theIAShub

the IAS hub
Be Your Dream.

APRIL
27

CRUX 10

10 News. 10 Sources. One Place

THE HINDU
ET
BS
TOI
The Indian EXPRESS
livemint
pib
DownToEarth
FORTNIGHTLY ON POLITICS OF DEVELOPMENT, ENVIRONMENT AND HEALTH
Science Reporter
विज्ञान एवं प्रौद्योगिकी मन्त्रालय
MINISTRY OF SCIENCE AND TECHNOLOGY
सत्यमेव जयते



MK Yadav Sir

Table of Contents

1. Medical Devices Policy
2. India Post Payments Bank
3. Kochi Water Metro
4. Liquid Nano DAP
5. Mahanadi River Dispute
6. Midday Meal Scheme
7. SCO Interbank Consortium
8. Eco-Sensitive Zones
9. Quasi-Stellar Radio Sources
10. Uric Acid

BUSINESS STANDARD

Page 6

NATIONAL MEDICAL DEVICES POLICY

(Syllabus: GS Paper 3 - Economy)

Cabinet nod to National Medical Devices Policy

EYES 12% SHARE OF GLOBAL MARKET IN 25 YRS | AIMS TO TAKE SECTOR TO $50 BN BY 2030

SOHINI DAS
Mumbai, 26 April

The Centre on Wednesday gave its nod to the National Medical Devices Policy 2023 with an aim to achieve 10-12 per cent share in the growing global market over the next 25 years.

The current share of India in the global medical devices market is an abysmal 1.5 per cent. Moreover, the policy is expected to help the medical devices sector grow from $11 billion (₹90,000 crore) now to $50 billion (₹4.5 trillion) by 2030.

Mansukh Mandaviya, Union health minister, said that the policy has been designed keeping in mind the need to have a holistic policy framework and will accelerate the growth of this sector.

While various government departments have undertaken programmatic interventions for the sector, the current policy aims to put in place comprehensive focus areas in a coordinated manner.

The Centre has already initiated implementation of the production-linked incentive (PLI) scheme for medical devices. It plans to set up four medical devices parks in Himachal Pradesh, Madhya Pradesh, Tamil Nadu and Uttar Pradesh.

Under the PLI scheme for medical devices, a total of 26 projects have been approved with a committed investment of ₹1,206 crore. Of this, an investment of ₹714 crore has so far been achieved.

"Under the PLI scheme, a total of 14 projects, making 37 products, have been commissioned and domestic manufacturing of high-end medical devices has started. These include Linear Accelerator, MRI Scan, CT-Scan, Mammogram, C-Arm, MRI Coils and high-end X-ray tubes, among others. The remaining 12 products will be commissioned in the near future. Five out of the total 26 projects have been approved recently, under Category B, for domestic manufacturing of 87 products and components," the statement said.

Under the PLI scheme for medical devices, a total of 26 projects have been approved with a committed investment of ₹1,206 crore. Of this, an investment of ₹714 crore has so far been achieved

The policy also aims at establishing "centres of excellence" in academic and research institutions, innovation hubs, "plug and play" infrastructure and support to start-ups. The policy also envisages the creation of a dedicated Export Promotion Council for the sector. This will be an enabler for dealing with various market-access issues.

"In order to enhance ease of doing research and business and further to balance patient safety with product innovation measures such as creation of a 'single-window clearance system' for licensing of medical devices co-opting all the stakeholder departments and/or organisations such as AERB, MeitY, DAHD, etc, enhancing the role of indian standards like BIS and designing a coherent pricing regulation, will be followed," the Centre said in a statement on Wednesday.

In view of the diversity and multi-disciplinary nature of the sector, there is a need to bring together the range of interventions in a coherent manner.

CCEA APPROVES 157 NEW NURSING COLLEGES

The Cabinet Committee on Economic Affairs (CCEA) has approved establishment of 157 new nursing colleges in co-location with the existing medical colleges established since 2014 for investment of ₹1,570 crore. This would add around 15,700 nursing graduates every year.

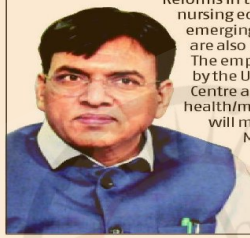
The government plans to complete the project within two years and has laid out detailed timelines for every stage of planning as well as execution. India now has 108,000 MBBS seats and 118,000 BSc nursing seats.

The establishment of these nursing colleges will provide a significant boost to the availability of qualified human resources in health care.

Reforms in the regulatory structure for nursing education to meet with the emerging requirements in the sector are also under consideration.

