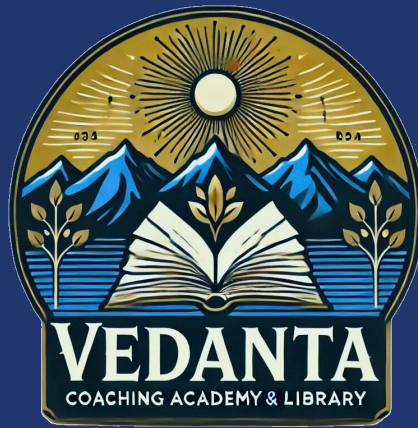




VEDANTA COACHING ACADEMY & LIBRARY · UPSC · HPAS

The Hindu *Analysis*

Tuesday, 6 October 2026

IN THIS EDITION

- | | | |
|-----------|--|-----------------|
| 01 | Nobel Medicine 2026 · Optogenetics
Page 1 · Science & Tech | GS 3 |
| 02 | Global South's Jobs Crisis
Page 6 · Economy · Op-Ed | GS 3 |
| 03 | Asian Games & the 2036 Olympic Bid
Page 6 · Sports Governance · Editorial | GS 2 |
| 04 | Great Indian Bustard Releases
Page 6 · Environment · Editorial | GS 3 |
| 05 | Disability Inclusion in AI
Page 7 · Social Justice · Op-Ed | GS 2, 3 |
| 06 | Coal Stocks Critically Low
Page 7 · Energy · Data Point | GS 3 |
| ◆ | Practice Zone
2 Mains (with Hindi) · 10 MCQs · Recap · Trap-Setters · Places & Persons | PRACTICE |

"Landscapes, not species, ought to be the unit of conservation."

THE HINDU · EDITORIAL · BIRD ISLANDS

Compiled by *Sapna Chauhan*

DAILY CURRENT AFFAIRS · GS-MAPPED · EXAM-READY

GS 3 PAGE 1 · SCIENCE & TECH

01 Nobel in Medicine 2026: Switching Neurons On and Off with Light

WHY IN NEWS

Karl Deisseroth (Stanford University, U.S.), Peter Hegemann (Humboldt University, Berlin) and Georg Nagel (University of Würzburg, Germany) have won the **2026 Nobel Prize in Physiology or Medicine** for discoveries that led to **optogenetics** – a technique that lets scientists control selected nerve cells using light.

- ♦ **What optogenetics does:** It makes chosen neurons light-sensitive so that researchers can switch them on or off at will. The Nobel Assembly noted that this moved neuroscience **from observing correlations to testing causation** – showing how particular neurons and circuits produce specific behaviours and emotions.
- ♦ **The alga clue (1990s):** Hegemann's team found that shining light on the microscopic green alga **Chlamydomonas** rapidly triggered an electric signal within it. In 2000 he approached Nagel, whose experiment confirmed the idea.
- ♦ **Light-gated channels:** The team identified two proteins that act as channels and open on exposure to light – **channelrhodopsin-1** and **channelrhodopsin-2**. ChR2 opens within **0.2 milliseconds**, letting **positively charged ions** rush into the cell and generate an electrical signal.
- ♦ **From dish to living brain:** Deisseroth's group published its first major result in **2005 using rat neurons**; by **2006** the technique had its name. In **2007** it stimulated specific neurons in live mice through a slender fibre-optic cable, making the animals' whiskers move.
- ♦ **Why it matters:** Optogenetics is now used to study **schizophrenia, depression, Alzheimer's and Parkinson's** disease and to test therapies that could restore **vision and hearing**. It is a reminder that basic research on an obscure alga can transform medicine decades later.

VALUE ADDITION · HOW OPTOGENETICS WORKS

Step 1 – Deliver the gene: the gene for a light-sensitive protein (an *opsin*) is carried into the brain, commonly by a harmless viral vector, with a cell-type-specific promoter so only the targeted neurons express it.

Step 2 – Shine the light: light of a particular wavelength is delivered through an optical fibre. Blue

Trio wins medicine Nobel for 'controlling' neurons with light

The Hindu Bureau
CHENNAI

A trio of scientists was on Monday declared the winners of the 2026 Nobel Prize in Physiology or Medicine for discoveries leading to a technique called optogenetics, which allows scientists to control select nerve cells using light.

The Nobel Assembly said the work of the laureates – Karl Deisseroth, Peter Hegemann, and Georg Nagel – allowed neuroscience to move beyond observing correlations and testing how particular neurons and neural circuits are related to different behaviours and emotions. Today, optogenetics helps scientists study schizophrenia, depression, Alzheimer's and Parkinson's diseases, and test treatments to restore vision and hearing loss.

In the 1990s, Mr. Hegemann, now at Humboldt

Bright minds

The trio won the Nobel for contributions towards **optogenetics**, which helps in the study of schizophrenia, depression, and Alzheimer's disease



Peter Hegemann
Humboldt University of Berlin, Germany



Karl Deisseroth
Stanford University, U.S.



Georg Nagel
University of Würzburg, Germany

University in Berlin, and his team found that shining light on a microscopic alga called *Chlamydomonas* rapidly triggered an electric signal within its body.

CONTINUED ON
» PAGE 10

Source: The Hindu, 6 Oct 2026 · Page 1

light opens **channelrhodopsin-2** and **activates** the neuron; yellow light drives **halorhodopsin**, a chloride pump that **silences** it.

Step 3 — Read the effect: because the switch is precise in both cell type and millisecond timing, scientists can link a specific circuit to a specific behaviour.

Nobel Prize — static facts: instituted by the will of **Alfred Nobel** (inventor of dynamite); first awarded in **1901**; presented on **10 December**, Nobel's death anniversary (1896); six fields — Physics, Chemistry, Physiology or Medicine, Literature, Peace and Economic Sciences (the last instituted by **Sveriges Riksbank in 1968**). A prize may be shared by at most **three persons**; the Peace Prize can also go to an organisation. Self-nomination is not allowed, and since **1974** the prize is not awarded posthumously unless the laureate dies after the announcement. First Indian laureate: **Rabindranath Tagore** (Literature, 1913); first Indian woman: **Mother Teresa** (Peace, 1979).

PRELIMS POINTERS

- ▶ **Chlamydomonas** — unicellular, flagellated green alga with a light-sensing eyespot.
- ▶ **Rhodopsin** — the light-sensitive pigment of the retina's rod cells; channelrhodopsins are its algal 'cousins'.
- ▶ India-linked Medicine laureates: **Ronald Ross** (1902, malaria; born in Almora) and **Har Gobind Khorana** (1968, genetic code).

Syllabus Link › GS 3 — Science & Technology: developments and their applications; achievements of scientists; biotechnology & health.



GS 3 · PAGE 6 · ECONOMY · OP-ED

02 The Looming Crisis of World Unemployment

WHY IN NEWS

World Bank President **Ajay Banga** has warned that over the coming decade **1.2 billion** young people in the Global South will reach working age, while the global economy is projected to create no more than **400 million** viable jobs — a deficit of **800 million** opportunities (Shashi Tharoor, Op-Ed).

