VAJIRAM & RAVI
Institute for IAS Examination

The Analyst

CURRENT AFFAIRS Handout
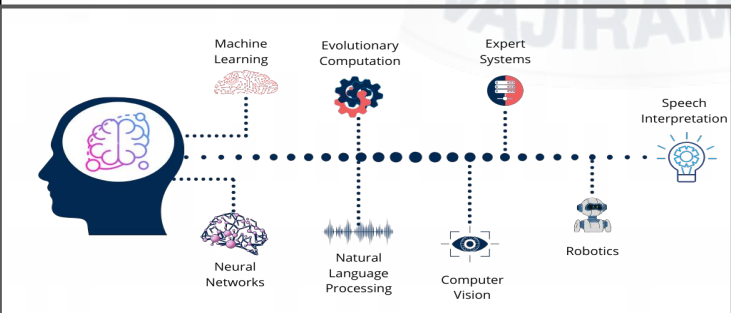
6th February 2025

Artificial Intelligence

CONTEXT: As AI technology advances, it holds the potential to revolutionise numerous industries and aspects of our daily lives, while also raising important ethical considerations regarding its responsible development and deployment.
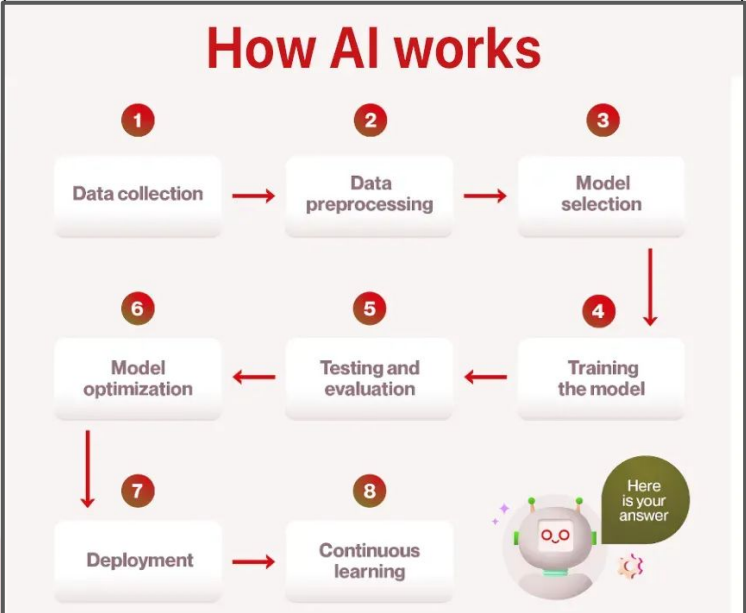
What is Artificial Intelligence?

- Artificial Intelligence (AI) is an emerging technology that enables computers and machines to **simulate human intelligence and problem-solving capabilities**. It involves the development of algorithms and models that enable computers to perform tasks that would typically require human intelligence, such as **learning, reasoning, problem-solving, perception, and decision-making**.

Elements of Artificial Intelligence

Artificial Intelligence refers to machines performing human-like tasks. Its main components are Machine Learning algorithms that train on data, Neural Networks that mimic the brain's structure, and Natural Language Processing that understands human language. AI systems work by taking inputs, processing them with algorithms, and providing intelligent outputs that mimic human cognition and reasoning abilities.

How does AI work?

Types of Artificial Intelligence Based on functionality

Reactive Machines

- React to current data without memory or past experiences
- Examples: IBM's Deep Blue (chess-playing AI) and Google's AlphaGo

Limited Memory Machines

- Can use past data to make decisions but does not have a full history of interactions
- Examples: Self-driving cars, language translation software