The empowered committee, headed by the Union health secretary at the Centre and principal secretary, health/medical education in states, will monitor the progress of work.

Medical Colleges have increased from 387 before 2014 to 660 now.



Mansukh Mandaviya
Union Health Minister

Context: The Centre gave its nod to the **National Medical Devices Policy 2023** with an aim to achieve 10-12 per cent share in the growing global market over the next 25 years.

- The **current share of India** in the global medical devices market is an abysmal **1.5 per cent.**
- The policy is expected to help the medical devices sector grow from $11 billion (₹ 90,000 crore) now to $50 billion (₹ 4.5 trillion) by 2030.

Initiatives taken

- **Medical devices** has been recognised as **a sunrise sector under the 'Make in India'** campaign in 2014.
  - Nearly **80% of the medical devices** currently sold in the country are **imported**, particularly high-end devices.
- The Centre has already initiated implementation of the **production linked incentive (PLI) scheme** for medical devices.
  - Under the PLI scheme for medical devices, **a total of 26 projects have been approved** with a committed investment of ₹ 1,206 crore.
- It plans to set up **four medical devices parks** in Himachal Pradesh, Madhya Pradesh, Tamil Nadu and Uttar Pradesh.
- In order to enhance ease of doing research and business and further to balance patient safety with product innovation measures such as creation of a **single window clearance system** for licensing of medical devices co opting all the stakeholder departments and/or organisations such as AERB, MeitY, DAHD, etc, enhancing the role of indian standards like BIS and designing a coherent pricing regulation, will be followed.
- The Cabinet Committee on Economic Affairs (CCEA) has approved **establishment of 157 new nursing colleges** in colocation with the existing medical colleges established since 2014 for investment of ₹ 1,570 crore.

INDIA POST PAYMENTS BANK

(Syllabus: GS Paper 3 - Economy)

India Post Bank Ties up with FIAKS to Make Postmen Digitally Literate

Mumbai: India Post Payments Bank (IPPB) has partnered with the Forum of Industry Academic Knowledge Sharing (FIAKS) platform to provide digital literacy and spread awareness among postmen (or Gramin Dak Sevaks) to avoid digital frauds, said a media release. FIAKS, a cross-border platform comprising over 5,000 members, will carry out research, development, and designing of digital content under the programme FIAKS Digital Shiksha Prasaar Abhiyaan along with other partners. The body will provide virtual and physical training to the postmen identified by IPPB. —**Our Bureau**

Key Features

- It **accepts deposits, offers remittance services,** mobile banking and third-party fund transfers.
- The **maximum limit on deposits for current and savings account** is Rs 1 lakh.
- The bank offers a **4% interest rate** on savings account.
- They can **issue debit cards and ATM cards,** but they **cannot issue credit cards and cannot loan money.**
- It **provides social security payments** like MNREGA wages, direct benefit transfer and give access to third-party services insurance, mutual funds.
- IPPB account holders will be **issued a QR Code based biometric card** with a unique QR code.

Context: India Post Payments Bank (IPPB) has partnered with the Forum of Industry Academic Knowledge Sharing (FIAKS) platform to provide digital literacy and spread awareness among **postmen (or Gramin Dak Sevaks)** to avoid digital frauds.

India Post Payments Bank (IPPB)

- **About**: It was **launched on September 1, 2018** under the Department of Posts, Ministry of Communication.
  - Its **100% equity** is owned by the Government of India.
  - It is **governed by the Reserve Bank of India (RBI).**
- **Objectives**: While its services are **available to all citizens,** the IPPB is primarily focus on serving social sector beneficiaries, migrant labourers, unorganised sector, Micro Small and Medium Enterprises (MSMEs), Panchayats, low-income households, in rural areas and the unbanked and underbanked segments in both the rural and urban areas.
  - IPPB reach and its operating model is built on the key pillars of India Stack - **enabling Paperless, Cashless and Presence-less banking in a simple and secure manner at the customer's' doorstep**, through a CBS-integrated smartphone and biometric device.
  - Leveraging frugal innovation and with a high focus on ease of banking for the masses, IPPB delivers simple and affordable banking solutions through intuitive interfaces available in 13 languages.
- **3 types of saving account:**
  - **Regular Account** : Safal,
  - **Basic Savings Bank Deposit Account (BSBDA)**: Sugam
  - **BSBDA Small**: Saral

PIB

April 27

KOCHI WATER METRO

(Syllabus: GS Paper 3 - Infrastructure)

PM lauds nation's first Water Metro in Kochi

Context: The Prime Minister has lauded the **nation's first Water Metro in Kochi.**