- ◆ **Demographic dividend under strain:** The classic formula — falling fertility raises the share of working-age adults, lifting savings, investment and productivity — powered the **East Asian miracle**. Today the youth bulges of countries like India coincide with stalling 'escalators' of mobility, risking a dividend that turns into a **demographic disaster**.
- ◆ **Premature deindustrialisation:** Automation, robotics and industrial software have cut the labour intensity of manufacturing. Developing nations are losing factory jobs **before reaching the income levels** at which today's rich economies de-industrialised, while rewards flow to high-skilled, tech-driven labour.
- ◆ **World Bank prescriptions:** Unlock private capital; remove **regulatory sclerosis**, erratic rules and predatory taxation; strengthen property rights to attract long-term FDI; and build transparent institutions in which **MSMEs — the main engines of job creation** — can launch, grow and hire.

- ◆ **Infrastructure's dual dividend:** India lags on regulation but does better on infrastructure. Building roads, ports, power and digital networks **absorbs labour immediately** and, once built, lowers the cost of doing business across the economy.
- ◆ **Sector-specific pathways:** **Agriculture** — shift from subsistence to agri-tech, cold chains, food processing and climate-resilient value chains; **care economy** — nurses, community health workers, elder-care, largely non-outsourcable and open to women; **tourism** — labour-intensive with a broad multiplier; **green manufacturing** — solar components, EVs, energy-efficient materials.
- ◆ **India's stakes:** As the most populous nation with a **median age under 30**, India faces skill-market mismatch, underemployment, low female labour force participation and a farm sector that holds nearly half the workforce but produces only about **16% of GDP (FY24)**. Failure breeds frustration, polarisation and distress migration.

The looming crisis of world unemployment

A recent World Bank forecast reveals that the global economy stands at the precipice of a silent catastrophe. A recent warning issued by Bank President Ajay Banga is stark: over the coming decade, an astonishing 1.2 billion young men and women in the Global South will reach working age, but the global economy is projected to generate no more than 400 million viable jobs. This creates a staggering deficit of 800 million opportunities in the job market, a demographic chasm of such unprecedented magnitude that it threatens to convert what should be the greatest economic dividend of the 21st century into a catalyst for widespread instability.

A failing blueprint

For decades, economic theorists have championed the demographic dividend as the primary engine for lifting developing nations out of poverty. The formula appeared straightforward: as fertility rates decline, the proportion of working-age adults relative to dependents increases, creating a temporary window of high productivity, elevated domestic savings, and rapid capital accumulation that fuelled the East Asian economic miracle in the late 20th century. Today, however, that classic blueprint is failing. Developing nations such as India are experiencing their youth bulges at a historical moment when the traditional escalators of economic mobility are stalling. The sheer velocity of demographic growth in many countries is outstripping the rate at which domestic markets, infrastructure, and institutional frameworks can absorb new labour, turning the potential dividend into a looming crisis.

Central to the dilemma is the rapid evolution of global trade, technology, and manufacturing. Historically, light manufacturing served as the indispensable bridge for low-income nations transitioning away from subsistence agriculture, absorbing millions of unskilled and semi-skilled workers into productive urban employment. Today, automation, robotics, and advanced industrial software have drastically reduced the labour intensity of manufacturing. As a result, developing nations are experiencing premature deindustrialisation: their manufacturing sectors are losing jobs before reaching the income thresholds of industrial economies of the past. Furthermore, the modern global economy increasingly rewards high-skilled, technology-driven labour, widening the chasm for millions of youth in developing countries who lack access to modern digital infrastructure, quality vocational training, or tertiary education.

There is no easy solution. The World Bank recommends unlocking private sector capital and



Shashi Tharoor

Four-term Member of Parliament (Congress) for Thiruvananthapuram, who served nearly three decades at the United Nations, where he rose to the position of Under-Secretary-General. He has also been Minister of State for External Affairs and for Human Resource Development in the Government of India and is the bestselling author, among others, of 'Pax Indica: India and the World of the 21st century'.

A widening jobs gap threatens the promise of demographic dividends: the Global South faces an unprecedented employment challenge

dismantling the regulatory sclerosis that throttles domestic enterprise in many developing economies. Potential entrepreneurs face prohibitive costs of capital, erratic regulatory environments and predatory taxation. Complex legal frameworks and weak property rights scare away long-term foreign direct investment, confining capital to speculative assets rather than employment-generating ventures. Simplifying regulatory regimes, establishing transparent governance structures, and bolstering institutional integrity are essential preconditions for creating environments where small and medium-sized enterprises, the main engines of global job creation, can launch, grow, and hire.

India lags here, but does better in improving infrastructure, another key recommendation. A small business cannot compete in global supply chains, nor can it grow locally, if it suffers from routine power failures or exorbitant logistics costs caused by dilapidated roads and port congestion. Modernising physical and digital infrastructure serves a dual economic purpose: the construction and deployment phase itself absorbs massive quantities of immediate labour, while the resulting assets lower the cost of doing business across the economy.

Sector-specific strategies are ideal

Within this broader macroeconomic overhaul, targeted sector-specific strategies offer the most realistic pathway toward mass labour absorption. Agriculture still remains the largest employer in the developing world. Transitioning from low-yield subsistence farming to high-value, technology-enabled agri-tech and commercial agribusiness can transform rural economies. By investing in cold-chain logistics, localised food processing, and climate-resilient farming techniques, nations can create sophisticated rural value chains that offer meaningful, remunerative employment to young people, reducing the desperate tide of distress migration to the cities.

Health care and the broader care economy offer other possibilities for employment expansion. The demand for trained health-care workers, nurses, community health personnel, and elder-care specialists is exploding. Investing in health human resources delivers a powerful double dividend: it creates millions of resilient, non-outsourcable domestic jobs (predominantly for young women who are often excluded from formal labour markets) while simultaneously building the human capital necessary to sustain long-term national productivity.

Similarly, tourism and culture offer an extraordinary vehicle for decentralised job creation. Tourism is inherently labour-intensive, engages semi-skilled and unskilled workers and is resistant to total automation. It possesses a

uniquely broad multiplier effect, driving revenues down to local transport providers, hospitality workers, artisans, and historical preservation efforts. Strategic investments in sustainable tourism infrastructure and international destination marketing translates directly into widespread employment.

Manufacturing, too, must be reimagined. Modern light assembly, green-transition manufacturing (such as the production of solar components, electric two-wheelers, and energy-efficient materials) and decentralised production networks can still absorb substantial labour if paired with agile skill-building programmes.

History demonstrates that when vast cohorts of educated, energetic, and ambitious young people are denied access to productive economic life, the resulting frustration erodes trust in governments, fuels social polarisation, and creates fertile ground for extremist or criminal ideologies and civil unrest. In an interconnected world, failure to generate livelihoods in the Global South will inevitably accelerate forced migration flows toward the Global North, exacerbating political tensions worldwide.

Preventing prolonged youth unemployment from leading to global catastrophe requires an unprecedented alignment of international finance, domestic political courage, and private sector dynamism. Developed economies and multilateral financial institutions must facilitate affordable, long-term development financing and technology transfers, while developing nations must undertake the hard, often politically painful work of institutional reform. The global economy possesses the financial resources and technological tools required to meet this challenge. But can the international community muster the collective resolve to build an inclusive global order where every young person is afforded a fair opportunity to work, contribute, and thrive? In today's climate this writer would not count on it.

