



VAJIRAM & RAVI
Institute for IAS Examination

The Analyst

CURRENT AFFAIRS Handout

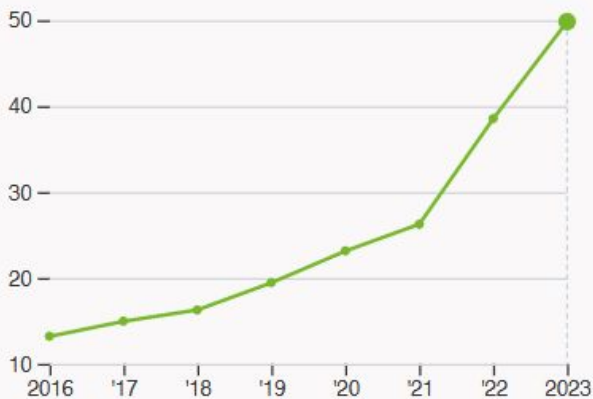
15th June 2026



CONTEXT: India is emerging as a technology provider.

Data

- Scientific Output
 - 3rd in research papers but H-index 925
- Digital Readiness
 - 49th in 2024 Network Readiness Index
 - Leading in AI research papers & ICT exports
- Startup Ecosystem
 - 3rd startup hub
- WIPO Report 2025
 - GII Ranking - 38/139 in 2025
 - Patent Filings - 29% growth
 - High Tech Exports - 18%
 - 22nd in Knowledge and technology outputs



6.1.1 Patents by origin

was equal to 49.86 thousand patents in 2023, up by 29.34% from the year prior – and equivalent to an indicator rank of 19.



6.2.4 High-tech manufacturing

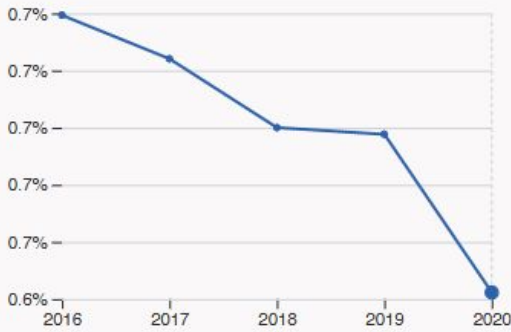
was equal to 621.76 high-tech manufacturing output in billion USD in 2022, up by 15.9% from the year prior – and equivalent to an indicator rank of 31.

Challenges

- R&D expenditure
 - 0.65% of GDP
- Private sector participation
 - Cautious; low-risk
 - "Valley of Death" in Lab-to-Market Translation
- Global technological presence
 - International patent applications
- Human capital
 - Knowledge-intensive employment
 - Brain Drain

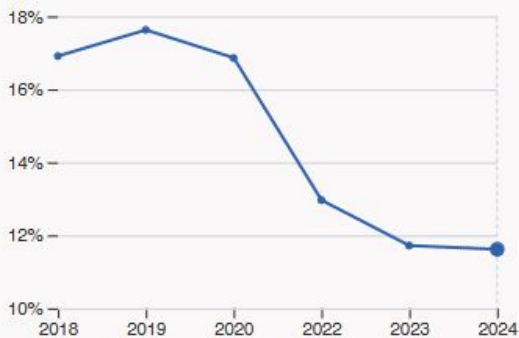


CONTEXT: India is emerging as a technology provider.



2.3.2 Gross expenditure on R&D

was equal to 0.65 % GDP in 2020, down by 0.01 percentage points from the year prior – and equivalent to an indicator rank of 56.

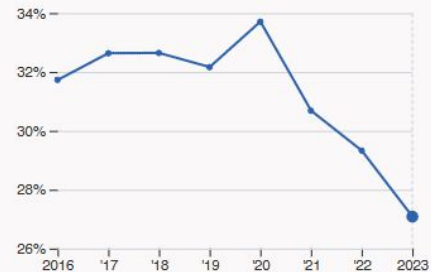


5.1.1 Knowledge-intensive employment

was equal to 11.62 % of total workforce in 2024, down by 0.1 percentage points from the year prior – and equivalent to an indicator rank of 95.