Theory of Mind AI

- Understand human emotions, beliefs, intentions and thought processes
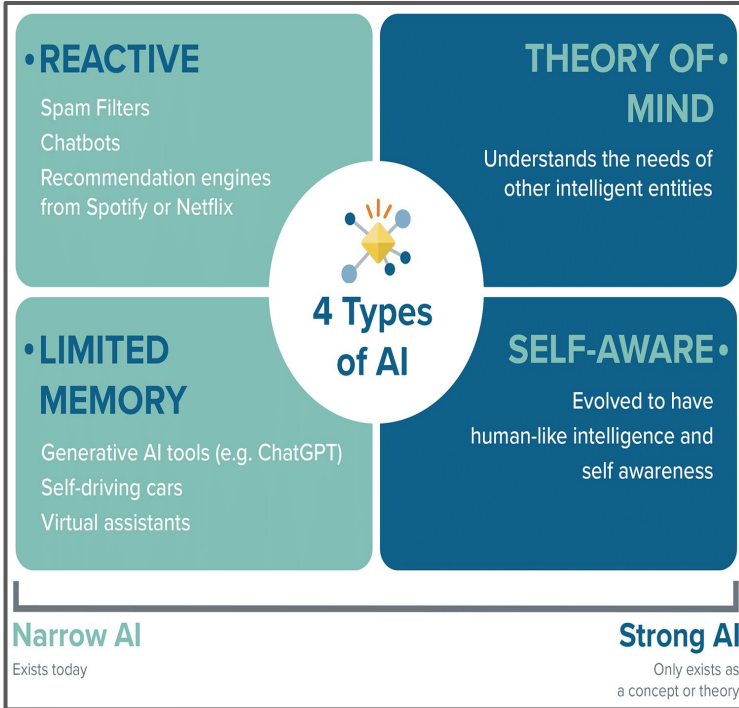- Still in its infancy

Self-Aware AI

- A sense of self-awareness and consciousness, similar to human consciousness
- Highly speculative; not yet achieved

Artificial Intelligence

VAJIRAM & RAVI

CONTEXT: As AI technology advances, it holds the potential to revolutionise numerous industries and aspects of our daily lives, while also raising important ethical considerations regarding its responsible development and deployment.

4 Types of AI

• REACTIVE
Spam Filters
Chatbots
Recommendation engines from Spotify or Netflix

THEORY OF MIND •
Understands the needs of other intelligent entities

• LIMITED MEMORY
Generative AI tools (e.g. ChatGPT)
Self-driving cars
Virtual assistants

SELF-AWARE •
Evolved to have human-like intelligence and self awareness

Narrow AI
Exists today

Strong AI
Only exists as a concept or theory

Applications of AI

- **E-commerce:** personalised recommendations, fraud detection, chatbots for customer support.
- **Education:** adaptive learning, personalised learning plans
- **Healthcare:** diagnosis, drug discovery, patient monitoring
- **Social Media:** content moderation, recommendation systems, sentiment analysis
- **Agriculture:** precision farming, crop monitoring, yield prediction
- **Manufacturing:** quality control, predictive maintenance, supply chain optimization, robotics (automation, inspection, and assembly line tasks)
- **Finance:** fraud detection, risk assessment, investment management
- **Transportation:** self-driving cars, traffic management, route optimization.

Concerns Related to Artificial Intelligence

- **Job loss:** especially in repetitive and routine tasks; Example: Self-checkout systems- cashiers
- **Ethical concerns:** perpetuate biases in training data or algorithms Example: Facial recognition systems showing bias against certain ethnicities
- **Potential misuse:** privacy breaches or cyber-attacks Example: Deep Fakes for spreading misinformation and propaganda.
- **Data dependence:** large, high-quality datasets. Example: Inaccurate medical diagnoses
- **Lack of human traits:** creativity, emotional intelligence, and empathy. Example: Chatbots failing to provide emotional support in mental health applications.
- **High costs:** resource-intensive; research and development.

Initiatives

- **National Strategy for AI (2018):** leverage Artificial Intelligence for economic growth and social development.
- **Sector-specific AI initiatives:**
  -**AI for All:** AI education and research
  -**Responsible AI for Social Empowerment (RAISE):** AI-based solutions for social good
  -**AI for Agriculture:** agricultural productivity and farmer welfare
  -**Responsible AI for Youth:** necessary skills and mindset for AI readiness

Artificial Intelligence

CONTEXT: As AI technology advances, it holds the potential to revolutionise numerous industries and aspects of our daily lives, while also raising important ethical considerations regarding its responsible development and deployment.

- **AI Centers of Excellence:** IITs etc.
- **FutureSkills PRIME:** NASSCOM and MeitY; reskilling and upskilling IT professionals
- **INDIAai:** National AI Portal of India; knowledge portal, a research organization, and an ecosystem-building initiative.