As the world's most populous nation, India sits at the epicentre of this dynamic, adding millions of young entrants to its workforce each year while grappling with an economy that has struggled to match GDP growth with employment creation. The nation's immediate challenge, in a dwindling demographic window, includes matching skills to markets, persistent underemployment, low female labour force participation, and an agrarian sector that still absorbs nearly half the population despite producing just 16% of GDP (FY24). India, with a median age under 30, must move toward labour-absorbing value creation. Otherwise its celebrated demographic dividend could collapse into a demographic disaster.

Source: The Hindu, 6 Oct 2026 · Page 6 (Op-Ed)

VALUE ADDITION · JOBS & DEMOGRAPHY TOOLKIT

Demographic dividend (UNFPA): the growth potential that arises when the working-age population (15–64) is larger than the dependent population. The **Economic Survey 2018–19** projected India's working-age share to peak around **2041**.

Jobless growth: GDP grows faster than employment. **Disguised unemployment:** more workers than needed (marginal productivity $\approx$ zero), typical of Indian agriculture. **Premature deindustrialisation:** a term popularised by economist **Dani Rodrik**.

Data source: the **Periodic Labour Force Survey (PLFS)** of NSO, MoSPI, which now also releases monthly estimates. **Key responses:** Skill India Mission (PMKVY), PLI schemes, PM Internship Scheme, Employment Linked Incentive scheme, Mudra & Stand-Up India credit, and the labour codes.

PRELIMS POINTERS

- **Global South** — broadly the developing economies of Asia, Africa and Latin America.
- **Care economy** — paid and unpaid work in caring for children, the sick and the elderly; highlighted by the ILO as a large job creator.

Syllabus Link › GS 3 — Indian Economy: growth, development and employment; inclusive growth; human resource development.



GS 2 PAGE 6 · SPORTS GOVERNANCE · EDITORIAL

03 Good, Not Good Enough: Asian Games Reality Check before an Olympic Bid

WHY IN NEWS

India finished **4th at the Aichi-Nagoya Asian Games (Japan)** with **85 medals (21 Gold, 27 Silver, 37 Bronze)** — down from 106 at Hangzhou — prompting the editorial argument that, without raising sporting standards, India should not bid for the **2036 Olympics**.

Good, not good enough

Without raising sports standards, India should not bid for hosting the Olympics

Aspiring to host the Olympic Games in 2036, India faced a harsh reality check at the Aichi-Nagoya Asian Games. Compared with the previous Hangzhou Games, where it won 106 medals with a 650-plus contingent, the country won 85 medals from around 500 athletes. The aggregate fell short of an internally projected figure of around 100 medals. It is likely to invite a thorough postmortem, given the hundreds of crores of public money spent on the athletes' preparation. India laboured to 21 gold medals, seven fewer than in Hangzhou, after a late surge of 11 top honours in the last two days, driven by the exploits of archers, boxers, wrestlers, and hockey and cricket players. It tied with Uzbekistan but managed to retain its fourth spot on the strength of a bigger haul of silver. Thirteen of the gold medals came from team events, with cricket, kabaddi and hockey making a clean sweep of titles. It underscored a stark reality: the country needs to raise its bar in medal-fetching individual sports, such as athletics, swimming, gymnastics, fencing and cycling, which determine success in multi-disciplinary Games. China, the runaway winner with a massive aggregate of 341 medals, including 169 gold, secured 54 medals in swimming alone. Barring athletics, India stood

On a brighter note, India fielded 310 debutants and recorded a marginal increase in its athlete-to-medal ratio ahead of Los Angeles 2028. Several historic performances provided reasons to rejoice. Seventeen-year-old rookie recurve archer Kumkum Mohod dismantling the Korean women's hegemony to help the archery team contribute five gold medals was a defining moment. Trap shooter Neeru Dhanda, golfer Pranavi Urs, wrestler Sujeet Kalkal and the women's hockey team, which upset Paris Olympics silver medallist China to clinch gold after 44 years, hogged the limelight. Lovlina Borgohain, Aman Sehrawat, Mirabai Chanu, Vithya Ramraj and Gulveer Singh lived up to their billing. Boxers, wrestlers and golfers registered noticeable improvement. Olympic quota places in archery and hockey added to the excitement. Indian women catching up with men — both genders delivered 38 medals apiece — was another encouraging sign. On the flip side, India's two major contributors, athletics and shooting, which earned 24 and 15 medals, respectively, yielded 12 fewer medals than in 2023. The shuttlers slipped, while the tennis players returned empty-handed after 40 years. P.V. Sindhu and Manu Bhaker flopped. Stricter scrutiny of athletes' funding and efficient implementation of the revamped Khelo India scheme, designed with a long-term vision, are essential for course correction. Without propelling India's sporting standards, a bid to host the Olympics may become a countdown to international embarrassment.

VOICE OF INDIAN SPORT

ASIAN GAMES 2026 · AICHI-NAGOYA · TOP 15

FINAL MEDAL TALLY

RANK	NATION				TOTAL
1	CHN China	169	89	83	341
2	JPN Japan	83	95	91	269
3	KOR South Korea	39	43	68	150
4	IND India	21	27	37	85
5	UZB Uzbekistan	21	25	24	70
6	IRI Iran	19	18	15	52
7	THA Thailand	18	13	21	52
8	KAZ Kazakhstan	12	24	48	84
9	HKG Hong Kong, China	11	19	24	54
10	BRN Bahrain	11	5	6	22
11	MAS Malaysia	9	7	16	32
12	PRK North Korea	7	13	9	29
13	UAE UAE	7	5	1	13
14	QAT Qatar	6	6	6	18
15	TPE Chinese Taipei	5	17	33	55

INDIA FINISH 4TH WITH 85 MEDALS

21 Gold · 27 Silver · 37 Bronze — ahead of Uzbekistan on silvers

Source: The Hindu, 6 Oct 2026 · Page 6 (Editorial) · Final medal tally, Top 15

- ◆ **The numbers:** A contingent of about **500 athletes** (650-plus at Hangzhou) won 85 medals against an internal target of ~100. Golds fell by seven to **21**, eleven of them in the last two days. India tied Uzbekistan on golds but kept 4th place on its bigger **silver haul**.

- ◆ **Team events carried the load: 13 of the 21 golds came from team events**, with cricket, kabaddi and hockey sweeping titles. India still struggles in medal-rich individual sports — **athletics, swimming, gymnastics, fencing, cycling**. China (341 medals, 169 gold) won **54 medals in swimming alone**.
- ◆ **Bright spots: 310 debutants** and a marginally better athlete-to-medal ratio ahead of LA 2028. Seventeen-year-old recurve archer **Kumkum Mohod** broke Korea's hegemony as archers won five golds; the **women's hockey team** beat China for gold after 44 years. Women and men each delivered **38 medals**.
- ◆ **Worrying slides:** Athletics and shooting (24 and 15 medals) yielded **12 fewer medals than 2023**; shuttlers slipped; tennis returned **empty-handed for the first time in 40 years**; P.V. Sindhu and Manu Bhaker disappointed.
- ◆ **Way forward:** A thorough **post-mortem** of the hundreds of crores spent; stricter scrutiny of athlete funding; efficient delivery of the revamped **Khelo India**; and a broad grassroots base in individual sports — otherwise an Olympic bid risks becoming 'a countdown to international embarrassment'.