Challenges

- Gender gap in scientific research
 - UN report: Women scientists 14%
 - But proportion of women graduates in STEM: 43%
- Research-to-market linkages
 - Collaboration: academia - industry
- Structural economic constraints
 - Development trajectory: services
 - large-scale industrialisation?
- Regulatory Hurdles
 - patent pendency

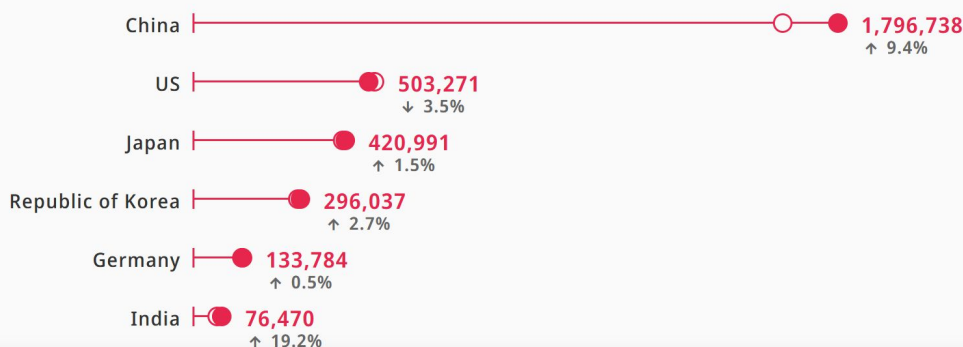


2.2.2 Graduates in science and engineering

was equal to 27.09 % of total graduates in 2023, down by 2.24 percentage points from the year prior – and equivalent to an indicator rank of 35.

Applicants from which countries filed the most patent applications?

□ 2023 ■ 2024



Innovation Ecosystem in India



CONTEXT: India is emerging as a technology provider.

Govt Initiatives

- Anusandhan National Research Foundation
 - research capacity
- VigyanDhara Scheme
 - academic research infra
 - thematic clusters: science-based solutions
- National Deep-Tech Startup Policy
 - ₹20k cr
 - early-stage funding, IP protection
 - academia-industry linkages
- RDI Scheme
 - Incentivise private R&D
 - concessional finance in AI, quantum, biotech
- AIM
 - innovation culture
 - incubation centres in universities
 - national mentoring networks
- SHANTI Act, 2025: patents for peaceful uses of nuclear energy

IP Protection Steps

- IPR Policy, 2016
 - CIPAM
 - Objectives
 - i. IPR Awareness: Outreach & Promotion
 - ii. Generation of IPRs
 - iii. Legal Framework
 - iv. Commercialization of IPRs
 - v. Enforcement and Adjudication

vi. Human Capital Development

- Amendments to IPR Rules, 2024
 - Expedited examinations
 - Timelines, application fees
 - Digitalisation
- Kalam Program for IP Literacy and Awareness, 2020

Suggestions

- R&D expenditure: 2%
- Private sector investment
 - Tax incentives
 - Research partnerships
 - Access to funding
- Industry-academia collaboration
 - Quadruple Helix Framework for Lab-to-Market
 - Technology transfer Cells
 - Sponsored Labs
- Deep-tech entrepreneurship
 - Venture capital support
 - Funding for long-gestation
 - Procurement and "First-User" Policies
- Human Capital
 - Reverse Brain Drain, CoE
 - Women in STEM
- Regulations
 - Regulatory sandboxes
 - Single-permit systems for startups to scale
 - National Sovereign Patent Fund
- Industrial Policy
 - Advanced manufacturing capabilities
 - Design & Make in India
 - Innovation Clusters in Tier-II/III



CONTEXT: India is emerging as a technology provider.

IPR Reform: Before & After

CATEGORY	BEFORE REFORM	AFTER REFORM
Institutional Mechanism	<ul style="list-style-type: none"> • Backlogs • Lack of Manpower • Physical filings 	<ul style="list-style-type: none"> • Backlogs reduced • Process Digitized • Manpower Augmentation
Compliance and process	<ul style="list-style-type: none"> • Procedural Complications • Excessive Forms & Compliances issue 	<ul style="list-style-type: none"> • Simplification of Form-27 • One Form-30 in Patents, where no other Form is applicable. • Simplification of Trademark Forms, reduced from 74 to 8 Forms.
Fee	<ul style="list-style-type: none"> • High fee for Small Key players such as Small Entity (MSME) • No concept of Start-up in Patents 	<ul style="list-style-type: none"> • Official fee for Start-ups reduced by 80%. • In Patents, official fee for Small Entity is now equivalent to the fee payable by Start-ups and Natural Persons. • Reduced fee structure for the registration of an authorized user of a registered geographical indication
Examination	<ul style="list-style-type: none"> • Slow Registration Process & Examination Proceedings • No concept of Expedited Examination 	<ul style="list-style-type: none"> • Facilities for Expedited Examinations are now available to Startups, SMEs, Female applicants, Government Departments, Govt. institutions, applicants under PPH and those applicants who choose Indian IP Office as International Search Authority • Reduced Pendency