Ethical Way Forward

1. Develop a code of ethics
2. Ensure Diversity and Inclusion
3. Monitor the AI System
4. Educate Employees
5. Transparency
6. Address Privacy Concerns
7. Consider Human Rights
8. Anticipate Risks
9. Conduct Ethical Reviews
10. Partner with Ethical Providers

(UPSC Prelims 2020) **Q. With the present state of development, Artificial Intelligence can effectively do which of the following?**

1. Bring down electricity consumption in industrial units
2. Create meaningful short stories and songs
3. Disease diagnosis
4. Text-to-Speech Conversion
5. Wireless transmission of electrical energy

Select the correct answer using the code given below:

(a) 1, 2, 3 and 5 only
(b) 1, 3 and 4 only
(c) 2, 4 and 5 only
(d) 1, 2, 3, 4 and 5

Ans: (b)

Mains Practise Question

Introduce the concept of Artificial Intelligence (AI). Elaborate on various applications of Artificial Intelligence.
(15 marks, 250 words)

IRNSS- NavIC

CONTEXT: India's space agency recently reported the partial failure of its NVS-02 navigation satellite due to the non-firing of its engines in space.

The **Indian Regional Navigation Satellite System (IRNSS),** also known as the **Navigation with Indian Constellation (NavIC)**, is an independent, stand-alone indigenous navigation satellite system developed by the **Indian Space Research Organisation (ISRO)**.

- Operational in **2018**.
- Remove dependence on the satellite systems of other countries for navigation, especially for **"strategic sectors."**
- The foundation of **satellite-based navigation** is a global **network of satellites in medium earth orbit** that broadcast radio signals.
- **Global Navigation Satellite Systems (GNSS)**.
  -GLONASS - Russia
  -Galileo - EU
  -BeiDou - China

Need of IRNSS – NavIC
- **Military need**: Kargil War, 1999
- **Disaster risk reduction**: highly accurate positioning services
- **Reliant India**: civil navigation purposes like aviation

IRNSS

Indian Regional Navigation Satellite System

IRNSS (NavIC) is designed to provide accurate real-time positioning and timing services to users in India as well as region extending up to 1,500 km from its boundary

NAVIGATION CONSTELLATION CONSISTS OF SEVEN SATELLITES
3 in geostationary earth orbit (GEO) and
4 in geosynchronous orbit (GSO) inclined at 29 degrees to equator

Each sat has three rubidium atomic clocks, which provide accurate locational data
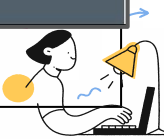
IT WILL PROVIDE TWO TYPES OF SERVICES
1 **Standard positioning service** | Meant for all users
2 **Restricted service** | Encrypted service provided only to authorised users (military and security agencies)

