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विज्ञान एवं प्रौद्योगिकी मंत्रालय
MINISTRY OF SCIENCE AND TECHNOLOGY

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INDIAN EXPRESS

Page 1

ABORTION RIGHTS AND LAW IN INDIA

(Syllabus: GS Paper 1/2 - Social issues)

ALL WOMEN GET RIGHT TO END PREGNANCY UP TO 24 WEEKS

Even single, unmarried women have the right to safe and legal abortion, rules SC

'Distinction between married and single not constitutionally sustainable'

ANANTHAKRISHNAN G
NEW DELHI, SEPTEMBER 29

IN A significant ruling on reproductive rights, the Supreme Court Thursday extended the right to safe and legal abortion up to 24 weeks of pregnancy to unmarried and single women, saying it is the "right of every woman to make reproductive choices without undue interference from the State".

Now, all women in the country, regardless of marital status, can undergo an abortion up to 24 weeks into pregnancy.

The bench of Justices D Y Chandrachud, A S Bopanna and J B Pardiwala, ruling on a plea by an unmarried pregnant woman

CONTINUED ON PAGE 4

SUPREME COURT'S ABORTION RULING
EXPLAINED, PAGE 16

BUSINESS AS USUAL
By UNNY



SC moves the needle on marital rape debate: for MTP purposes, it is rape

APURVA VISHWANATH & ESHA ROY
NEW DELHI, SEPTEMBER 29

BY INCLUDING marital rape survivors under the definition of sexual assault survivors who are eligible to terminate pregnancies beyond the 20-week deadline in law, the Supreme Court has moved the needle on the marital rape debate.

"Married women may also form part of the class of survivors of sexual assault or rape... A woman may become pregnant as a result of non-consensual sexual intercourse performed

CONTINUED ON PAGE 4



Context: The Supreme Court extended the right to safe and legal abortion up to 24 weeks of pregnancy to unmarried and single women.

Current law and rights

- Under section 312 of the Indian Penal Code, 1860, voluntarily terminating a pregnancy is a criminal offense.
- The Medical Termination of Pregnancy Act of 1971 and its Rules of 2003 prohibit unmarried women who are between 20 weeks to 24 weeks pregnant to abort with the help of registered medical practitioners.
- Through MTP amendment in 2021, the ceiling for abortions was raised to 24 weeks, but only for special categories of pregnant women such as rape or incest survivors, that too, with the approval of two registered doctors.
    - A pregnancy may be terminated up to 20 weeks by a married woman in the case of failure of a contraceptive method or device.
    - It allows unmarried women to also terminate a pregnancy for this reason.
- The Supreme Court in the landmark case of Suchita Srivastava held that Article 21 of the Indian Constitution which guarantees the right to life and personal liberty has a broader dimension that extends to the liberty of a woman to make reproductive choices.
- In Justice K. S. Puttaswamy's case, SC reiterated Suchita Srivastava's case and held that the woman's right to abortion falls within the purview of right to privacy and hence all her reproductive rights should be ensured by the state.

INDIAN EXPRESS

Page 15

BOP AND ITS COMPONENT

(Syllabus: GS Paper 3 -Economy)

CAD widens to 2.8% of GDP in Q1

ENS ECONOMIC BUREAU
MUMBAI, SEPTEMBER 29

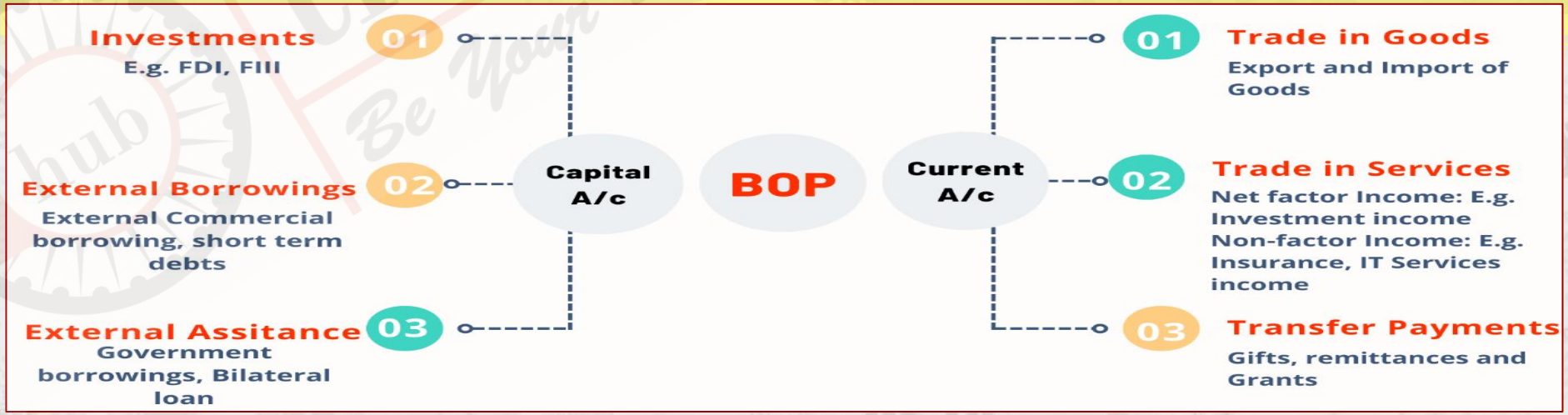
INDIA'S CURRENT account deficit (CAD) widened to $23.9 billion, or 2.8 per cent of gross domestic product (GDP), in the first quarter of the current fiscal due to higher trade deficit. The country had reported a current account surplus of $6.6 billion, or 0.9 per cent of GDP, in the first quarter of 2021-22, RBI data showed.