MAINS PRACTISE QUESTION

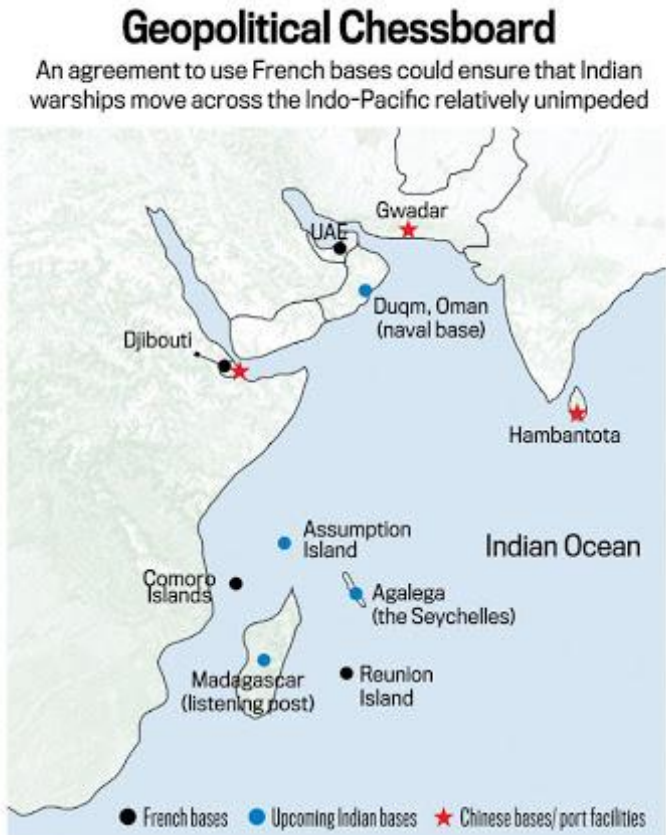
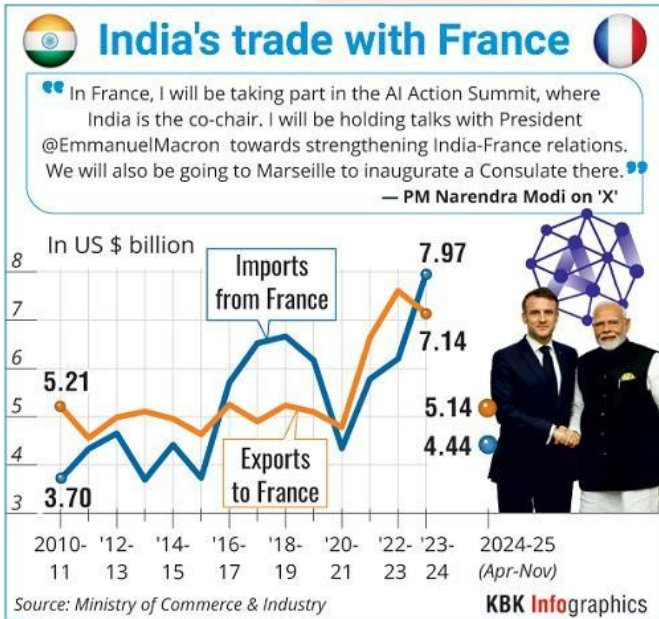
Discuss the major challenges facing India's innovation ecosystem. Examine the steps taken by the government to promote innovation and entrepreneurship. Suggest measures to build a strong innovation-driven growth model.



CONTEXT: India, France set new targets.

- Historical
 - Nuclear Fuel – Tarapore in 1984
 - Viking rocket technology
 - Strategic partnership 1998
- Economic
 - 11th foreign investor, \$10 bn from 2000 to 2022, 1.7% of total FDI
- Geopolitical & Nuclear
 - Civil Nuclear Agreement
 - 6 EPRs in Jaitapur, SMRs cooperation
 - UNSC, NSG

- Climate Change & Green Energy
- Technology
 - Joint Vision for Space Cooperation in 2018
 - TRISHNA – Joint Earth Observation Mission
- Horizon 2047 Agreement – supercomputing, cloud computing, artificial intelligence, and quantum technologies



- Defence Cooperation
 - 2nd defence supplier – 2017-2021
 - Scorpene submarines: Built in India
 - Rafale fighter jets
 - Tata-Airbus partnership: Manufacturing C295



CONTEXT: India, France set new targets.