Applications of IRNSS are: Terrestrial, aerial and marine navigation; disaster management; vehicle tracking and fleet management; precise timing mapping and geodetic data capture; terrestrial navigation aid for hikers and travellers; visual and voice navigation for drivers
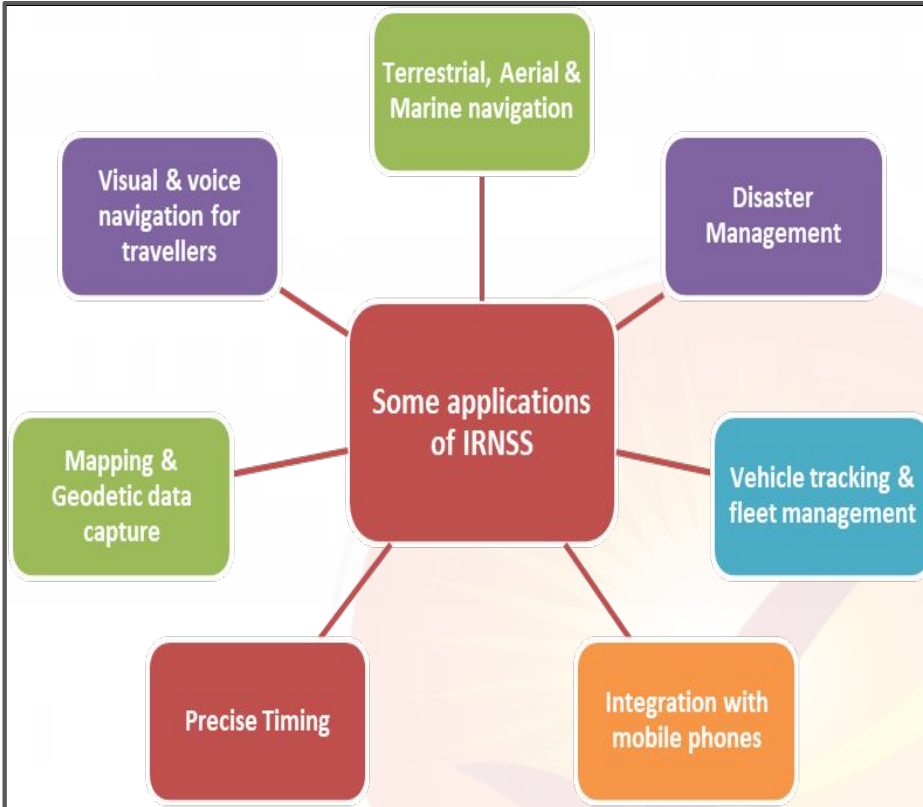
While **American GPS** has **24 satellites** in orbit, the number of sats visible to ground receiver is limited. In **IRNSS, four satellites** are always in geosynchronous orbits, hence always visible to a receiver in a region **1,500 km** around India

GEOSTATIONARY   **GEOSYNCHRONOUS**

IRNSS- NavIC

CONTEXT: India's space agency recently reported the partial failure of its NVS-02 navigation satellite due to the non-firing of its engines in space.

Some applications of IRNSS:
- Terrestrial, Aerial & Marine navigation
- Disaster Management
- Vehicle tracking & fleet management
- Integration with mobile phones
- Precise Timing
- Mapping & Geodetic data capture
- Visual & voice navigation for travellers

Advantages of IRNSS
- **Self-reliant India**: to provide positional service within its service area
  Strengthening friendly relations with neighbours: sharing of data and access with the SAARC nations; an act of diplomatic goodwill
- **Accuracy**: up to 5 metres (GPS ~20 metres)
- **Constant location watch:** (Unlike GPS) satellites in high geostationary orbit
- **India's armed forces**: expand vigilance; avoid cross-border terrorism
- **Last mile reach:** signals arrive in India at a ninety-degree angle ->reach devices situated in crowded regions, thick forests, or mountains.
- **Total authority**: The Indian government has complete authority over IRNSS - NavIC.

Q. With reference to the Indian Regional Navigation Satellite System (IRNSS), consider the following statements: (2018)

1. IRNSS has three satellites in geostationary and four satellites in geosynchronous orbits.
2. IRNSS covers entire India and about 5500 sq. Km beyond its borders.
3. India will have its own satellite navigation system with full global coverage by the middle of 2019.

Which of the statements given above is/are correct?
(a) 1 only
(b) 1 and 2 only
(c) 2 and 3 only
(d) None

Ans: (a)

Mains Practise Question
Q. Why is Indian Regional Navigational Satellite System (IRNSS) needed? How does it help in navigation? (2018)

Rise of UPI Payments

VAJIRAM & RAVI

Digital payments increased more than 3.5 times in value between 2013 and 2024 – from ₹772 lakh crore to ₹2,758 lakh crore. They grew in volume from 222 crore to more than 20,787 crore in the same period. In the last five years alone, digital payments in India increased by 1.6 times in value and 6.7 times in volume, as per the RBI's Payment System Report.