The deficit in April-June quarter of 2022-23 widened $13.4 billion, or 1.5 per cent of GDP, in Q4 of the previous fiscal. The current account can be expressed as the difference between the value of exports of goods and services and the value of imports of goods and services. A deficit implies that the country is importing more goods and services than it is exporting — although the current account also includes net income (such as interest and dividends) and transfers from abroad (such as foreign aid). "The problem on CAD was mainly on account of widening trade deficit. However, a lot of support has come from the invisibles account with both software and remittances witnessing higher net inflows of $30.7 billion and $23 billion respectively," Bank of Baroda's chief economist Madan Sabnavis said. *Full report on*

Context: Current account deficit widens to 2.8% of GDP in Q1.

BOP and its component

- Balance Of Payment (BOP) is a statement that records all the monetary transactions made between residents of a country and the rest of the world during any given period.
- This statement includes all the transactions made by/to individuals, corporates and the government and helps in monitoring the flow of funds to develop the economy.
- A BOP statement of a country indicates whether the country has a surplus or a deficit of funds, i.e. when a country's export is more than its import, its BOP is said to be in surplus.
- On the other hand, the BOP deficit indicates that its imports are more than its exports.
- **Formula for Balance of Payments** = current account + capital account + financial account + balancing item = 0.
- **Elements of a Balance of Payment**
  - Current Account: It monitors the inflow and outflow of goods and services between countries.
  - Capital Account: All capital transactions between the countries are monitored through the capital account.
  - Financial Account: The flow of funds from and to foreign countries through various investments in real estate, business ventures, foreign direct investments etc., is monitored through the financial account.



LIVEMINT Page 2

GLOBAL INNOVATION INDEX 2022

(Syllabus: GS Paper 3 - Economy and Infrastructure)

India jumps to 40th position in global innovation index 2022

New Delhi: India has improved its ranking among the most innovative nations in the world from 46 in 2021 to 40 this year, according to the global innovation index 2022 brought out by the World Intellectual Property Organisation (WIPO). The most innovative nations are Switzerland, the US, Sweden, UK and Netherlands.

STAFF WRITER



Context: India climbed six notches to 40th position in the Global Innovation Index 2022 on account of improvement in several parameters.

Global Innovation Index 2022

- India's innovation performance is above average for the upper middle-income group in almost every innovation pillar, with the exception of infrastructure, where it scores below average.
- Turkey and India enter the top 40 for the first time, placed 37th and 40th, respectively.
- India overtakes Vietnam (48th) as the top lower middle-income economy for innovation.
- Within Central and Southern Asia, India continues to lead in 40th position, moving further up the rankings, from its 46th position in 2021, and its 81st rank in 2015.
- In the rankings, the top position was occupied by Switzerland.
    - It was followed by the US, Sweden, the UK and the Netherlands.
- China was placed in the 11th position.

About Global Innovation Index

- Launched by the World Intellectual Property Organization (WIPO), a specialized agency of the United Nations.
- Published in partnership with the Portulans Institute and other corporate partners.
- Consists of roughly 80 indicators grouped into innovation inputs and outputs.
    - **Innovation inputs**: Institutions; Human capital and research; Infrastructure; Market sophistication; Business sophistication.
    - **Innovation outputs:** Knowledge and technology outputs; Creative outputs

LIVEMINT Page 2

EXCHANGE-TRADED COMMODITY DERIVATIVES (ETCDS)

(Syllabus: GS Paper 3 - Economy)

FPIs allowed in exchange-traded commodity derivatives segment



New Delhi: Capital markets regulator Sebi on Thursday allowed Foreign Portfolio Investors (FPIs) to participate in the exchange-traded commodity derivatives segment, a move that will further increase depth and liquidity in the market. The new guidelines, came after Sebi's board approved a proposal in this regard in June, will come into force with immediate effect. In a circular, Sebi said it has decided to allow foreign investors to participate in Indian Exchange Traded Currency Derivatives (ETCDs) subject to certain conditions. PTI

Context: The Securities and Exchange Board of India (Sebi) allowed foreign investors to participate in Indian exchange-traded commodity derivatives (ETCDs) through the FPI route, subject to conditions.