Kochi Water Metro

- **About**: The Kochi Water Metro project envisages the **development of 15 identified routes,** connecting 10 islands along a network of routes that span 78 km.
  - This will be achieved **through a fleet of 78 fast hybrid ferries** plying to 38 jetties.
  - Boats planned for the project are **electrically propelled**. However, they have the backup of diesel-powered generators.
- **Funding**: The project has a total cost of Rs. 1137 crore, which is being **financed by the Kerala state government and a German funding agency called KWF.**
- **Significance**: The Kochi Water Metro project is expected to r**educe pollution and traffic congestions** in the city and also ease access to business areas on the mainland for urban household situated along the Kochi lakeshore.
  - It is also **expected to give a big boost to the tourism sector** in the Kochi backwaters, apart from giving a modern transport facility for people living on islands on the outskirts of Kochi.

Backwater

- Backwater is **water turned back in its course by an obstruction** on opposing current or the flow of tide in a river channel.
- The backwaters **formed by the action of waves and shore currents** creating low barrier islands across the mouths of the many rivers flowing down from the Western Ghats range.
- The **Kerala backwaters are a network of brackish lagoons and canals** lying parallel to the Arabian Sea of the Malabar coast of Kerala.
- The backwaters have a **unique ecosystem**: freshwater from the rivers meets the seawater from the Arabian Sea.

TIMES OF INDIA

Page 15

LIQUID NANO DAP

(Syllabus: GS Paper 3 - Agriculture)

Shah launches first liquid Nano DAP to cut fertiliser import bill

'Will Help Restore Fertility Of Land, Reduce Threat To Farmers' Health'

TIMES NEWS NETWORK

New Delhi: Union home and cooperation minister Amit Shah on Wednesday launched the world's first liquid Nano DAP — a novel nano fertiliser containing nitrogen and phosphorus — whose use will not only reduce India's fertiliser import dependence but also take the country towards sustainable farming and increase the farmers' income by bringing down input cost.

Nano DAP is the second such variant of fertiliser. Nano Urea was the first one in this series, launched in February, 2021. One bottle of 500 ml of Nano DAP can replace a 50 kg bag of traditional DAP (diammonium phosphate). The manufacturing units of Nano DAP have been established in Kalol, Gujarat and Paradeep, Odisha by IFFCO which has patents of both the Nano variant of liquid fertilisers.

ANI



Shah said that the application of nano variants will help reduce usage of granular urea by about 14% and that of DAP initially by 6% and later by 20%

Launching the Nano DAP fertiliser for commercial sale at Rs 600 per 500ml bottle, less than half of the current price of conventional DAP, Shah said use of liquid DAP, through spraying on the plant, will help increase both the quality and quantity of production. It will also help in conserving the soil as farmers by using liquid DAP and liquid urea can increase the number of earthworms in their land and thus move towards natural farming without reducing production and income, he added.

"This will contribute a lot in restoring the fertility of land and will reduce the threat to the health of crores of Indians caused by the chemical fertilisers," said the minister while exhorting the farmers to maximise the use of liquid Nano DAP and urea.

The fertiliser import bill was Rs 2.2 lakh crore in 2022-23. It is estimated that the production of 18 crore bottles of nano DAP till 2025-26 will replace 90 lakh tonnes of conventional DAP. In 2021-22, India imported 91.3 lakh tonnes of urea, 54.6 lakh tonnes of DAP, 24.6 lakh tonnes of MoP (muriate of potash) and 11.7 lakh tonnes of NPK fertilisers.

Shah noted that the application of nano variants will help reduce usage of granular urea by about 14% and that of DAP initially by 6% and later by 20%.

Speaking about his government's efforts to strengthen the cooperative sector, Shah said the government has decided to create two lakh new viable multi-dimensional primary agricultural credit societies (PACS), covering each of the uncovered panchayats across the country, in the next five years through convergence of various existing schemes of departments of fisheries and dairying.

He also said the model bye-laws of PACS have been sent to the states and 17 of them have already adopted these model bye-laws. He said that under the multi-dimensional PACS, a single PACS would be created by combining four PACS providing multi-usage services, fisheries, providing financial loans to farmers and dairy. This will rejuvenate the PACS and also help improve their income, the minister added.

Context: Union home and cooperation minister launched the **world's first liquid Nano DAP** - a novel nano fertiliser containing nitrogen and phosphorus - whose use will not only reduce India's fertiliser import dependence but also take the country towards sustainable farming and increase the farmers' income by bringing down input cost.