The payments landscape in India is mainly driven by the Unified Payments Interface (UPI), which consolidates multiple bank accounts into one mobile interface.
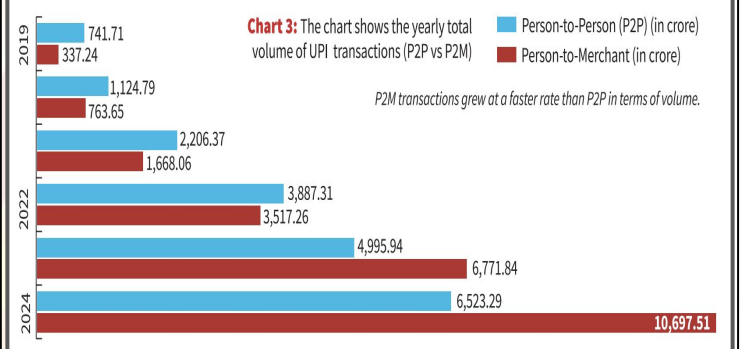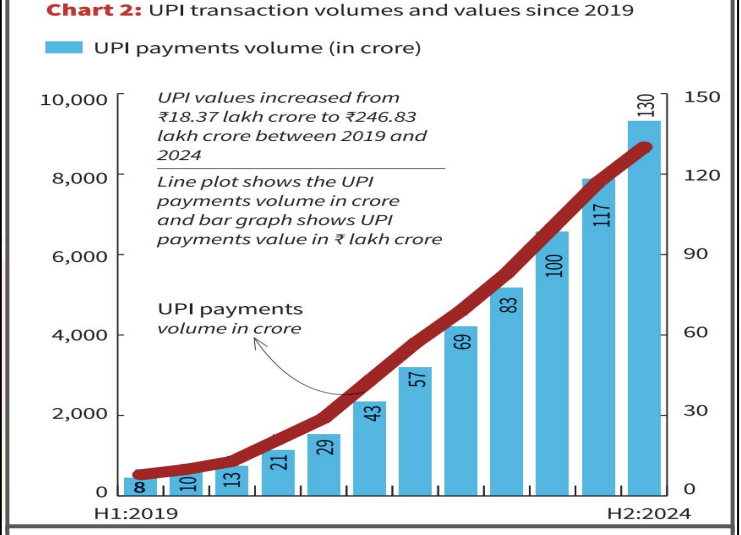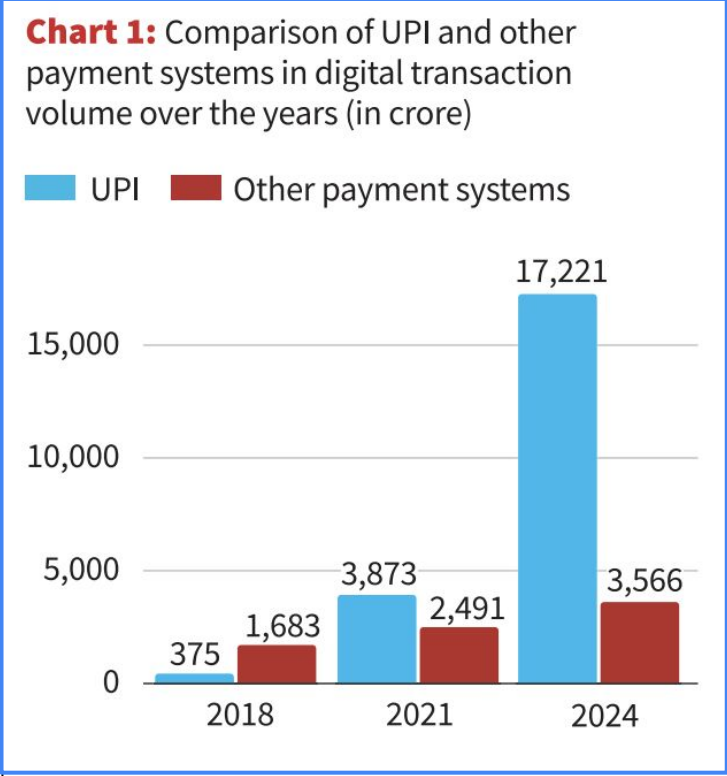
Chart 2: UPI transaction volumes and values since 2019

■ UPI payments volume (in crore)

UPI values increased from ₹18.37 lakh crore to ₹246.83 lakh crore between 2019 and 2024

Line plot shows the UPI payments volume in crore and bar graph shows UPI payments value in ₹ lakh crore

UPI payments *volume in crore*

(Bar values: 8, 10, 13, 21, 29, 43, 57, 69, 83, 100, 117, 130)
(Axis: H1:2019 ... H2:2024)

Chart 1: Comparison of UPI and other payment systems in digital transaction volume over the years (in crore)

■ UPI   ■ Other payment systems

Year	UPI	Other payment systems
2018	375	1,683
2021	3,873	2,491
2024	17,221	3,566

Chart 3: The chart shows the yearly total volume of UPI transactions (P2P vs P2M)

■ Person-to-Person (P2P) (in crore)
■ Person-to-Merchant (in crore)

P2M transactions grew at a faster rate than P2P in terms of volume.