VALUE ADDITION · SPORTS GOVERNANCE FACTS

Asian Games are held every four years under the **Olympic Council of Asia (OCA)**, headquartered in **Kuwait**. The first edition was held in **New Delhi in 1951**; India hosted again in **1982**. Upcoming hosts: **Doha 2030** and **Riyadh 2034**.

2036 Olympic bid: the Indian Olympic Association sent a Letter of Intent to the IOC's Future Host Commission in October 2024, with **Ahmedabad** as the proposed host city; Ahmedabad will also stage the **2030 Commonwealth Games**. Next Summer Olympics: **Los Angeles 2028, Brisbane 2032**.

Policy architecture: **Khelo India** (grassroots and talent identification), **TOPS — Target Olympic Podium Scheme** (2014, elite support), **National Sports Policy 2025** (Khelo Bharat Niti) and the **National Sports Governance Act, 2025**. 'Sports' is a **State subject (Entry 33, List II)**.

PRELIMS POINTERS

- ▶ **Aichi-Nagoya 2026** — Japan's third Asian Games as host after Tokyo 1958 and Hiroshima 1994.
- ▶ **Medal table rule** — ranks are decided by golds, then silvers, then bronzes.

Syllabus Link › GS 2 — Government policies and interventions; GS 1/Essay — sports as soft power and nation-building.



GS 3 · PAGE 6 · ENVIRONMENT · EDITORIAL

04 Bird Islands: Great Indian Bustard and the Limits of Symbolic Conservation

WHY IN NEWS

Two captive-bred male **Great Indian Bustards (GIB)** were released into the wild at the **Desert National Park, Jaisalmer**, in the presence of the Union and Rajasthan Environment Ministers. The editorial argues India's conservation must go **beyond symbolism**.

Bird islands

India's conservation efforts must go beyond symbolism

This week, at the Desert National Park in Jaisalmer, two male Great Indian Bustards were released into the wild. It was a ceremony with considerable bureaucratic pomp; the Union and the Rajasthan Environment Ministers were in attendance. The conservation plan now has 97 birds, with nine more awaiting release. Of these, 57 are captive-bred and have produced 29 chicks this year and 24 last year. These are notable numbers for a species with a population of around 120 that has teetered on the brink of extinction for nearly half a century. It is worth recounting the bird's conservation travails. Ornithologist Salim Ali wanted it as the national bird, so that protection would follow; the Indian Board for Wildlife chose the peacock instead. Numbering about 1,260 in 1969, it dipped to 600 by 2000, and 140-175 in Rajasthan by the 2010s. Hunters, royal ones included, prized the bird, with shooting reportedly lasting into the late 1970s. The rise of irrigation in Rajasthan led to the grasslands, which were once dismissed as 'wastelands,' give way to irrigated, pesticide-soaked fields and roads making the bird more vulnerable. The most recent threat came in the form of high-tension power lines. As a heavy bird, the bustard tends to fly at the same height as power lines and has poor vision. The Supreme Court in 2021 ordered that low-voltage lines in priority habitats be under-

ground. After opprobrium from renewable energy companies, on the grounds that this compromised the economics of solar power, the Court modified the order requiring that only a subset of the power lines – those part of the bird's 'critical' habitat – be made underground.

While the cultural links of the 'Godawan' – the bird's local name – to Rajasthan's habitat are now part of government and private marketing efforts, there are several other birds that are not as fortunate. Nearly 1,256 bird species, about 11.5% of the world's total, are classified as threatened. Skylark numbers have fallen nearly 80% and Indian rollers 30% in 12 years. India's conservation policy is captive to symbolism. A tigress from Valmiki flown to Buxa; African cheetahs in enclosures; Gir's lions, confined to Saurashtra and straying into human habitations stoking conflict; the Delhi Ridge, being planted with peepal and banyan that ecologists say do not belong to its dry ecology. The conservation ethos – on paper emphasising coexistence between the wild and human – is practically promoting islands and African-style reserves. These have merits but populations that thrive inside walls overflow into villages and fields, as India's challenges with elephants show. Landscapes, not species, ought to be the unit of conservation.



Source: The Hindu, 6 Oct 2026 · Page 6 (Editorial) · Great Indian Bustard

- ◆ **Programme numbers:** The conservation plan now holds **97 birds**, with nine more awaiting release. Of these, **57 are captive-bred**, producing **29 chicks this year and 24 last year** – notable for a species with a wild population of only about **120**.
- ◆ **A half-century slide:** About **1,260 birds in 1969** fell to 600 by 2000 and 140–175 in Rajasthan by the 2010s. **Salim Ali** wanted the GIB as the national bird so that protection would follow; the Indian Board for Wildlife chose the peacock.
- ◆ **Drivers of decline:** Hunting (including royal shikar) into the late 1970s; irrigation that turned grasslands – dismissed as '**wastelands**' – into pesticide-soaked fields and roads; and, most recently, **high-tension power lines**, since this heavy bird flies at wire height and has poor frontal vision.
- ◆ **The courts and the grid:** The **Supreme Court (2021)** ordered undergrounding of low-voltage lines in priority habitats. After objections from renewable-energy firms that this hurt solar economics, the order was modified to cover only lines in the bird's **critical habitat**.
- ◆ **Captive to symbolism:** About **1,256 bird species (≈11.5% of the world's total)** are threatened; skylarks have fallen nearly 80% and Indian rollers 30% in 12 years. A tigress flown from Valmiki to Buxa, cheetahs in enclosures, Gir lions confined to Saurashtra and native-inappropriate peepal and banyan on the dry Delhi Ridge show the pattern.
- ◆ **Way forward:** Populations that thrive inside 'islands' overflow into fields, as elephant conflict shows. **Landscapes, not species, ought to be the unit of conservation** – protecting grasslands as living ecosystems and coexistence outside reserves.

VALUE ADDITION · GREAT INDIAN BUSTARD (GODAWAN)

Identity: *Ardeotis nigriceps*; one of the heaviest flying birds; **State bird of Rajasthan**; a flagship species for grassland health; omnivorous. Mainly in the Thar (Desert NP, Jaisalmer–Barmer), with tiny populations in Gujarat, Maharashtra, Karnataka and Andhra Pradesh.

Protection status: IUCN Red List – **Critically Endangered**; CITES Appendix I; CMS Appendix I; **Schedule I**, Wildlife (Protection) Act, 1972. Covered under the **Integrated Development of Wildlife Habitats** scheme of MoEFCC.

Conservation: Rajasthan's Project GIB (Godawan) and a MoEFCC–Wildlife Institute of India–Rajasthan Forest Department breeding programme, with a conservation breeding centre at **Desert National Park, Jaisalmer (2019)** to build a captive population and release birds into the wild.

Four bustards in India: Great Indian Bustard, **Lesser Florican**, **Bengal Florican** and **Macqueen's Bustard** (a winter migrant).