- Nano DAP is the **second such variant of fertiliser.**
- **Nano Urea** was the first one in this series, launched in February, 2021.
- One bottle of 500 ml of Nano DAP can replace a 50 kg bag of traditional **DAP (diammonium phosphate).**
- The **manufacturing units of Nano DAP** have been established in Kalol, Gujarat and Paradeep, Odisha by IFFCO which has patents of both the Nano variant of liquid fertilisers.

Nano liquid DAP fertilizer

- **About**: It is a **concentrated phosphate-based fertilizer.**
  - It provides **phosphorus nutrition** throughout the crop growth and development cycle.
- **Manufactured by**: Nano-DAP is jointly manufactured by **Indian Farmers Fertiliser Cooperative (IFFCO)** in association with a private player Coromandel.
  - Nano-DAP will be sold at Rs 600 per bottle of 500 ml.
  - One bottle will be equivalent to one bag of DAP, which currently costs Rs 1,350.
- **Benefits**:
  - DAP is the **second most consumed fertilizer** in the country after urea.
  - Out of the estimated annual consumption of around 10-12.5 million tonnes, local production is around 4-5 million tonnes, while the rest has to be imported.
  - Nano-DAP will help to **bring down India's fertilizer import bill.**
  - It is also expected to contribute to bringing down the annual subsidy on non-urea fertilizers.

THE HINDU

Page 6

MAHANADI RIVER DISPUTE

(Syllabus: GS Paper 2 - Polity & Governance)

Mahanadi row: experts question timing of Chhattisgarh's release of water into river

Satyasundar Barik
BHUBANESWAR

A controversy has erupted over Chhattisgarh's release of Mahanadi water into the lower catchment area of the river system. Water experts and political leaders in Odisha have accused the neighbouring State of attempting to mislead the Mahanadi Water Disputes Tribunal led by former Supreme Court Justice A.M. Khanwilkar

According to Water Resource Department of Odisha, Chhattisgarh has opened 20 gates at Kalma Barrage through which 1,000-1,500 cusecs of water is flowing into Mahanadi in Jharsuguda district - a rarity as Chhattisgarh hardly releases water during non-monsoon season.



Odisha has long been objecting to Chhattisgarh's management of Mahanadi river water in the upper catchment area. FILE PHOTO

Following a complaint filed by Odisha with the Ministry of Jal Shakti under Section 3 of the Inter-State River Water Disputes (ISRWD) Act, the Mahandi Water Disputes Tribunal was formed in March 2018. The tribunal has been asked to submit its report by December 2025.

Context: A massive controversy erupted in **Odisha over Chhattisgarh's release of Mahanadi water** into lower catchment of the river system.

- Water experts and political leaders accused the neighbouring State of attempting to mislead the **Mahanadi Water Disputes Tribunal** led by Supreme Court.

Background

- Odisha has long been **objecting Chhattisgarh's management of Mahanadi River water** in upper catchment. During past couple decades, Chhattisgarh has built several barrages restricting flow of water in lower catchment (Odisha).
- The **non-availability of water in Mahanadi during non-monsoon season** has affected Rabi crops and worsened drinking water.
- Following a complaint filed by Odisha with the Ministry of Jal Shakti under Section 3 of the **inter-State River Water Disputes (ISRWD) Act**, the **Mahandi Water Disputes Tribunal** was formed in March 2018.
    - The Tribunal shall **determine water sharing among basin States** on the basis of the overall availability of water in complete Mahanadi basin, contribution of each State, present utilization of water resources in each state and potential for future development.
    - As per **provisions of ISRWD Act, 1956,** the Tribunal will consist of Chairman and two other members nominated by Chief Justice of India (CJI) from amongst Judges of Supreme Court or High Court.
    - Further, **services of two assessors** who are water resources experts having experience in handling sensitive water-related issues will advise Tribunal in its proceedings.
    - **The tribunal has been asked to** submit its report by December 2025.

Mahanadi River

- **About**: The Mahanadi River system is the **third largest of peninsular India after Godavari and Krishna**, and the largest river of Odisha state.
    - The catchment area of the river extends to **Chhattisgarh, Madhya Pradesh, Odisha, Jharkhand and Maharashtra.**
    - Its basin is **bounded by the Central India hills on the north**, by the Eastern Ghats on the south and east and by the Maikala range in the west.
- **Origin**: It **originates from highlands of Chhattisgarh** through collection of array of streams and reaches Bay of Bengal.
- **Tributaries**: It left bank tributaries are **Shivnath, Mand, Ib, Hasdeo** and right bank are **Ong, parry river, Jonk, Telen.**
- **Major Dams/Projects on Mahanadi: Hirakud Dam (longest dam of India)**, Ravishankar Sagar, Dudhawa Reservoir, Sondur Reservoir, Hasdeo Bango and Tandula are other major projects.
- **Industries**: I**ron and Steel plant** at Bhilai, **Aluminium factories** at Hirakud and Korba, **Paper mill** near Cuttack, **Cement factory** at Sundargarh, **sugar and textile mills and Mining of coal, iron and manganese** are other industrial activities.