Year	Person-to-Person (P2P)	Person-to-Merchant
2019	741.71	337.24
	1,124.79	763.65
	2,206.37	1,668.06
2022	3,887.31	3,517.26
	4,995.94	6,771.84
2024	6,523.29	10,697.51

Chart 5: Share of transaction volume of various payment methods in total retail digital payments in 2024 (in %)

Payment method	Share
UPI	82.96
NEFT	4.47
Prepaid Payment Instruments	3.37
NACH	3.26
IMPS	2.86
Credit cards	2.15
Debit cards	0.84
NETC (linked to bank account)	0.08
BHIM Aadhaar Pay	0.01
AePS (Fund Transfers)	0.001

Chart 6: Share of the value of various payment methods in total retail digital payments in 2024 (in %)

Payment method	Share
NEFT	52.76
UPI	30.09
IMPS	8.62
NACH	5.14
Credit cards	2.48
Debit cards	0.63
Prepaid Payment Instruments	0.27
BHIM Aadhaar Pay	0.01
NETC (linked to bank account)	0.002
AePS (Fund Transfers)	0.0002

NACH: National Automated Clearing House, NEFT: National Electronic Fund Transfer, NETC: National Electronic Toll Collection, AePS: Aadhar enabled Payment System, IMPS: Immediate Payment Service, Prepaid Payment Instruments are issued in the form of smart cards, wallets, etc.
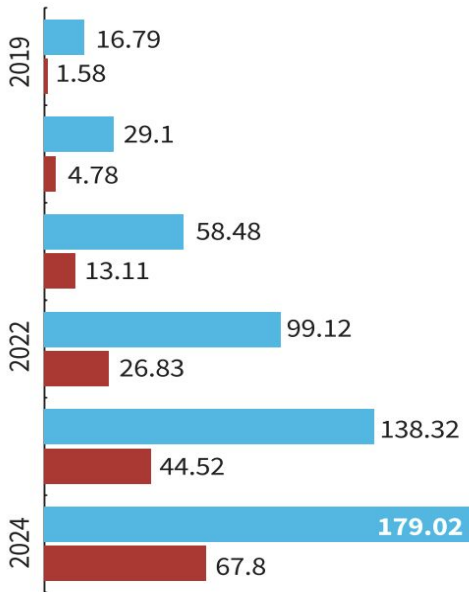
Rise of UPI Payments

Chart 4: Yearly total value of transactions (P2P vs P2M)

- P2P (₹ lakh crore)
- P2M (₹ lakh crore)

Year	P2P	P2M
2019	16.79	1.58
	29.1	4.78
	58.48	13.11
2022	99.12	26.83
	138.32	44.52
2024	179.02	67.8

Q. With reference to digital payments, consider the following statements:

1. BHIM app allows the user to transfer money to anyone with a UPI-enabled bank account.
2. While a chip-pin debit card has four factors of authentication, BHIM app has only two factors of authentication.

Which of the statements given above is/are correct?

(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

Answer: A

Kalbelia Dance

Night school for Kalbelia women

The 28-year-old woman earlier could not read or even recognise letters and was confined mostly to home, doing household chores. Ms. Devi learnt to read and write in Hindi and sign her name at a unique night school, which has unlocked new opportunities for women and children belonging to the poor Kalbeliya community.

The Samata night school, established in the nondescript Bhairwai hamlet in Ajmer district's Kishangarh tehsil about a year ago, is imparting education through a community-designed curriculum which reflects the specific needs and aspirations of Kalbeliyas. The backward community is known for snake charming, folk songs and dances, which form part of its traditions.

Lesson in life skills

Women, who attend the school at night after completing their daily chores, learn Hindi, mathematics, practical life skills, and enjoy songs and games that make learning engaging and relevant.