Exchange-traded commodity derivatives (ETCDs)

- An exchange-traded commodity (ETC) is a type of security that can offer traders and investors without direct access to spot or derivatives commodities markets exposure to commodities such as metals, energy, and livestock.
- An ETC can invest in either one commodity or in a commodity basket, and its performance can be based on the spot price of the commodity or else tied to futures contracts.
- ETCs differ from exchange-traded fund (ETF) as they are debt instruments (notes) and the commodities tracked by the ETC serve as collateral for the note.
- In terms of structural differences between an ETF and an ETC, the ETF invests directly in physical commodities or futures contracts.
- An ETC is a debt note, backed by an underwriter, which then collateralized the note with buying the commodity.
- The price of an ETC rises and falls along with its underlying commodities and, like other investment funds, ETCs charge management fees.

THE HINDU Page 1

INTANGIBLE CULTURAL HERITAGE

(Syllabus: GS Paper 1 - Art & Culture)

UNESCO lists 50 iconic Indian textiles

It mentions causes for their dwindling popularity and provides strategies for their preservation

Sreeparna Chakrabarty
NEW DELHI

UNESCO on Thursday released a list of 50 exclusive and iconic heritage textile crafts of the country. Toda embroidery and Sungadi from Tamil Nadu, Himroo from Hyderabad, and Bandha tie and dye from Sambalpur in Odisha were some of the textiles that made the cut.

Handmade for the 21st Century: Safeguarding Traditional Indian Textile lists the histories and legends behind the textiles, describes the complicated and secret processes behind their making, mentions the causes for their dwindling popularity, and provides strategies for their preservation.

According to UNESCO, one of the major challenges to the safeguarding of Intangible Cultural Heritage in the South Asia is the lack of proper inventory and documentation. The publication, which aims to bridge this gap, brings together years of research on the 50 selected textiles.

Some of the iconic handcrafted textiles documented from north India are Khes from Panipat, Chamba rumals from Himachal Pradesh, Thigma or wool tie and dye from Ladakh, and Awadh Jamdani from Varanasi.



Making the cut: Hand-embroidered shawls made by the Toda community of the Nilgiris in Tamil Nadu on display. FILE PHOTO

Finding a place

From the south, Ilkal and Lambadi or Banjara embroidery from Karnataka, Sikalnayakanpet Kalamkari from Thanjavur have been included.

Kunbi weaves from Goa, Mashru weaves and Patola from Gujarat, Himroo from Maharashtra and Garad-Koirial from West Bengal also find a place among the 50 iconic textiles.

Existing Traditions of India Recognised by UNESCO

1.	Tradition of Vedic chanting, 2008	8.	Buddhist chanting of Ladakh: recitation of sacred Buddhist texts in the trans-Himalayan Ladakh region, Jammu and Kashmir, India, 2012
2.	Ramlila, the traditional performance of the Ramayana, 2008	9.	Sankirtana, ritual singing, drumming and dancing of Manipur, 2013
3.	Kutiyattam, Sanskrit theatre, 2008	10.	Traditional brass and copper craft of utensil making among the Thatheras of Jandiala Guru, Punjab, India ,2014
4.	Ramman, religious festival and ritual theatre of the Garhwal Himalayas, India, 2009	11.	Yoga, 2016
5.	Mudiyettu, ritual theatre and dance drama of Kerala, 2010	12.	Nowruz, 2016
6.	Kalbelia folk songs and dances of Rajasthan, 2010	13.	Kumbh Mela, 2017
7.	Chhau dance, 2010		

Context: UNESCO released a list of 50 exclusive and iconic heritage textile crafts of the country.