INDIAN EXPRESS

Page 8

MIDDAY MEAL SCHEME
(Syllabus: GS Paper 2 - Health)

Centre prods states to procure kitchen items for midday meals via GeM portal

EXPRESS NEWS SERVICE
NEW DELHI, APRIL 26

FLAGGING A "delay" in procuring kitchen items such as stoves and utensils for the midday meal scheme, the Ministry of Education asked states and Union Territories to place orders for bulk purchase of such items through the Centre's Government e Marketplace (GeM) portal.

While the guidelines of the midday meal or PM Poshan scheme nudge states to purchase such items at the block level, instead of placing centralised bulk orders, the provisions also make it clear that the states are free to adopt other routes as well.

In a letter, the Education Ministry has reminded the states that decentralised procurement at the school or block level was preferred to avoid delay. However, the states were also free to go for centralised procurement for cost effectiveness apart from "uniformity of quality, standards and specifications". "The matter has been examined and accordingly, the States and UTs are advised that if the State Government / UT Administration intends to adopt centralised procurement for cure pulses for the scheme through NAFED, the apex organisation of marketing cooperatives for agricultural produce. Many states, including two governed by the NDA, expressed hesitation in doing so.

In the case of kitchen devices, the Centre made its case for procurement through GeM by pointing out the delay. "It is pertinent to note that availability of kitchen devices is a significant factor in facilitating effective preparation of hot cooked meals at the school level," it added in the letter.

EXPLAINED

Change in approach

OVER THE years, the issue of delay in the purchase of kitchen devices came up several times at joint meetings of the Centre and the states on the midday meal programme. Behind the idea of decentralised procurement was to encourage local self-help groups, but the thrust on GeM marks a change in approach.

Context: Flagging a "delay" in procuring kitchen items such as stoves and utensils for the midday meal scheme, the Ministry of Education asked states and Union Territories to place orders for bulk purchase of such items through the Centre's **Government e Marketplace (GeM) portal.**

- The GeM is an **online platform launched by the Ministry of Commerce and Industry,** Government of India in 2016 to facilitate procurement of goods and services by various government departments and organisations.
- It is **open to all government departments,** public sector undertakings, autonomous bodies and other organisations.

Key Points

- While the guidelines of the **midday meal or PM Poshan scheme** nudge states to purchase such items at the block level, instead of placing centralised bulk orders, the provisions also make it clear that the states are free to adopt other routes as well.
- Since 2019, the **financial assistance for kitchen devices** has been linked to enrollment and requirements.
- Accordingly, schools with enrolment up to 50 students can spend up to Rs 10,000 for stoves, chulha, containers and utensils.
- The corresponding amount is Rs 15,000 for schools with enrolment of 51-150 students; Rs 20,000 for 151-250 students; and Rs 25,000 for 250 students and above.

Midday Meal Scheme

- **About**: Largest **school feeding programme** of its kind in the world, covering students enrolled in government schools from Classes 1 to 8.
- **Objective**: to **enhance enrolment** in schools.
- **Nodal Ministry**: Ministry of **Education**.
- **Current Status**: The current version of the programme, **renamed PM Poshan Shakti Nirman or PM Poshan** in 2021.
- **Coverage**: The scheme covers 11.80 crore children **across Classes 1 to 8 (age group 6 to 14).**
- **Legal Entitlement:** It is not just a scheme, but a legal entitlement of all school-going children in primary and upper primary classes, through the **National Food Security Act (NFSA), 2013.**
    - This was also reaffirmed by the **Supreme Court's ruling** in People's Union of Civil Liberties vs Union of India and Others (2001).
- **Funding Pattern**: The allocation of Rs 4.97 per child per day (primary classes) and Rs 7.45 (upper primary) are shared in
    - **60:40 ratio** with states and UTs with a legislature.
    - **90:10** with the Northeastern states, Jammu and Kashmir, Himachal Pradesh and Uttarakhand.
    - The Centre bears **100% of the costs in UTs without legislature.**

PIB April 27

SCO INTERBANK CONSORTIUM

(Syllabus: GS Paper 2 - International Organisations)

XIX SCO IBC Council Meeting held in Goa

Context: Under the chairmanship of India, the XIX Council Meeting of the **Shanghai Cooperation Organisation Interbank Consortium (SCO IBC)** was held in Goa.

