candidates to contest parliamentary elections and form executive governments.

Public Interest Litigation (PIL), executive lobbying, and public rallies are recognized methods utilized by pressure groups.

Which of the statements given above is/are correct? (a) 1 and 2 only
(b) 1 and 3 only
(c) 3 only
(d) 1, 2 and 3

Q13. In political discourse, the term "hyperpolitics" describes:

(a) Long-term constitutional amendments passed with unanimous political consensus.
(b) Viral, intense social media-driven protests that flare up rapidly but leave core power structures largely unchanged.
(c) Judicial oversight over executive emergency declarations.
(d) Formal coalition agreements formed between ruling and opposition parties.

Q14. According to India's National Policy on Biofuels, which of the following raw materials can be used for biofuel production?

Damaged foodgrains (wheat and broken rice)
Sugarcane juice and molasses
Agricultural crop stubble and crop residue
Municipal solid waste and algae

Select the correct answer using the code given below: (a) 1, 2 and 3 only
(b) 1 and 2 only
(c) 3 and 4 only
(d) 1, 2, 3 and 4

Q15. With reference to the Multidimensional Poverty Index (MPI), consider the following statements:

It measures non-income deprivations across health, education, and standard of living.
India's multidimensional poverty headcount ratio dropped from over 50% in 2005–06 to under 17% in 2019–21.
Market exchange rate fluctuations are the primary weight factor in calculating the MPI.

Which of the statements given above is/are correct? (a) 1 and 2 only
(b) 2 and 3 only
(c) 1 only
(d) 1, 2 and 3

Part III: Answer Key & Detailed Explanations

1. Answer: (a)

Explanation:

Statement 1 is correct: The Representation of the People Act, 1950 names strictly four roll authorities: Chief Electoral Officer (CEO), District Election Officer (DEO), Electoral Registration Officer (ERO), and Assistant Electoral Registration Officer (AERO).

Statement 2 is incorrect: The RPA, 1950 is silent on tribunals and contains no statutory provision for standing year-round appellate tribunals.

Statement 3 is correct: Section 21 of RPA, 1950 empowers the ECI to order a special revision of electoral rolls for reasons recorded in writing.

2. Answer: (b)

Explanation:

Statement 1 is incorrect: Form 7 acts as a complaint/objection; it does **not** automatically remove any name.

Statement 2 is correct: Under the Registration of Electors Rules, 1960, an ERO must hold a formal hearing and issue a reasoned order before removing any entry.

Statement 3 is correct: Section 31 of RPA, 1950 provides penal sanctions for making false declarations or bogus objections during roll revision.

3. Answer: (a)

Explanation:

Statement 1 is correct: Extreme poverty is defined by the World Bank as living on less than $3 a day in 2021 Purchasing Power Parity (PPP) terms.

Statement 2 is correct: India's extreme poverty rate reached 2.6% in 2023.

Statement 3 is incorrect: $8.3 a day is the World Bank's **upper middle-income** line. The lower middle-income line is set at **$4.2 a day**.

4. Answer: (b)

Explanation:

Statement 1 is correct: India's consumption inequality Gini index dropped to 23.0 in 2023 from 28.8 in 2011–12.

Statement 2 is correct: About 57% of India's poor live in the geographical belt from Uttar Pradesh to West Bengal.

Statement 3 is incorrect: Below the lower middle-income line ($4.2/day), the rural headcount ratio is **19.3%**, whereas the urban headcount ratio is lower at **8.6%**.

5. Answer: (a)

Explanation:

Statement 1 is correct: E100 refers to pure ethanol fuel enabled by amendments to the Central Motor Vehicles Rules, 1989.

Statement 2 is incorrect: E20 reduces petrol consumption by **~15.56%** (not 20%) due to lower energy density per litre compared to petrol.

Statement 3 is incorrect: Petrol constitutes **15% to 18%** of refinery yield from a crude barrel; **diesel** constitutes 44% to 45%.

6. Answer: (d)

Explanation:

All three statements are correctly matched: PM JI-VAN Yojana supports 2G crop stubble ethanol; SATAT targets Compressed Bio-Gas (CBG) from ag-waste; and Ethanol Interest Subvention Scheme provides soft loans with a 6% subvention to distilleries.

7. Answer: (b)

Explanation:

"Neo-Primes" refers to commercial software, AI, and technology companies (e.g., Palantir, Anduril, SpaceX) that sell algorithms, code, and autonomous systems to military forces under fixed-price contracts.

8. Answer: (b)

Explanation:

Statement 1 is incorrect: Traditional contractors operated primarily under **cost-plus contracts** (where the government repays costs plus a profit margin).

Statement 2 is correct: Neo-primes take **fixed-price contracts**, absorbing upfront costs to capture higher margins via rapid software delivery.

Statement 3 is correct: DAWG absorbed the Replicator Initiative to rapidly field low-cost uncrewed systems.

9. Answer: (d)

Explanation:

Statement 1 is correct: AI-enabled drone swarms feature autonomous node-to-node communication between individual drones.

Statement 2 is correct: Non-state actors conducting drone attacks increased significantly in recent years.

Statement 3 is correct: GPS spoofing, electronic warfare jammers, radar detection, and directed-energy lasers are primary counter-swarm techniques.

10. Answer: (a)

Explanation:

Statement 1 is correct: The Code on Social Security, 2020 merges nine existing labour laws.

Statement 2 is correct: It legally recognizes gig and platform workers for the first time.

Statement 3 is incorrect: Both national boards are chaired by the **Union Labour Minister**, not an independent trade union leader.

11. Answer: (a)

Explanation:

Statement 1 is correct: Labour falls under Item 22 & 24 of the Concurrent List (List III).

Statement 2 is correct: The Unorganised Workers Board has 40 members and the Gig Workers Board has 22 members.

Statement 3 is incorrect: Only 5 States (Maharashtra, UP, WB, AP, Gujarat) supply officers; state representation is not universal across all 28 states.

12. Answer: (b)

Explanation:

Statement 1 is correct: V.O. Key defined pressure groups as private associations formed to influence public policy.

Statement 2 is incorrect: Pressure groups do **not** contest elections or seek direct political power; political parties do.

Statement 3 is correct: PILs, lobbying, petitions, rallies, and strikes are established methods used by pressure groups.

13. Answer: (b)

Explanation:

"Hyperpolitics" refers to intense, viral social media-driven protests that flare up rapidly but leave core institutional power structures and policy outcomes unchanged.

14. Answer: (d)

Explanation:

Under India's National Policy on Biofuels, raw materials across all 4 generations are permitted: 1G (sugarcane juice, damaged grains, wheat, broken rice), 2G (crop stubble/residue), 3G (algae), and 4G (municipal solid waste and synthetic fuels).

15. Answer: (a)

Explanation:

Statement 1 is correct: MPI measures non-income deprivations across health, education, and living standards.

Statement 2 is correct: India's MPI fell from 53.8% (2005–06) to 16.4% (2019–21).

Statement 3 is incorrect: MPI measures non-income dimensions; currency exchange rates play no role in calculating MPI deprivation