Rameshwari Devi, 29, is among other beneficiaries of the education at the doorstep, as she received training in stitching and was given a sewing machine, which she now uses to earn by stitching clothes. She can read signboards while travelling and sign her name in the MGNREGS works register,

Tailored for women

The school was launched last year by Manthan Sanstha, a grassroots voluntary organisation based in Kotri village, which identified

The women, who once hesitated to step outside their homes, are now not just literate, they are aware of their health, cultural heritage, and the opportunities available through government schemes. "Women are playing a proactive role in sustaining the school and advocating for their children's education. They stand empowered today, ready to speak for their rights and make themselves heard,"

ta night school, had transformed their lives by supporting their families, earning a livelihood, and becoming role models in their community.

Kalbelia Dance

Kalbelia Community

- The Kalbelias were historically snake charmers and are known for their deep knowledge of snakes and their venom.

- They belong to Rajasthan and primarily live in the **districts of Jaisalmer, Jodhpur, Pali, and Pushkar.**

- Due to legal restrictions on snake charming, many Kalbelias have shifted to performing arts, especially dance and music.

UNESCO Recognition

In **2010, Kalbelia dance and songs were included in UNESCO's Representative List of the Intangible Cultural Heritage of Humanity**, acknowledging their significance in India's folk traditions.

Kalbelia Dance

- **Performed by women**, while men play traditional musical instruments like the **pungi (been), dholak, and khanjari**.

- The dance involves **fast spins, intricate footwork, and sinuous movements** that mimic a snake's slithering motion.

- The dancers wear **black embroidered outfits** with silver threadwork and mirror embellishments.

- The songs are usually **folk narratives and tales** of their ancestors.

Argentina Leaves WHO

ARGENTINA'S PRESIDENT has ordered the country's withdrawal from the World Health Organisation due to "profound differences" with the UN agency, a presidential spokesperson said Wednesday.

President Javier Milei's decision echoes that of his ally, U.S. President Donald Trump, who began the process of pulling the United States out of WHO with an executive order on his first day back in office on January 21.

The loss of another member country will further fracture cooperation in global health, though Argentina was expected to provide only about $8 million to WHO for the agency's estimated $6.9 billion 2024-2025 budget.

Argentina's decision is based on "profound differences in health management, especially during the (COVID-19) pandemic," spokesperson Manuel Adorni said.

He said WHO guidelines at the time led to the largest shutdown "in the history of mankind."Argentina will not allow an international organization to intervene in its sovereignty "and much less in our health," he added.

About WHO

- Established: **7 April 1948** (celebrated as **World Health Day**)

- Headquarters: **Geneva, Switzerland**

- Parent Organization: **United Nations Economic and Social Council (ECOSOC)**

WHO & India

- India is a **founding member** of WHO.

- WHO supports India's **National Health Mission (NHM), Ayushman Bharat, and COVID-19 response.**

- Regional office: **WHO South-East Asia Regional Office (SEARO), New Delhi**

BOLIVIA · BRAZIL · PARAGUAY · CHILE · ARGENTINA · URUGUAY · PACIFIC OCEAN · BUENOS AIRES · ATLANTIC OCEAN

© Encyclopædia Britannica, Inc.

Kuno National Park

VAJIRAM & RAVI

AFTER SPENDING a year in captivity, five more cheetahs were released into the wild at Kuno National Park which includes a mother and three cheetah cubs for the first time.

Chief Minister Mohan Yadav informed that on Wednesday female cheetah Asha and her three cubs were released from the large enclosure into the open jungle at Kuno National Park. Another female cheetah, Dheera, was also released. This brings the total number of cheetahs released into the wild to seven; 19 more will be released in the coming weeks.

The ambitious cheetah project hit a major roadblock in August 2023 after three adult cheetahs "died due to septicaemia after wounds beneath their dense winter coat on the back and neck regions became infested with maggots".

Location:

- Kuno National Park is located in **Sheopur district, Madhya Pradesh**.
- It is part of the **Kuno Wildlife Division**, situated in the **Vindhyan Hills**.

Historical Background:

- Initially established as **Kuno Wildlife Sanctuary** in 1981.
- Upgraded to **Kuno National Park** in **2018** to facilitate wildlife conservation efforts, especially the reintroduction of **Asiatic cheetahs**.

