

Schemes (1)

• Vibrant Villages Programme I and II

Detail: VVP-I — approved 15 Feb 2023, a Centrally Sponsored Scheme, Rs 4,800 crore, for villages in 46 blocks on the northern border (Arunachal Pradesh, Himachal Pradesh, Ladakh, Sikkim, Uttarakhand)
Detail: VVP-II — approved 2 April 2025, a Central Sector Scheme, Rs 6,839 crore till FY 2028-29, for 1,954 villages in 334 blocks on the other international land borders, across 17 States/UTs
Detail: 2,906 projects sanctioned and Rs 959.66 crore released under VVP-I; a High-Powered Committee under the Cabinet Secretary may relax other ministries' scheme guidelines for border villages
Exam hook: Land border ~15,106.7 km — Bangladesh 4,096.7, China 3,488, Pakistan 3,323, Nepal 1,751, Myanmar 1,643, Bhutan 699, Afghanistan 106; coastline ~7,516.6 km. Guarding — BSF (Pakistan, Bangladesh), ITBP (China), SSB (Nepal, Bhutan), Assam Rifles (Myanmar); BRO raised 1960

Defence (7)

• CNS visits Mauritius: SAGAR to MAHASAGAR

Detail: Admiral Krishna Swaminathan, 27th Chief of the Naval Staff (charge 31 May 2026), visited Mauritius 10-13 August 2026
Detail: Cooperation with the Mauritius National Coast Guard — training, joint EEZ surveillance, port visits, hydrographic surveys. Mauritius takes part in IONS (2008), MILAN (from 1995), the International Fleet Review, the Goa Maritime Conclave, IOS SAGAR and Exercise AIKEYME (inaugural April 2025, off Dar es Salaam, with Tanzania)
Detail: Both doctrines were announced from Mauritius — SAGAR (Security and Growth for All in the Region) on 12 March 2015, and MAHASAGAR (Mutual and Holistic Advancement for Security and Growth Across Regions) in March 2025
Exam hook: Mauritius — capital Port Louis, EEZ ~2.3 million sq km, ~70% of Indian origin; CECPA (22 Feb 2021, effective 1 Apr 2021) is India's first trade agreement with an African country. Chokepoints — Hormuz, Bab-el-Mandeb, Malacca, Mozambique Channel; IFC-IOR at Gurugram

• NGOPV 'Shruti' launched at GRSE

Detail: Yard 3037, named Shruti, a Next Generation Offshore Patrol Vessel, launched at GRSE Kolkata on 11 August 2026 by Mrs Manika Sadhu, in the presence of Vice Admiral Sanjay Sadhu, Controller of Warship Production & Acquisition
Detail: 11 NGOPVs contracted March 2023 — seven at Goa Shipyard (lead yard) and four at GRSE (follow yard); indigenously designed; roles — maritime surveillance, SAR, protection of offshore assets, HADR, anti-piracy
Detail: Shruti refers to the four Vedas (as distinct from Smriti); the crest carries Ursa Major and a lighthouse
Exam hook: The build sequence — steel cutting → keel laying → launch (the ship is NAMED here; until then it is a yard number) → fitting out → sea trials → commissioning (only then does it carry INS). Yards — MDL Mumbai, GRSE Kolkata, GSL Goa, HSL Visakhapatnam, CSL Kochi (built INS Vikrant). UNCLOS — 12/24/200 nm, via the Maritime Zones Act 1976