- Strategic engagement in IO
 - 2018: Joint Strategic Vision of India-France Cooperation in the IOR
 - Maritime Security
 - La Perouse Exercise
 - Paris-Delhi-Canberra Axis
 - French pivot
- Engagement in Africa
 - Largest EU trade partner in Africa
 - 8% of FDI into Africa
 - French speaking countries - Mali, Togo
 - Debt relief, capacity building
 - SDGs

• KEY OUTCOMES

- Adoption of India-France Innovation Roadmap 2030
- Creation of a Joint India-France AI Working Group focused on AI governance
- MoU on establishment of a National Centre of Excellence for Skilling in Aeronautics and Allied Sectors at NSTI, Kanpur
- Expanded possibilities for using India's UPI in France
- Incubation of an additional 10 Indian start-ups at Station F, Paris
- Establishment of a Centre of Digital Sciences between Department of Science and Technology (DST) and Institut National de Recherche en Sciences et Technologies du Numérique (INRIA)
- Establishment of an ICCR India Chair on 'AI, Innovation and Culture' at Université Paris-Saclay
- Letter of Intent between Indian Council of Medical Research and Health Data Hub of France
- Setting up a high-level mechanism for realising the goal of doubling bilateral trade in the next five years, building on the existing Economic and Financial Dialogue
- Institution of an Economic Security Dialogue
- Declaration of Intent on cooperation on railway and high-speed railway development in India
- General Security Agreement on the exchange and protection of classified information
- Letter of Intent between ISRO and CNES on cooperation in microgravity research and human space exploration

Challenges

- Geopolitical Approaches
 - Ukraine Conflict
 - Economic ties with China
- Stalled projects
- Trade Imbalance
- IPR concerns

Way Forward

- Implementation of Agreement on Migration and Mobility
 - Joint action against irregular migration
- Trade and Investment
 - JVs, technology partnerships
 - Cooperation in AI, RE, defence
- Timely Project completion
 - JWG for monitoring.
 - Expedite Jaitapur Nuclear Plant

MAINS PRACTISE QUESTION

Examine the significance of India France ties. What are the challenges that may hinder the further deepening of the relations between the two countries?



Newspaper : The Indian Express; Page No : 15

How India cut child deaths faster than the world

Schemes to tackle Child and Maternal Mortality

- JSY
 - institutional delivery
 - especially weak socio-economic status: SC, ST, BPL
- PM Matru Vandana Yojana
 - maternity benefit of Rs. 5000/-
 - for first living child of family
 - 'Mission Shakti': PMMVY 2.0
 - i. behavioural change towards girl additional cash incentive for second child, if girl
- JSSK
 - eliminating out-of-pocket expenses
 - free delivery, including caesarean
 - free transport, diagnostics, medicines, consumables, diet, blood

- Surakshit Matritva Aashwasan (SUMAN)
 - assured, dignified, respectful and quality healthcare at no cost
 - Zero tolerance for denial of services
- PM Surakshit Matritva Abhiyan
 - free assured and quality Antenatal Care on 9th of every month
 - Extended PMSMA
 - i. quality ANC to pregnant women
 - ii. financial incentivization for the identified high risk pregnant women
- LaQshya
 - quality of care in labour room
- Monthly Village Health, Sanitation and Nutrition Day
- Reproductive and child health (RCH) portal
 - tracking of pregnant women and new-born
 - antenatal, institutional delivery and post-natal care



UNESCO Nomination for Xuanzang's work



SYLLABUS: Prelims: Current Events of National and International Importance
Newspaper : The Indian Express; **Page No : 6**

UNESCO

- specialized agency of UN
 - part of UN Sustainable Development Group
- started in 1945 after WW II
- Earlier group: International Committee on Intellectual Cooperation
- 5 main areas
 - Education, Natural sciences, Social and human sciences, Culture, Communication and information
- Member countries: 194; 12 associate members
- Headquarter: Paris, France
- Functions of UNESCO
 - supports efforts to eliminate illiteracy, extension of free education, acts as a clearinghouse for the exchange of ideas and knowledge
 - work with NGOs, private companies
 - designates and maintains a list of World Heritage Sites
 - i. places of outstanding universal value that deserve protection for future generations