PRELIMS POINTERS

- ▶ **Valmiki TR** — Bihar (West Champaran); **Buxa TR** — West Bengal (Alipurduar).
- ▶ **Delhi Ridge** — northern extension of the Aravallis; a dry, thorny scrub ecosystem.
- ▶ **Bird diverters** — reflective devices fitted on overhead lines to make wires visible to birds.

Syllabus Link › GS 3 — Conservation, environmental pollution and degradation; biodiversity; environmental impact assessment.



GS 2, 3 PAGE 7 · SOCIAL JUSTICE · OP-ED

05 Disabled Citizens and the Future of AI

WHY IN NEWS

As AI moves into government services, recruitment and healthcare — and the Centre courts **\$200 billion** in AI investment over two years — an Op-Ed warns that disabled citizens are being brought into the conversation late. The petitioners in the **Rajive Raturi** accessibility case are back in the Supreme Court because little has changed.

- ◆ **Promise of AI:** For a blind user, AI reads documents, describes photographs and helps fill government forms that a screen reader cannot open — **independence in small daily tasks**. But this promise will not reach disabled Indians on its own.
- ◆ **The legal baseline:** In **Rajive Raturi v. Union of India (Nov 2024)**, the Supreme Court held accessibility to be a facet of the **right to life and dignity** and found existing rules 'toothless' — polite suggestions where the **RPwD Act, 2016** intended binding standards. The Centre got three months to frame mandatory standards.
- ◆ **Compliance gap:** The **Chief Commissioner for Persons with Disabilities** penalised **155 establishments**, including ministries, for inaccessible websites and apps. Accessible digital services have been required since 2019, yet compliance remains the exception.
- ◆ **Inherent bias:** On the **AccessEval** benchmark (9 disability types), 21 language models became more error-prone, negative and stereotyping once disability entered a query. The image model **CLIP** was 15 percentage points less accurate on photos taken by blind and low-vision users; white canes and Braille displays appeared up to 17 times less often in training data.
- ◆ **Human fallback is essential:** In a survey of **2,462 NClude users**, 1,313 completed a task previously closed to them, but only **543 managed it through AI alone**; the rest needed a staff member.
- ◆ **The infrastructure blind spot:** Data-centre capacity may more than quadruple to **6.5 GW by 2030**; States offer power subsidies, and Maharashtra relaxed its renewable requirement for data centres

from 100% to 51%. Grid strain and urban heat hit hardest those who depend on **powered wheelchairs and oxygen machines**.

- ♦ **Way forward:** Test every government AI system for **disability bias**; build training datasets with genuine, **consent-based** representation; attach renewable, grid and heat conditions to data-centre incentives; and give disabled Indians a voice — ‘nothing about us without us’.

Disabled citizens and the future of AI

A friend of this author has been blind since birth. He uses Artificial Intelligence (AI) almost every day — to read a document; to make sense of a photograph; or to get through a government form his screen reader cannot open, all without relying on a sighted person for help. Watching what it gives him, independence in the small things most people never have to think twice about, the promise of this technology is impossible to dismiss. At the same time, it is impossible to assume that this promise will reach disabled Indians on its own. AI models are moving into government services, recruitment and healthcare. Behind them, data centres and power lines are rising as the Centre courts \$200 billion in AI investment for the next two years.

Disabled people are being brought into the conversation late, if at all.

In the November 2024 *Rajive Raturi* judgment, the Supreme Court held that accessibility is a facet of the fundamental right to life and dignity, and that India's accessibility rules were toothless; they were merely polite suggestions whereas the Rights of Persons with Disabilities Act, 2016 intended binding ones. The court gave the Centre three months to frame mandatory standards. Nearly two years later, the petitioners are back in court because too little has changed. Disabled people should not be made to adapt to systems built without them; AI is the newest such system.

The Chief Commissioner for Persons with Disabilities penalised 155 establishments, government ministries among them, for



Navin Aade
works on climate, disability inclusion and AI at NClude

websites and apps a disabled citizen simply cannot use. While the 2016 Act has required accessible digital services since 2019, compliance remains the exception. This is the ground on which we are now deploying AI.

Inherent bias

AI is not neutral. When researchers ran 21 language models through AccessEval, a benchmark spanning nine kinds of disability, the models became more error-prone, more negative in tone, and more likely to stereotype the moment disability entered the question. A study of the widely used image model CLIP found it 15 percentage points less accurate on photographs taken by blind and low-vision users than on web images, and that objects central to disabled lives, such as a white cane or a Braille display, appeared up to 17 times less often in the datasets used to train such models. You can see this bias in everyday digital interactions as well. Tell a mainstream chatbot you are blind and want to become a software engineer, and it often opens with some version of “I’m sorry you’re blind.” The person asked a career question but the model answered as if they had reported a loss.

Further, a survey of 2,462 users of the NClude platform, which uses these same models to help disabled people complete job applications and government forms on inaccessible websites, revealed findings that were striking: 1,313 users said they had completed a task previously closed to them, but only 543 managed it through AI alone. The rest needed a staff member to step in. A system without that fallback leaves users to

improvise a workaround.

The same neglect is being set in concrete. India's data-centre capacity is projected to more than quadruple by 2030, to 6.5 gigawatts or more. States compete for these projects with power subsidies and duty waivers; Maharashtra this year relaxed its renewable-energy requirement for data centres from 100 to 51%. Rarely does anyone ask what the new load does to a grid already straining at summer peaks, or what the servers' heat adds to cities that are dangerously hot to begin with.

For millions of disabled Indians, this is not a distant environmental debate. Some depend on powered wheelchairs, oxygen machines or other equipment that cannot be switched off when the grid strains. Many are the first to be stranded when a power cut or an inaccessible emergency alert throws daily life into disorder.

None of this is a case against AI, or the infrastructure a growing economy needs. Disabled people should not be asked to surrender tools they depend on in the name of sustainability. Any AI system the government deploys should be tested for disability bias. Training datasets need genuine disability representation, gathered with consent. And State incentives for data centres should carry conditions on renewable sourcing and on grid and heat impact.

Disabled Indians must have a voice in helping to decide what this technology becomes, from the data that trains the models to the grids that keep them running.

Any AI system the government deploys should be tested for disability bias. Training datasets need genuine disability representation, gathered with consent

Source: The Hindu, 6 Oct 2026 · Page 7 (Op-Ed)

VALUE ADDITION · DISABILITY RIGHTS FRAMEWORK

RPwD Act, 2016 replaced the PwD Act, 1995 to align India with the **UN Convention on the Rights of Persons with Disabilities (UNCRPD)**, which India ratified in 2007. It recognises **21 specified disabilities** (up from 7), provides **4% reservation** in government jobs and **5%** in higher-education

seats for persons with benchmark disabilities, and mandates accessibility of buildings, transport and ICT.

Institutions & schemes: Chief Commissioner for Persons with Disabilities (statutory, under the RPwD Act); **Accessible India Campaign (Sugamya Bharat Abhiyan)**, launched 3 December 2015; Department of Empowerment of Persons with Disabilities under MoSJE. **Census 2011:** 2.68 crore persons with disabilities (2.21% of population).

AI governance links: **IndiaAI Mission** (2024, outlay ≈ ₹10,372 crore) for compute, datasets and safe & trusted AI; **Digital Personal Data Protection Act, 2023** for consent-based data use.