• GARUD binoculars and the optics of the OFB reorganisation

Detail: India Optel Limited, a Mini Ratna Category-I DPSU, launched the indigenous GARUD binoculars for the civil market on 13 Aug 2026; made at Ordnance Factory Dehradun, whose optical legacy dates to 1943. Specs — 8x magnification, field of view 7.6°, diopter ±5, ~610 g
Detail: The Ordnance Factory Board was dissolved on 1 October 2021 and its 41 factories reorganised into seven DPSUs — Munitions India, Armoured Vehicles Nigam, Advanced Weapons and Equipment India, Troop Comforts, Yantra India, India Optel, Gliders India
Detail: In 8×42, the first figure is magnification and the second the objective diameter in mm. Magnification = objective focal length ÷ eyepiece focal length; exit pupil = objective diameter ÷ magnification
Exam hook: Dioptre = reciprocal of focal length in metres — positive (converging) corrects hypermetropia, negative (diverging) corrects myopia. Prisms erect the image and fold the path by total internal reflection — the same principle as optical fibre and mirages. PSU tiers — Maharatna, Navratna, Miniratna I and II

• Gallantry awards on the eve of the 80th Independence Day

Detail: President Droupadi Murmu approved 78 gallantry awards including 13 posthumous, plus 89 Mention-in-Despatches — 9 Kirti Chakra (7 posthumous), 1 Bar to Shaurya Chakra, 19 Shaurya Chakra, 5 Bars to Sena Medal, 36 Sena Medal (Gallantry), 3 Nao Sena Medal, 5 Vayu Sena Medal; 1,057 police, fire, home guard, civil defence and correctional personnel also decorated
Detail: Wartime series (in the presence of the enemy) — Param Vir Chakra, Maha Vir Chakra, Vir Chakra. Peacetime series — Ashoka Chakra, Kirti Chakra, Shaurya Chakra. All six instituted 26 January 1950, effective 15 August 1947; the peacetime three renamed from Ashoka Chakra Class I/II/III in 1967
Detail: Combined order of precedence: PVC → Ashoka Chakra → MVC → Kirti Chakra → VrC → Shaurya Chakra — they interleave
Exam hook: The PVC was designed by Savitri Khanolkar and first awarded posthumously to Major Somnath Sharma, 4 Kumaon, for Badgam (1947). A Bar = a second award of the same decoration. The President is Supreme Commander under Article 53(2); Article 18 exempts military and academic distinctions from the abolition of titles

• Loiter Munition Systems contracted for the Artillery

Detail: MoD signed with TATA Advanced Systems and NIBE Pvt Ltd on 14 Aug 2026 for Loiter Munition Systems, ~Rs 1,577 crore, for the Indian Army, under Buy (Indian) through the Fast Track Procedure
Detail: A loitering munition is launched before the target is confirmed, loiters over the area, then dives onto the target and detonates its own warhead — fusing the persistence of a UAV with the strike role of a missile; it collapses the sensor-to-shooter chain, allows man-in-the-loop abort, and offers a favourable cost exchange
Detail: DAP 2020 categories in descending order of indigenous preference — Buy (Indian-IDDM) → Buy (Indian) → Buy and Make (Indian) → Buy (Global – Manufacture in India) → Buy (Global). IDDM requires Indian *design*, not merely Indian manufacture
Exam hook: The Regiment of Artillery is the Army's second-largest arm, motto Sarvatra Izzat-o-Iqbal — fields Dhanush, ATAGS, K9 Vajra-T, M777, Pinaka, BrahMos. Indian loitering munitions in service — Nagastra-1 and SkyStriker

• Raksha Shakti: the defence agenda of the 80th Independence Day address

Detail: Defence power is the fifth of the seven Sapt Dhara streams. Stated priorities — next-generation defence technologies, becoming a global defence supplier, drones and counter-drone systems, hypersonics, and cybersecurity
Detail: Defence exports up nearly 50-fold, reaching about 100 countries; production up nearly 4-fold in 12 years; Mission Sudarshan Chakra progressing rapidly
Detail: Naxalism held areas for four decades at a cost of more than 3,500 police and security personnel; armed Naxalism is described as defeated, though the mindset persists; a vibrant civil defence network is to be built
Exam hook: Hypersonic = Mach 5 and above, via rocket-boosted glide vehicles or scramjet-powered cruise missiles; hard to intercept because they fly lower, manoeuvre, and compress decision time. Counter-UAS spans detection (radar, RF), soft kill (RF jamming, GNSS spoofing) and hard kill (interceptors, directed-energy weapons)