- The meeting saw participation from representatives of member banks including **Development Bank of Kazakhstan, China Development Bank, RSK Bank (Kyrgyzstan), Habib Bank Limited (Pakistan), VEB.RF (Russia)**, Savings bank of the Republic of Tajikistan Amonatbonk, and National Bank for Foreign Economic Activities of the Republic of Uzbekistan.

India proposed four areas of cooperation for SCO IBC Members

- **Expansion of cooperation:** Efforts to be made towards taking initiatives to further expand cooperation among member banks.
- **Exchange of experience and skills:** Emphasis on exchange of experience, skills, and personnel training among SCO IBC Member Banks, building on positive strides already made in this direction.
- **Electronic Collection of signed documents:** Support for the initiative to form an Electronic Collection of the SCO IBC signed documents for the 20th anniversary of the Consortium.
- **Strengthening partnerships**: Encouragement for member banks to strengthen partnerships within the framework of SCO IBC.

SCO Interbank Consortium

- The Shanghai Cooperation Organisation Interbank Consortium is **a platform for joint financing of development projects** by members and other participants of the Shanghai Cooperation Organisation.
- The SCO Interbank Consortium was **created in October 2005** during the 2005 SCO Summit.
- The consortium was among several **economic integration projects** announced during the summit.
- The **first meeting** of the SCO Interbank Association was **held in Beijing on 21–22 February 2006.**

DTE

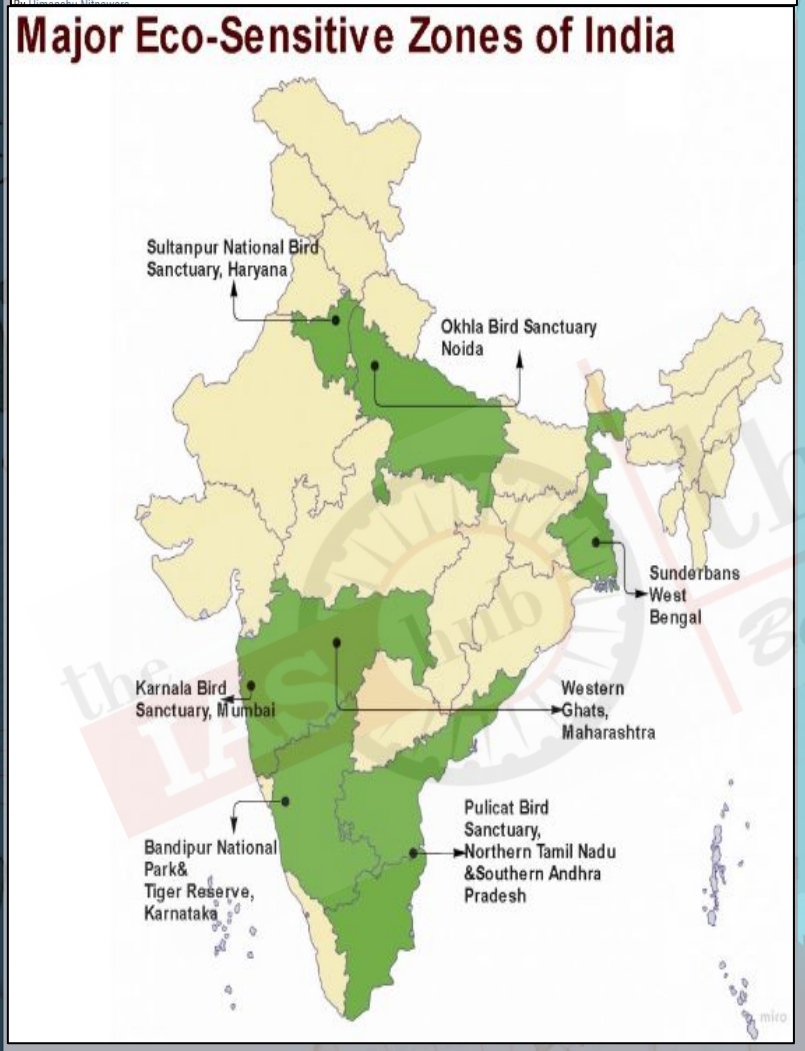
APRIL 27

ECO-SENSITIVE ZONES

(Syllabus: GS Paper 3 - Env & Eco)

Supreme Court modifies order on construction ban within one kilometre of protected areas

Lifting the ban may disturb and prove detrimental for wildlife, says lawyer



Context: The Supreme Court directed that its June 3,2022 order which mandated a 1-kilometre **eco-sensitive zone (ESZ)** around protected areas (PAs) would not apply in cases where a draft or final notification for development has already been issued.