PRELIMS POINTERS

- ▶ **Article 21** – right to life with dignity now read to include accessibility.
- ▶ **Article 41 (DPSP)** – public assistance in cases of disablement.
- ▶ **Disability** relief is in the State List (Entry 9, List II).

Syllabus Link › GS 2 — Welfare schemes and mechanisms for vulnerable sections; GS 3 — Science & Technology, AI and its applications.



GS 3 PAGE 7 · ENERGY · DATA POINT

06 Coal Stocks Critically Low as Power Demand Rises

WHY IN NEWS

Central Electricity Authority data as of **30 September 2026** show that **84 of India's 191 thermal power plants** (over 44%) had critically low coal stocks. Union Coal Minister **G. Kishan Reddy** denied a shortage, attributing the stress to a **surge in power demand**.

- ◆ **What 'critical' means:** The CEA labels a plant critical when its inventory falls **below 25% of the normative stock** or can support generation for **less than three days**. Critical plants rose sharply in September–October 2026.
- ◆ **Demand shock:** Power demand grew about **10% in 2026** — the highest year-on-year rise in a decade. All-time peak demand touched **270.8 GW on 21 May 2026**, and September saw the most power shortages since August 2023.
- ◆ **Heat and El Niño:** August 2026 was India's hottest since records began in 1901 (mean **28.01°C**, 0.67°C above normal). A strong **El Niño** weakened the monsoon — June had its largest rainfall deficit since 2014 — cutting **hydro generation** and raising reliance on coal.
- ◆ **Coal's dominance:** Coal supplied **79% of total primary energy generation in 2024-25** (Energy Statistics India 2026, MoSPI), against 6.23% for natural gas, 5.47% crude oil and 1.92% lignite. The IEA links record demand to heat and rising ownership of fans and ACs.
- ◆ **Outlook:** Cooler months should ease demand, but lower pressure does not mean supply is improving. Priorities: **rail-rake logistics** and stock discipline, pit-head generation, storage and pumped hydro, demand-side efficiency and faster renewable integration.

PRELIMS POINTERS

- **CEA** — statutory body under the Electricity Act, 2003; attached to the Ministry of Power.
- **El Niño** — warming of the central and eastern equatorial Pacific; usually weakens the Indian monsoon. A **positive IOD** can offset it.

Coal stocks critically low as power demand rises in India

High temperatures and strong El Nino events have increased the pressure on coal-fired thermal power plants

DATA POINT

Netika Francis

On September 28, Union Coal and Mines Minister G. Kishan Reddy on Monday denied any shortage of coal in the country, despite data showing that more than 44% of India's thermal power plants had critically low stocks. Mr. Reddy said the problem was not a coal shortage but a surge in power demand.

According to the Central Electricity Authority (CEA), data as of September 30 show that among the 191 thermal power plants, 84 plants were critically low on stock. The CEA considers a power plant to be critical when inventories fall below 25% of the required normative stock or when the stock can support power generation for less than three days (**Chart 1**).

While data contradict Mr. Reddy's claim, he is right about the increase in demand. India saw an increase of 10% in power demand in 2026 — the highest year-on-year increase in the past decade.

India also saw a surge in power shortages in September 2026, according to a *Reuters* report. The report also states that reliance on coal-fired thermal power plants has increased during this period due to a decline in hydro-power generation. It links this to the El Niño phenomenon (a warming of the central and eastern Pacific that alters atmospheric circulation and weakens monsoon winds over the sub-continent).

India has seen weaker monsoons in the last six years in which it experienced strong El Niño events.

Chart 2 shows India's rainfall departure percentage over the past 20 years, specifically in the monsoon months; June, July, August, and September. The rainfall departure percentage compares the rain that actually fell against the historical average for that ex-

act location and period. The data show that in June, India experienced its highest rainfall deficit for that month since 2014, another year that saw a strong El Niño event.

As **Chart 3** shows, coal was the primary source for 79% of the total energy generated in 2024-25, according to the "Energy Statistics India 2026" report by the Ministry of Statistics and Programme Implementation.

The International Energy Agency (IEA) posits that unprecedented higher temperatures experienced around the world contributed heavily to the rising demand for electricity.

Chart 4 compares India's average power demand (in gigawatts) per month in 2025 with each month's highest temperatures. The country's average power demand rose in the beginning months of the year along with the temperatures, which went from a maximum of 25.53°C in January 2025 to an annual peak of 35.97°C in April 2025. The consequent decline in the demand for energy saw a concomitant dip in temperatures. In their report regarding thermal comfort in India, the IEA states that the surge in energy demand is driven by rising ownership of cooling technologies such as fans and ACs.

According to the IMD, India experienced its hottest August, since nationwide record-keeping began in 1901, along with the rest of the world, in 2026. The national average mean temperature soared to 28.01°C, which is 0.67°C higher than the "normal" temperature of 27.34°C. The country also saw its highest power demand of all-time recently: 270.8 GW on May 21, 2026.

Although India's coal stocks are deteriorating by the day, the later months of the year generally promise lower temperatures and eased power demand. However, the decreased pressure on coal stocks does not imply a decreasing shortage of supply.

High demand

The data for the charts were sourced from the Central Electricity Authority, India Meteorological Department, the Ministry of Power, and the Ministry of Statistics and Programme Implementation.

With inputs from Gauri Singavarapu, who is interning with The Hindu Data Team



CHART 1: As per the Central Electricity Authority, 85 out of 191 thermal power plants have critically low coal stock. The chart shows the number of critically low plants at the end of each month.

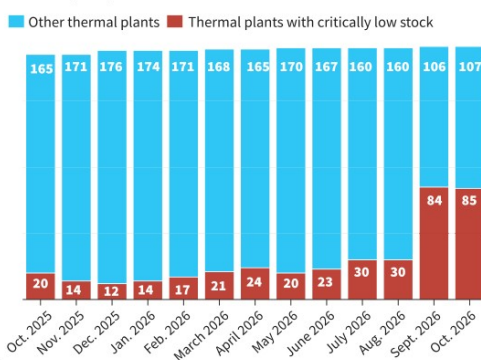


CHART 2: The rainfall departure percentage compares the rain that actually fell against the historical average for that exact location and period. The bars in red show years with moderate to strong El Niño events.

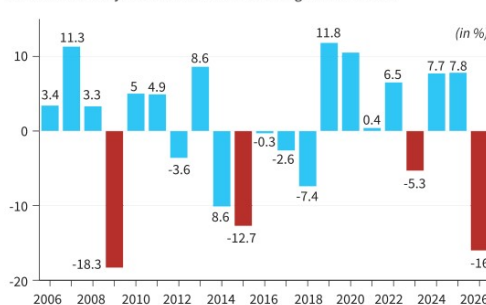


CHART 3: Coal still accounts for most of the energy generation in India. In 2024-25, 79% of total primary energy generation was from coal, as shown below.