Geographical Features:

- Covers an area of **748.76 sq km**.
- Features **tropical dry deciduous forests**, mainly dominated by **Sal, Kardhai, Khair, and Tendu trees**.
- It is a tributary basin of the **Kuno River**, which is a tributary of the **Chambal River**.

Cheetah Reintroduction Project (2022)

- Under **Project Cheetah**, eight cheetahs were brought from **Namibia** and later more from **South Africa**.
- India declared cheetahs extinct in **1952**, and this project aims at reintroducing them.
- First time a large carnivore has been **relocated from one continent to another**.

THE HOMES FOR CHEETAH IN INDIA

Three potential wildlife sanctuaries that would support cheetah population

Rajasthan

Madhya Pradesh

Kuno-Palpur
Area: 344.686km²
Part of Kathiawar–Gir dry deciduous forests

Shahgarh
Area: About 4,000km²
A fenced region close to India-Pakistan border

Nauradehi
Area: 1,197km²
Spreads over the southern area of Vindhya Range of hills

moefcc Moefcc moefccgoi moef.gov.in

Surajkund Mela 2025

Surajkund Mela

The Surajkund International Craft Fair is scheduled in Faridabad.

Key Points About the Fair:

- connect our craftsmen with art lovers; both an art exhibition and a business centre.
- Richness and diversity of the handicrafts, handlooms and the cultural heritage of India.

- **Started:** 1987

- **Location:** Surajkund, Faridabad, Haryana

- **Organized by:** Haryana Tourism Department in collaboration with the Union Ministries of Tourism, Textiles, Culture, and External Affairs

- **Time:** Held annually in **February**

Q1. Consider the following statements:

1. The National Strategy for AI aims to leverage AI for both economic growth and social development.
2. FutureSkills PRIME is a joint initiative of NITI Aayog and NASSCOM for AI skilling.
3. INDIAai also serves as an AI research organisation.
4. Responsible AI for Youth exclusively focuses on AI-based agri-startups.

Which of the statements given above is/are NOT correct?
   a) 1 and 3 only
   b) 2 and 4 only
   c) 1, 2, and 3 only
   d) 1, 3, and 4 only

Answer: b

Q2. Regarding IRNSS-NavIC, consider the following statements:
1. Unlike GPS, NavIC is a fully geostationary satellite system.
2. It ensures coverage over India and a region extending up to 1500 km beyond its borders.

Which of the statements given above is/are correct?
   a) 1 Only
   b) 2 Only
   c) Both 1 and 2
   d) Neither 1 nor 2

Answer: b

Q3. Consider the following statements regarding the Kalbelia community:
1. Their traditional occupation includes snake charming and folk performances.
2. Kalbelia dance is recognized as an Intangible Cultural Heritage by UNESCO.
3. They are a nomadic tribal group primarily found in Karnataka.

How many of the statements given above is/are correct?
   a) Only One
   b) Only Two
   c) All Three
   d) None

Answer: b

Q4. Consider the following statements :
1. India is a founding member of the World Health Organization (WHO).
2. WHO's South-East Asia Regional Office is headquartered in Manila.
3. WHO does not recognize India's AYUSH systems as part of its global traditional medicine strategy.
4. The WHO Global Centre for Traditional Medicine is India's first WHO collaboration centre.

How many of the statements given above is/are correct?
   a) Only One
   b) Only Two
   c) Only Three
   d) All Four

Answer: a

Q5. Consider the following statements regarding Kuno National Park:
1. It is located in Rajasthan.
2. The park has a mix of dry deciduous forests and savanna ecosystems.
3. Kuno was chosen for India's Cheetah Reintroduction Project.

Which of the statements given above is/are correct?
   a) 1 and 2 only
   b) 3 only
   c) 2 and 3 only
   d) None

Answer: c

VAJIRAM & RAVI

Institute for IAS Examination

A unit of Vajiram & Ravi IAS Study Centre LLP

9-B, Bada Bazar Marg, Old Rajinder Nagar,
New Delhi - 110060 • Ph.: 41007400, 41007500

New No. 62, P Block, 6th Avenue, Anna Nagar,
Chennai - 600040 • Ph.: 044-4330-2121
Visit us at : www.vajiramandravi.com