- In June 2022, the Supreme Court directed that every protected forest, national park and wildlife sanctuary across the country should have **a mandatory eco-sensitive zone (ESZ) of a minimum one km** starting from their demarcated boundaries.

Eco-Sensitive Zones (ESZs) or Ecologically Fragile Areas (EFAs)

- **About**: They are areas **notified by the MoEFCC** around Protected Areas, National Parks and Wildlife Sanctuaries.
  - **National Wildlife Action Plan (2002-2016)** of the MoEFCC stipulated that state governments should declare land falling within 10 km of the boundaries of national parks and wildlife sanctuaries as eco fragile zones or Eco Sensitive Zones (ESZs) under the Environmental (Protection) Act, 1986.
  - The **Environment (Protection) Act, 1986 does not mention the word "Eco-Sensitive Zones".**
- **10-km rule**: While the 10-km rule is implemented as a general principle, the extent of its application can vary.
  - An **ESZ could go up to 10 kilometres around a protected area** as **provided in the Wildlife Conservation Strategy, 2002.**
  - Areas **beyond 10-km can also be notified by the Union government as ESZs**, if they hold larger ecologically important "sensitive corridors."
- **Activities Permitted under ESZs:** Ongoing agricultural or horticultural practices, rainwater harvesting, organic farming, use of renewable energy sources, adoption of green technology for all activities.
- **Activities prohibited under ESZs:** commercial mining, saw mills, industries causing pollution (air, water, soil, noise etc), the establishment of major hydroelectric projects (HEP), commercial use of wood, Tourism activities like hot-air balloons over the National Park, discharge of effluents or any solid waste or production of hazardous substances.
- **Activities regulated under ESZs:** Felling of trees, the establishment of hotels and resorts, commercial use of natural water, erection of electrical cables, drastic change of agriculture system, e.g. adoption of heavy technology, pesticides etc, widening of roads.

DTE

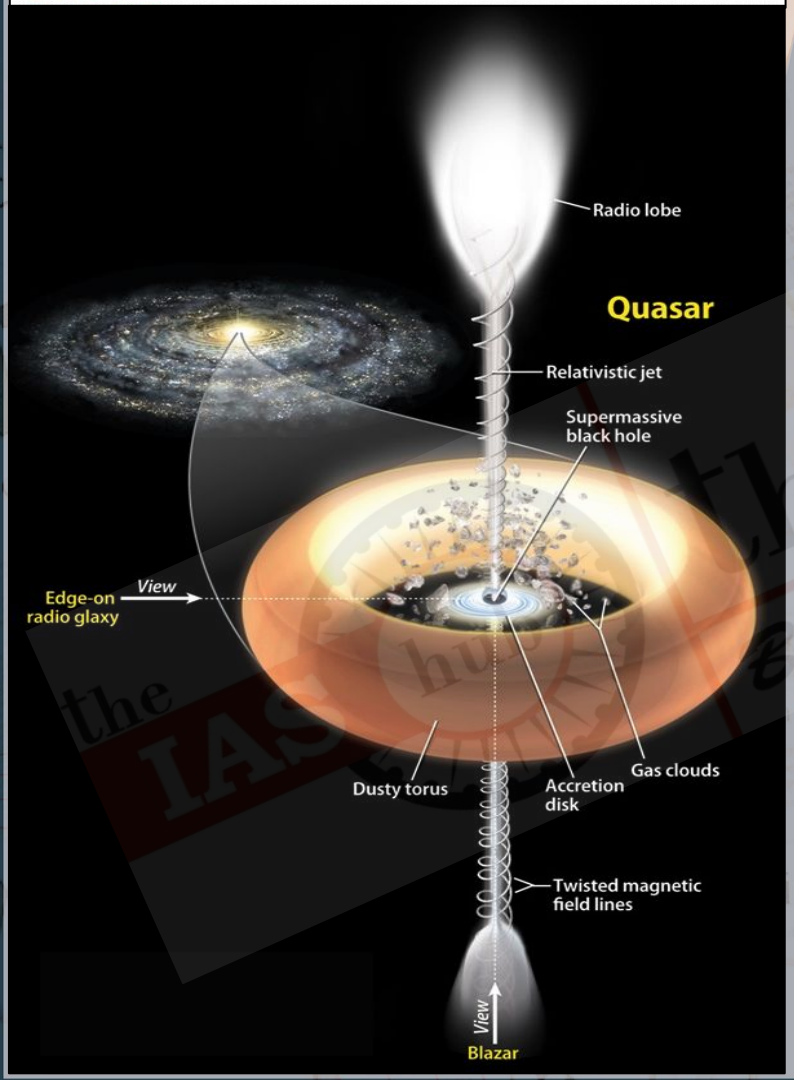
APRIL 27

QUASI-STELLAR RADIO SOURCES

(Syllabus: GS Paper 3 - Sci & Tech)