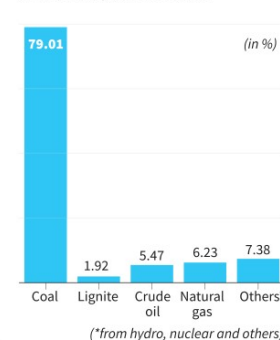
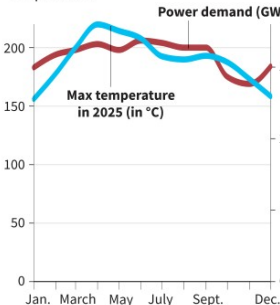


CHART 4: The average power demand rose in the beginning months of 2025 along with temperatures.



Source: The Hindu, 6 Oct 2026 · Page 7 (Data Point)

VALUE ADDITION · COAL: GRADES AND GEOGRAPHY

Formation: coal is a sedimentary fossil fuel formed from ancient plant remains; heat and pressure drive out water and gases, turning peat progressively into higher grades.

Anthracite — 86–97% carbon, highest heating value (found mainly in J&K). **Bituminous** — 45–86% carbon (Jharkhand, West Bengal, Odisha, Chhattisgarh, MP). **Sub-bituminous** — 35–45% carbon. **Lignite (brown coal)** — 25–35% carbon, 30–55% moisture, prone to **spontaneous combustion**, so not transported over long distances (Tamil Nadu–Neyveli, Puducherry, Gujarat, Rajasthan, J&K).

India's position: 5th-largest reserves and 2nd-largest consumer; coal is about **55% of the energy mix** and fuels over **74% of electricity**. **Odisha, Jharkhand and Chhattisgarh** hold about **69%** of reserves. Most reserves are **Gondwana** coal; Tertiary coal occurs in the North-East.

Syllabus Link › GS 3 — Infrastructure: energy; GS 1 — distribution of key natural resources; climate and monsoon.



PRACTICE ZONE

Test Yourself

Mains Answer Writing

QUESTION 1 · GS 3 · 15 Marks · 250 Words

“Unemployment in India is not merely a problem of lack of jobs, but also of the mismatch between education, skills and employment opportunities.” Discuss.

“भारत में बेरोजगारी केवल रोजगार के अवसरों की कमी की समस्या नहीं है, बल्कि शिक्षा, कौशल और रोजगार के अवसरों के बीच असंतुलन की भी समस्या है।” चर्चा कीजिए। (15 अंक, 250 शब्द)

APPROACH

Introduction: Cite the World Bank warning of 1.2 billion young entrants versus ~400 million jobs in the Global South; note India's youthful population (median age under 30).

Lack of jobs: Jobless growth, premature deindustrialisation and automation; agriculture holding nearly half the workforce at ~16% of GDP; MSME credit and regulatory constraints.

Skill mismatch: Degree-centric education with weak vocational training; low employability of graduates; digital divide; low female labour force participation; regional and sectoral mismatches.

Way forward: Labour-intensive sectors (agro-processing, care economy, tourism, green manufacturing); apprenticeships and NEP-linked vocational education; infrastructure-led employment; ease of doing business for MSMEs.

Conclusion: Matching skills to markets is what converts the demographic dividend into growth rather than a demographic disaster.

QUESTION 2 · GS 3 · 15 Marks · 250 Words

India's conservation policy has often remained species-centric and symbolic. In the light of the Great Indian Bustard recovery programme, examine the need for a landscape-based approach to conservation.

भारत की संरक्षण नीति प्रायः प्रजाति-केंद्रित और प्रतीकात्मक रही है। ग्रेट इंडियन बस्टर्ड पुनर्प्राप्ति कार्यक्रम के आलोक में संरक्षण के लिए परिदृश्य-आधारित (लैंडस्केप) दृष्टिकोण की आवश्यकता का परीक्षण कीजिए। (15 अंक, 250 शब्द)

APPROACH

Introduction: Recent release of captive-bred GIBs at Desert National Park; wild population of about 120 after a fall from ~1,260 in 1969.

Achievements: Conservation breeding (57 captive-bred birds, 29 chicks this year), Supreme Court directions on power lines, Schedule I and IUCN Critically Endangered status.

Limits of symbolism: Grasslands treated as 'wastelands'; power-line compromise for solar economics; flagship-only focus while skylarks and rollers decline; examples of Kuno cheetahs, Gir lions, Delhi Ridge planting.

Landscape approach: Protect grassland ecosystems, community-conserved areas and corridors; bird diverters and green-energy siting rules; coexistence and livelihood incentives for pastoral communities.

Conclusion: Landscapes, not species, should be the unit of conservation for durable recovery.

Prelims MCQs

Q1. Consider the following statements regarding optogenetics:

1. It uses light-sensitive proteins introduced into specific neurons to control their activity.
2. Channelrhodopsins were first identified in the green alga *Chlamydomonas*.
3. Channelrhodopsin-2, when exposed to light, allows negatively charged ions to flow into the cell.

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 |

Q2. With reference to the Nobel Prizes, consider the following statements:

1. A Nobel Prize can be shared by not more than three individuals.
2. The Prize in Economic Sciences was instituted by Sveriges Riksbank.
3. A Nobel Prize can be awarded to a nominee who died before the announcement of the prize.

Which of the statements given above are correct?

- | | |
|------------------|------------------|
| (a) 1 and 2 only | (b) 2 and 3 only |
| (c) 1 and 3 only | (d) 1, 2 and 3 |

Q3. The term 'premature deindustrialisation', recently seen in the context of the global jobs crisis, refers to:

- | | |
|--|--|
| (a) A shift of factories from developed to developing countries | (b) Developed countries losing manufacturing jobs due to outsourcing |
| (c) Developing countries seeing manufacturing shares of employment peak at much lower income levels than earlier industrialisers | (d) Replacement of agriculture by services in rural areas |

Q4. With reference to the Asian Games, consider the following statements:

1. The first Asian Games were held in New Delhi in 1951.
2. They are governed by the Olympic Council of Asia, headquartered in Kuwait.
3. The 2026 Asian Games were hosted in Aichi-Nagoya, Japan.

Which of the statements given above are correct?

- | | |
|------------------|------------------|
| (a) 1 and 2 only | (b) 2 and 3 only |
| (c) 1 and 3 only | (d) 1, 2 and 3 |

Q5. Consider the following statements about the Great Indian Bustard:

1. It is listed as Critically Endangered on the IUCN Red List.
2. It is listed in Schedule I of the Wildlife (Protection) Act, 1972.
3. It is listed in Appendix II of CITES.
4. It is the State bird of Gujarat.

How many of the above statements are correct?

- | | |
|----------------|--------------|
| (a) Only one | (b) Only two |
| (c) Only three | (d) All four |

Q6. Which one of the following bustard species is NOT found in India?

- | | |
|------------------------|---------------------|
| (a) Lesser Florican | (b) Bengal Florican |
| (c) Macqueen's Bustard | (d) Kori Bustard |

Q7. With reference to the Rights of Persons with Disabilities Act, 2016, consider the following statements:

1. It recognises 21 types of specified disabilities.
2. It provides for 4% reservation in government jobs for persons with benchmark disabilities.
3. In the Rajive Raturi case (2024), the Supreme Court held that the accessibility rules under the Act were already mandatory and adequate.

Which of the statements given above are correct?