• COAS visits Nepal and the honorary General tradition

Detail: General Dhiraj Seth, COAS, visited Nepal 17-19 August 2026 — wreath at the Army Pavilion, Tundikhel; briefing by the DGMO, Nepali Army; Investiture Ceremony at Rashtrapati Bhawan, where President Ram Chandra Paudel conferred the Honorary Rank of General of the Nepali Army; address at the Army Command and Staff Course, Shivapuri; Ex-Servicemen Rally at Pokhara
Detail: The reciprocal honorary rank dates from 1950, when General K.M. Cariappa was the first recipient; India first reciprocated in 1969. It attaches to the office, and has run unbroken for 76 years
Detail: Foundations — Sugauli Treaty 1816; Tripartite Agreement 1947 (India-Nepal-Britain, on Gorkha service); Treaty of Peace and Friendship 1950 (open border). Border ~1,751 km, open, guarded by the SSB; Nepal is landlocked
Exam hook: Exercise Surya Kiran is the India-Nepal joint exercise, held alternately, begun 2011 at Vairengte; 18th edition at Saljhandi, January 2025. Gorkha recruitment has been on hold since 2022 over Agnipath, which Nepal views as inconsistent with the 1947 framework. The relationship is called 'Roti Beti Ka Rishta'

Environment (2)

• An unusually thick ozone layer over the Bay of Bengal

Detail: Indian scientists observed an ozone-rich layer at 21-23 km over the North Bay of Bengal — several km below the usual 25-30 km peak, within the 15-35 km ozone layer

Detail: It lasted more than a day and appeared at night as well as by day, ruling out photochemistry. The cause is horizontal transport of ozone-rich air plus downward motion and adiabatic compression, consistent with the Brewer-Dobson circulation

Detail: Observed with the indigenous 206.5 MHz ARIES ST Radar at Nainital, radars at Haringhata, Gadanki and Kochi, ozonesondes, Aura MLS and INSAT-3DR, under Phase-I of NetRAD-ASMA; published in *Earth and Space Science* (AGU)

Exam hook: 1 Dobson Unit = a layer 0.01 mm thick at STP; global average ~300 DU; an ozone hole is below 220 DU. Vienna Convention 1985 → Montreal Protocol 1987 → Kigali Amendment 2016 (HFCs); World Ozone Day 16 September

• Multi-Sectoral Central Team on Himalayan cloudbursts

Detail: Constituted for Himachal Pradesh — NDMA, CBRI Roorkee, IITM Pune, IIT Indore, with inputs from IMD, CWC and GSI; assesses causes, ground conditions and long-term measures

Detail: IMD defines a cloudburst as 100 mm or more of rain in one hour over about 20-30 sq km

Detail: Mechanism — orographic lifting → adiabatic cooling → latent heat release → deep cumulonimbus convection → updrafts suspend the column → collapse. Cascade — flash flood → debris flow → landslide → river blockage

Exam hook: GLOFs arise from moraine-dammed glacial lakes — South Lhonak, Sikkim (Oct 2023) and Chamoli (Feb 2021). DM Act 2005 — NDMA under the PM, SDMA under the CM, DDMA under the Collector; Sendai Framework 2015-2030; CDRI headquartered in New Delhi

Sci/Tech (4)

• National Quantum Mission: progress and targets

Detail: Approved April 2023, outlay Rs 6,003.65 crore for eight years (2023-24 to 2030-31), under DST; Annual Quantum Conclave 10-11 April 2026

Detail: Four Thematic Hubs — Quantum Computing at IISc Bengaluru (with C-DAC), Quantum Communication at IIT Madras (with C-DOT), Quantum Sensing & Metrology at IIT Bombay, Quantum Materials & Devices at IIT Delhi; 14 Technical Groups, 17 Project Teams, 23 Quantum Teaching Laboratories, 17 startups