Xuanzang

- Original name: Chen Yi
- Hiuen Tsang
- Chinese Buddhist monk, scholar, traveler
- visited India: 7th century CE

Journey

- Entered Gandhara (Pak-Afghan region)
- Crossed Khyber Pass and reached Purushapura (Peshawar)
- Saw Kanishka Stupa
- Reached Kashmir in 631 CE
- Visited Mathura, Kannauj, Ayodhya, Varanasi
- Met King Harsha and stayed at his court
- Attended religious assemblies and Kumbh Mela at Prayag
- Nalanda University
 - Stayed for 5 years
 - Studied under scholar Shilabhadra
 - Specialized in Yogachara (Vijnanavada) school of Buddhism
- Returned to China in 645 CE after 16 years of travel

Contribution to Buddhism

- Collected 600 original Buddhist manuscripts from India and Central Asia
- Brought sacred texts, relics, and Buddha images back to China
- Translated Sanskrit Buddhist texts into Chinese
- Spread Mahayana Buddhism in China
- Promoted Yogachara (Vijnanavada) school
- His work Cheng Weishi Lun



SYLLABUS: Prelims: Economic and Social Development–Sustainable Development;
Newspaper : The Indian Express; **Page No : 14**

- Achieved 20% last year (5 years before target)
- E20 (80% petrol, 20% ethanol) now standard nationwide
- E10–certified or older vehicles faced transition in just 3 years: little warning
- E25 now targeted as base fuel

Problems for consumers

- **Engine damage:** Ethanol higher water content >> corrosive >> older engines lacking high-grade aluminum/steel casts
- **Mileage drop:** 5–12% after E10→E20 shift
 - Petroleum Ministry: “marginal”
- **No fuel choice:** unlike Brazil
 - Brazilian law: discount for higher ethanol blends
- **Ignition issue:** hard to start on winter mornings as ethanol burns at higher temp
- **Exponentially worse performance**
 - E10 little difference
 - Above E10: performance worsens exponentially – impact from E20 to E25 > from E10 to E20
 - Petroleum Ministry: concerns not backed by “scientific evidence”

Problems for automakers

- E25 transition: additional engineering and validation
 - a. Engine calibration, fuel-system durability, corrosion resistance
- Vehicle costs increase

- Greater policy clarity
- OMCs can only offer 2 ethanol blends at any given point

Why is govt pushing for blends beyond E20?

- Progressively E20 to E25, then flex-fuel vehicles and E85–E100 fuels
- Dependence on imports – WA conflict >> prices
 - Imports **88.5%** of crude oil
- **Political angle**
 - Agricultural lobby (Maha, UP): sugarcane growers sitting on significant overcapacity
- Rollout only after proper testing, consultations
- BIS notified fuel standards for (22%–30%, E85, E100)

How transition?