- | | |
|------------------|------------------|
| (a) 1 and 2 only | (b) 2 and 3 only |
| (c) 1 and 3 only | (d) 1, 2 and 3 |

Q8. With reference to the Central Electricity Authority (CEA), consider the following statements:

1. It is a statutory body under the Electricity Act, 2003.
2. It classifies a thermal plant as 'critical' when coal stock falls below 25% of normative stock or can support generation for less than three days.
3. It functions under the Ministry of Coal.

Which of the statements given above are correct?

- | | |
|------------------|------------------|
| (a) 1 only | (b) 1 and 2 only |
| (c) 2 and 3 only | (d) 1, 2 and 3 |

Q9. Consider the following statements about coal in India:

1. Anthracite has the highest carbon content among the grades of coal.
2. Lignite has low moisture content and is ideal for long-distance transport.
3. Odisha, Jharkhand and Chhattisgarh together hold about 69% of India's coal reserves.

Which of the statements given above are correct?

- | | |
|------------------|------------------|
| (a) 1 and 2 only | (b) 2 and 3 only |
| (c) 1 and 3 only | (d) 1, 2 and 3 |

Q10. Consider the following statements:

1. El Niño refers to the warming of sea-surface temperatures in the central and eastern equatorial Pacific.
2. El Niño years are generally associated with a weaker Indian summer monsoon.
3. A positive Indian Ocean Dipole can offset the adverse impact of El Niño on the Indian monsoon.

How many of the above statements are correct?

- (a) Only one (b) Only two
(c) All three (d) None

ANSWER KEY & RATIONALE

Q1 – (b)	Q2 – (a)	Q3 – (c)	Q4 – (d)	Q5 – (b)
Q6 – (d)	Q7 – (a)	Q8 – (b)	Q9 – (c)	Q10 – (c)

Q1 (b) Chr2 opens within 0.2 ms and lets **positively** charged ions flow in, generating an electrical signal.

Q2 (a) Since 1974 the prize is not awarded posthumously; only a laureate who dies **after** the announcement can still receive it.

Q3 (c) Automation and global competition make manufacturing jobs shrink in developing economies before they become rich, a concept popularised by Dani Rodrik.

Q4 (d) All three are correct. India finished 4th at Aichi-Nagoya with 85 medals (21 G, 27 S, 37 B).

Q5 (b) GIB is in **CITES Appendix I** and is the State bird of **Rajasthan**.

Q6 (d) The Kori Bustard is African. India's four bustards are the GIB, Lesser Florican, Bengal Florican and Macqueen's Bustard.

Q7 (a) The Court found the rules 'toothless' guidelines and directed the Centre to frame **mandatory** accessibility standards.

Q8 (b) The CEA is attached to the **Ministry of Power**, not the Ministry of Coal.

Q9 (c) Lignite has **high** moisture (30–55%) and is prone to spontaneous combustion, so it is not carried over long distances.

Q10 (c) All three are correct; this year's strong El Niño cut rainfall and hydro output, pushing up coal dependence.

Prelims Trap-Setters

NOBEL POSTHUMOUS RULE Not awarded posthumously since 1974 — but a laureate who dies *after* the announcement still receives it.

ECONOMICS NOBEL Instituted by **Sveriges Riksbank** (1968); it is formally the 'Sveriges Riksbank Prize', not one of Nobel's original five.

CHR2 ION FLOW Light opens it for **positive** ions (cations), not negative ones; halorhodopsin, a chloride pump, silences neurons.

GIB LISTINGS **CITES Appendix I** and **CMS Appendix I** — not Appendix II; State bird of **Rajasthan**, not Gujarat.

CEA'S MINISTRY Statutory body under the Electricity Act, 2003, attached to the **Ministry of Power** — not Coal.

LIGNITE Lowest carbon (25–35%) and **high** moisture; Neyveli (Tamil Nadu) is the classic location.

MEDAL TALLY ORDER India and Uzbekistan both won 21 golds; India ranked higher on **silvers**, not on total medals.

Prelims Bytes · Static Recall

IUCN RED LIST Categories run Extinct → Extinct in the Wild → Critically Endangered → Endangered → Vulnerable → Near Threatened → Least Concern.

CITES (1973) Appendix I bans commercial trade in species threatened with extinction; Appendix II regulates trade; Appendix III lists species protected by at least one party. Secretariat in Geneva, administered by UNEP.

CMS / BONN CONVENTION (1979) At CMS COP13 in Gandhinagar (2020), the Great Indian Bustard, Asian elephant and Bengal florican were added to Appendix I.

WORLD BANK GROUP Five institutions — IBRD, IDA, IFC, MIGA and ICSID; India is not a member of ICSID.

ENERGY STATISTICS INDIA Annual publication of the National Statistics Office, MoSPI, compiling energy reserves, production and consumption data.

Static Linkage

News	Static concept to revise	Paper
Optogenetics Nobel	Genetic engineering, viral vectors, neurons & nerve impulse	GS 3 S&T
Global jobs deficit	Demographic dividend, types of unemployment, PLFS	GS 3 Economy
Asian Games	OCA, Khelo India, TOPS, sports as State subject	GS 2 Governance
Great Indian Bustard	IUCN, CITES, CMS, WPA Schedules, grassland ecology	GS 3 Environment
AI & disability	RPwD Act 2016, UNCRPD, Article 21, IndiaAI Mission	GS 2 Social Justice
Coal stocks	Coal grades, Gondwana coal, El Niño & monsoon, CEA	GS 1 & 3

Quick Revision Recap

Optogenetics won the 2026 Medicine Nobel for **Deisseroth, Hegemann and Nagel** — light-gated **channelrhodopsins** from the alga *Chlamydomonas* let scientists switch neurons on and off. ♦ The **World Bank** warns of **1.2 billion** young entrants and only **400 million** jobs in the Global South; premature deindustrialisation threatens the demographic dividend. ♦ India finished **4th** at the **Aichi-Nagoya Asian Games** with **85 medals (21-27-37)**, down from 106; 13 golds came from team

events. ♦ Two captive-bred **Great Indian Bustards** were released at **Desert National Park, Jaisalmer**; wild population ≈ 120. ♦ An Op-Ed urges disability-bias testing of government AI, citing **Rajive Raturi (2024)** and the **RPwD Act, 2016**. ♦ **84 of 191** thermal plants had critically low coal stocks on 30 September, as demand rose ~10% amid heat and **El Niño**.

Places & Persons in News

PLACES

Aichi-Nagoya (Japan) — Host of the 2026 Asian Games.

Desert National Park — Jaisalmer–Barmer, Rajasthan; GIB release site and breeding centre.

Valmiki → Buxa — Tigress translocated from Bihar's Valmiki TR to West Bengal's Buxa TR.

Würzburg & Berlin — German universities of Nobel laureates Nagel and Hegemann.

PERSONS

Karl Deisseroth · Peter Hegemann · Georg Nagel — 2026 Nobel in Physiology or Medicine.

Ajay Banga — World Bank President; warned of a 800-million job gap.

Kumkum Mohod — 17-year-old recurve archer; key to India's archery golds.

G. Kishan Reddy — Union Minister of Coal and Mines.

Salim Ali — Ornithologist who proposed the GIB as national bird.

♦ *Read daily · Revise weekly · Write often* ♦