Galaxy mergers ignite 'quasars' — the most powerful celestial objects: Study

Quasars likely to be future of Milky Way galaxy when it collides with Andromeda in about 5 billion years



Context: Quasars - the brightest and the most powerful objects in the universe - have a violent origin story, according to a new study.

- The **celestial bodies shine as brightly as a trillion stars**, but are a fraction of the size, concentrated in a region as small as our Solar System.
- The **collision of two galaxies** likely ignites quasars.

Quasars

- Quasars, short for **"quasi-stellar radio sources",** were first discovered six decades ago.
- They are **located in supermassive black holes,** which sit in the centre of galaxies.
- As a supermassive black hole feed on gas and dust, it releases extraordinary amounts of energy in the **form of radiation, resulting in a quasar.**
- Some studies suggest **galaxy mergers are responsible,** while others found little evidence to support the theory.
- Galaxies that host a quasar showed **morphological features** that are consistent with galaxy mergers, the researchers noted.
- When **galaxies collide**, it pushes the gas from the outer reaches of the galaxies to the centre. And as the supermassive black hole gorges on the gas, it releases **ferocious fountains of energy** in the form of radiation, leading to the quasar.
- These results present strong evidence that galaxy interactions are the dominant trigger for quasars in the local universe.
- Also, the **collision of the Milky Way galaxy** with the Andromeda galaxy could likely trigger a quasar.

Significance of quasars

- When a quasar is ignited, it **can drive the rest of the gas** out of the galaxy.
- In extreme cases, a significant fraction of the total gas in a galaxy gets displaced. This has drastic **consequences on star formation.**
- Quasars act as **"cosmic lighthouses",** allowing researchers to see the outer reaches of the universe.

DST

April 27

URIC ACID

(Syllabus: GS Paper 3 - Sci & Tech)

A newly fabricated bio-electronic uric acid detecting device can be used for wearable sensors and point-of-care diagnostics

Context: A new flexible **bio-electronic uric acid detecting device** has been fabricated that can be used for various applications such as wearable sensors and point-of-care diagnostics.

- Researchers have developed a new flexible bio-electronic uric acid detecting device. The device so developed is simple, portable, cost-effective and easy to **fabricate for detecting uric acid.**
- This device **outperforms all currently available ones** in terms of effectiveness and cost because it doesn't need any enzymes.

Uric acid

- It is one of the **most important antioxidants that maintain blood pressure** stability and reduce oxidative stress in living beings.
- It is formed when the body breaks down substances called **purines**.
  - Purines are **normally produced in the body** and are also found in some foods and drinks.
- The **fluctuation of uric acid levels** due to the lack of balancing between the production and excretion causes several diseases like **hyperuricemia**, which in turn may lead to gout disease, **type 2 diabetes,** increase risk of c**ardiovascular diseases**, Lesch–Nyhan syndrome, hypertension, and renal disorders.

Secure Top Rank with theIAShub Courses

Prelims 2023 Courses

01 Prelims Crash Course Score Enhancement Program (SEP)

02 INA Current Affairs (Prelims)

03 TACKLE - Prelims Test Series

04 Geography - Prelims Crash Course

Quality Enrichment Courses (Mains 2023)

01 Quality Enrichment Program (QEP)

02 Science of Answer Writing (SAW)

Prelim Cum Mains 2024 Courses

01 NEEV GS Foundation 2024/25

02 INA Current Affairs Pre Cum Mains - 2024

FREE Download PDF

Login to theiashub.com

- Aaj Ka Quality Enrichment (Toppers' Favourite PDF)
- News-CRUX-10 (10 News. 10 Sources. One Place)
- Monthly Editorials (The Hindu & Indian Express)
- Daily Quiz (Prelims)
- Government Schemes & Ministry Wise Year End Review
- Free Enrichment PDFs (Tailor Made Crisp Study Material)



Log On To Our Unique
Free Answer Writing Sessions with Toppers (FAST) Portal
& Start Practicing!

SCAN HERE

9560082909

t.me/theiashub

/mkyadav

www.theiashub.com

www.theiashub.com