Detail: Targets — 50-1,000 physical qubits in eight years; satellite-based QKD over 2,000 km; inter-city fibre QKD over 2,000 km

Exam hook: Superposition means n qubits represent 2^n states; entanglement correlates them; measurement collapses the state; decoherence is the main obstacle. QKD security rests on the no-cloning theorem and on eavesdropping disturbing the states; post-quantum cryptography resists Shor's and Grover's algorithms

• A 3D model for forecasting Coronal Mass Ejections

Detail: DST announced a three-dimensional magnetohydrodynamic simulation by the Indian Institute of Astrophysics, published in the *Astrophysical Journal*, computed on the NOVA HPC facility

Detail: The trigger of a CME is a magnetic flux rope — a twisted bundle of field lines in plasma. As it rises it stretches the overlying field; reconnection begins gradually with a thin current sheet before impulsive expulsion. Key finding: the rate of magnetic reconnection correlates monotonically with CME acceleration

Detail: Validated with NASA's HMI and AIA aboard the Solar Dynamics Observatory, using the area swept by flare ribbons as the measure of reconnected flux

Exam hook: A solar flare is electromagnetic radiation, arriving in ~8 minutes 20 seconds; a CME is matter, arriving in 1-3 days. Core ~15 million K, photosphere ~5,500 °C, corona ~1 million K (the coronal heating problem); solar cycle ~11 years, full magnetic cycle ~22. Aditya-L1 launched 2 Sept 2023 by PSLV-XL, reached halo orbit at L1 (1.5 million km) on 6 Jan 2024, seven payloads incl. VELC

• VIHAAN on the VEGA processor: India's chip design

Detail: MeitY announced that Aheesa Digital Innovations, a Chennai fabless startup under the Design Linked Incentive scheme, achieved first-pass silicon success with VIHAAN, a networking System-on-Chip for fibre broadband built on the indigenous VEGA processor — taped out on Republic Day, production tape-out targeted 2027; ~Rs 40 crore raised from TNIFMC

Detail: Chip design contributes up to 50% of value addition in the semiconductor chain and 15-35% of the bill of materials of electronic products

Detail: Tools provided to 455 organisations (350 academic, 105 startups); DLI firms have 35 tape-outs and raised over US\$100 million; Chips to Startup has produced 245 tape-outs from 71 institutions.

Semicon 2.0 approved July 2026, outlay Rs 1,27,500 crore

Exam hook: VEGA is from C-DAC under the Digital India RISC-V programme; SHAKTI from IIT Madras — both on the open-source, royalty-free RISC-V ISA. Tape-out = despatch of a design to the foundry; first-pass silicon success = it works without a redesign. Models — fabless, foundry, IDM

• CYBER KUSHTI 2026: a hackathon that scores judgment

Detail: Launched by NIELIT (under MeitY) on 15 Aug 2026 as the technical track of NCCDFI 2026, with the ISAC Foundation and CERT-In as Knowledge Partner; registration to 10 September, free, teams of three

Detail: Every team gets an identical, deliberately imperfect Security Assessment Package containing false and duplicated findings, with some real vulnerabilities deliberately omitted. Teams must submit a corrected, prioritised assessment and defend it — and are rewarded for correctly rejecting false findings, not only for finding real ones

Detail: Rounds — The Akhada (online, 15 Sept, 50 teams) → The Dangal (online, 24 Sept, 10 finalists) → The Kesari (in person, 9 Oct, Dr. Ambedkar International Centre)

Exam hook: A false positive is a false alarm, a false negative a miss — both cannot be minimised at once, producing alert fatigue. CERT-In — Section 70B, IT Act 2000, under MeitY, 6-hour incident reporting; NCIIPC — Section 70A, under NTRO, for critical information infrastructure; I4C under MHA runs NCRP and helpline 1930