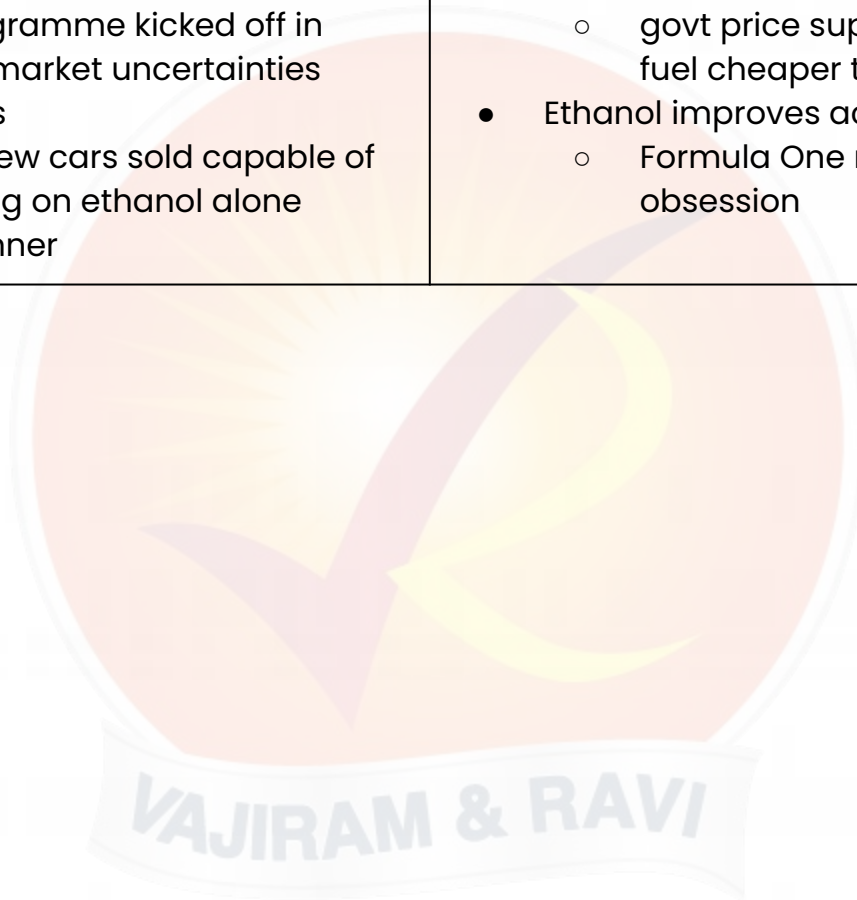
- **Medium term:** maybe 2 fuel categories at pumps
 - Standard fuel – E20 today, or E25 if govt pushes
 - E85 or E100
- High blend: lower price; flex-fuel vehicle owners can decide
- **Automakers**
 - Move to E25 fresh tests on existing vehicles to evaluate compatibility
 - **New vehicles:** recalibrate engines and undergo fresh emissions certification
 - Ultimately, likely shift to flex-fuel vehicles



SYLLABUS: Prelims: Economic and Social Development-Sustainable Development;
Newspaper : The Indian Express; **Page No : 14**

Lesson from Brazil

- Widely adopted flex-fuel vehicles:
 - Govt mandates
 - Price incentives
 - Public awareness campaigns
 - Ethanol programme kicked off in 1970s as oil market uncertainties
 - By late 1980s
 - 9/10 new cars sold capable of running on ethanol alone
 - Phased manner
- Even today Petrol pump option:
 - Blended petrol (27-32% ethanol)
 - E100 (pure hydrous ethanol)
 - Flex-fuel cars hit with consumers
 - govt price support >> blended fuel cheaper than petrol
 - Ethanol improves acceleration
 - Formula One racing is an obsession



Insolvency Regime



SYLLABUS: Prelims: Economic and Social Development

Newspaper : The Hindu; **Page No : 9**

Process under IBC

- Corporate debtor defaults >> apply for CIRP under Section 6
- Minimum default ₹1 crore
- Approach NCLT - 14 days to admit or reject
- Amended mandatory deadline - 330 days
- IRP control of assets and operations
- IRP coordinates the constitution of a CoC
- CoC decides viability - restructuring, or liquidation. appoints an IP
- IP examines proposals for a resolution plan -restructuring, merger
- Eligible plans to the CoC. 66% approval else liquidation
- CoC submits it to Tribunal
- PIRP for MSMEs

IBC Provisions

- Creditors :
 - Operational
 - Financial
- Applies to : Individual/ Company/ Partnerships
- Insolvency Professional (IP)'s Plan
- Two processes of IBC:
 - CIRP
 - Pre-packaged Insolvency Resolution Process



SYLLABUS: Prelims: History of India and Indian National Movement

Newspaper : The Indian Express; **Page No :** 1

Dancing Girl

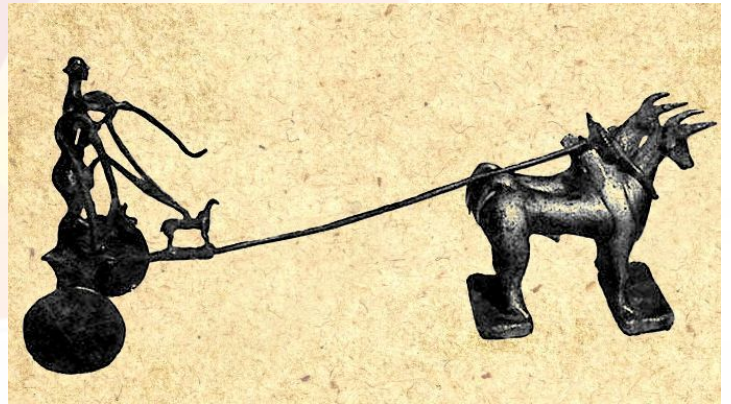
- bronze figurine from IVC (2500 BCE)
- discovered in 1926 by archaeologist Ernest Mackay at Mohenjodaro
- Created using Lost-Wax Casting Technique
 - a wax model is covered with a heat-resistant mold
 - wax is melted out
 - Molten metal is poured into hollow cavity
 - After cooling, mold is removed to reveal the metal object
- Artistic Significance
 - young girl in a confident pose with tilted head and long arms
 - realism with stylized exaggeration
 - Art in Harappan society
- Posture and ornaments convey grace and rhythm



The photo with masked torso in the new arts education textbook for Class 9; (right) the photo in the new Class 6 Social Science textbook

Indian Bronze Sculpture

- Diamabad statuettes
 - Maharashtra around 1500 BCE
 - 'Chariot' with elongated human figures and sturdy bulls
- Kushana Period
 - Jain Tirthankara images from Chausa, Bihar
 - masculine physiques
- Akota Hoard
 - near Baroda
 - Jain Tirthankaras like Mahavira, Parshvanath, or Adinath
 - Yakshinis or Shasanadevis



Indian Bronze Sculpture

- North India
 - 4-headed Vishnu (Chaturanana or Vaikuntha Vishnu)
 - Narasimha avatar
 - Mahishasuramardini Durga
- South India
 - Chola queen, Sembiyan Maha Devi, patron
 - Shiva as Nataraja



SYLLABUS: Prelims: History of India and Indian National Movement

Newspaper : The Indian Express; **Page No :** 1

- Ardhanarisvara:
Thanjavur region
depicting union of
Shiva and Parvati
- Kalyanasundara Murti
 - i. 9th-century
 - ii. Panigrahana
(ceremony of
marriage) is
represented by
two separate
statuettes
 - iii. Shiva with his
extended right
hand accepts
Parvati's
(bride's) right
hand



Bronze sculpture,
Himachal Pradesh



Devi, Chola bronze,
Tamil Nadu



Nataraja, Chola period, twelfth
century CE



Q1. Consider the following assertion:

Assertion: India's innovation ecosystem shows strong output-side performance, but its enabling environment is still uneven.

Which of the following statements best supports the above assertion?

1. India is 3rd in the publication of research papers.
2. India is 49th in the 2024 Network Readiness Index.
3. India is 22nd in knowledge and technology outputs.

Select the correct option.

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

Answer: d

Q2. Consider the following statements regarding Xuanzang:

1. He specialised in the Vijnanavada school of Buddhism.
2. He returned to China in 645 CE after about 16 years of travel.
3. He collected 600 original Buddhist manuscripts from India and Central Asia.
4. He never translated Sanskrit Buddhist texts into Chinese.

How many of the above statements is/are correct?

- a) Only One
- b) Only Two
- c) Only Three
- d) All four

Answer: c

Q3. Consider the following statements:

Statement I: India achieved 20% ethanol blending ahead of the original 2030 deadline.

Statement II: The Government later issued a response stating that concerns about a drastic loss of mileage from E20 were misplaced.

Which of the following relationships is correct?

- a) Statement II contradicts Statement I.
- b) Statement II shows that the policy has progressed, but consumer concerns still need an official rebuttal.
- c) Statement II strengthens the case that the transition has worked without any consumer issues.
- d) Statement I is false because the target was never advanced.

Answer: b

Q4. Arrange the following stages of the Corporate Insolvency Resolution Process in the correct sequential order:

1. Corporate debtor defaults
2. The application is filed before the NCLT
3. NCLT admits the case
4. Interim Resolution Professional takes control
5. The Committee of Creditors is constituted

Select the correct answer using the codes given below.

- a) 1-2-3-4-5
- b) 1-3-2-4-5
- c) 2-1-3-5-4
- d) 1-2-4-3-5

Answer: a

Q5. Match the following details of List I with List II:

List I	List II
A. Chaturanana	1. Union of Shiva and Parvati in the Thanjavur region
B. Shiva as Nataraja	2. North Indian bronze icon
C. Ardhanarisvara	3. The dance form of Shiva
D. Kalyanasundara Murti	4. Panigrahana ceremony

Select the correct answer using the codes given below.

- a) A-2, B-3, C-1, D-4
- b) A-3, B-2, C-4, D-1
- c) A-2, B-4, C-1, D-3
- d) A-1, B-3, C-2, D-4

Answer: a





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