Intangible Cultural Heritage

- Intangible cultural heritage is the practices, expressions, knowledge and skills that communities, groups and sometimes individuals recognise as part of their cultural heritage.
- Also called living cultural heritage, it is usually expressed in one of the following forms:
  - Oral Traditions
  - Performing Arts
  - Social Practices
  - Rituals and Festive events
  - Knowledge and Practices concerning nature and the universe
  - Traditional Craftsmanship
- India has been elected to the Intergovernmental Committee of UNESCO's 2003 Convention for the Safeguarding of the Intangible Cultural Heritage (ICH) for the 2022-2026 cycle.
- The Convention of the Safeguarding of the Intangible Cultural Heritage was adopted by the United Nations Educational, Scientific and Cultural Organization (UNESCO) in 2003 and entered into force in 2006.
- **Purpose**: To safeguard the expressions of intangible cultural heritage that are endangered by the processes of globalization.
- **Publications**:
  - Representative List of the Intangible Cultural Heritage of Humanity.
  - List of Intangible Cultural Heritage in Need of Urgent Safeguarding.
  - Register of good safeguarding practices.

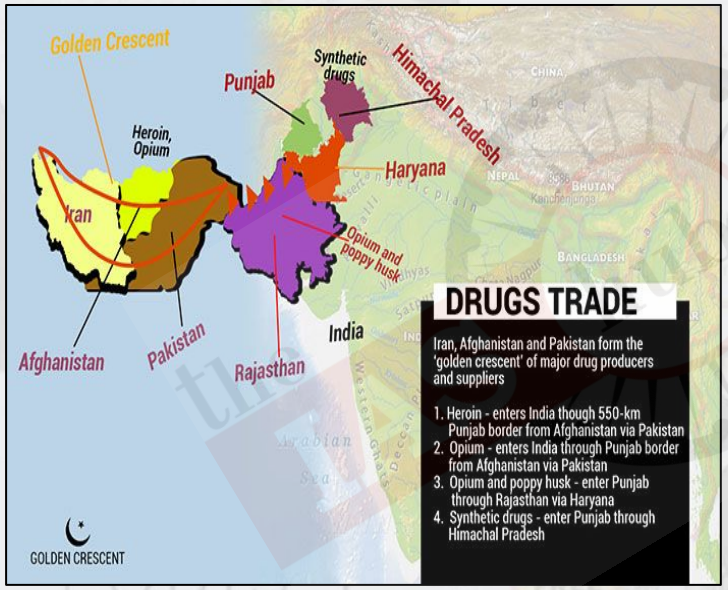
THE HINDU Page 16

OPERATION GARUDA

(Syllabus: GS Paper 3 - Internal Security)

175 alleged drug smugglers held in Operation Garuda

About 175 persons allegedly involved in drug smuggling have been arrested in different parts of the country in an operation led by the Central Bureau of Investigation (CBI) in close coordination with the Interpol, the Narcotics Control Bureau (NCB) and the police forces. The multi-phase exercise code-named 'Operation Garuda' has been launched to dismantle the drug smuggling networks with international linkages through coordinated enforcement actions across the world, through the Interpol. According to the CBI, the operation has so far resulted in the registration of 127 cases and arrests along with the seizure of huge quantities of narcotics.



Context: About 175 persons allegedly involved in drug smuggling have been arrested in different parts of the country in an operation garuda.

Operation garuda

- It is led by the Central Bureau of Investigation (CBI) in close coordination with the Interpol, the Narcotics Control Bureau (NCB) and the police forces.
- The multi-phase exercise code-named "Operation Garuda" has been launched to dismantle the drug smuggling networks with international linkages through coordinated enforcement actions across the world, through the Interpol.
- Apart from the CBI and the NCB, the police in eight States and Union Territory, including Punjab, Himachal Pradesh, Gujarat, Maharashtra, Tamil Nadu, Delhi and Manipur participated.

Drug smuggling in India

- India is linked to shipment of drugs sold on the 19 major darknetmarkets analysed over 2011-2020.
- Around 5 crore Indians reported to have used cannabis and opioids at the time of the survey (conducted in the year 2018).
- It has been estimated that there are about 8.5 lakh people who inject drugs.
- Of the total cases estimated by the report, more than half of them are contributed by states like Punjab, Assam, Delhi, Haryana, Manipur, Mizoram, Sikkim and Uttar Pradesh.
- About 60 lakh people are estimated to need help for their opioid use problems.

TIMES OF INDIA

Page 19

MILLETS CONSUMPTION

(Syllabus: GS Paper 3 - Economy & Agriculture)

Millet items on Guj-Mum Vande Bharat's menu

TIMES NEWS NETWORK

New Delhi: The new Vande Bharat train, which will start commercial operation between Gandhinagar and Mumbai Central from Sunday, will offer a variety of food items, including low-calorie cuisine made from millets — ragi, bhagar, cereals, oats and muesli. The railway ministry said the items have been included in the menu considering the high likelihood of the patronage of business and corporate passengers for this train.

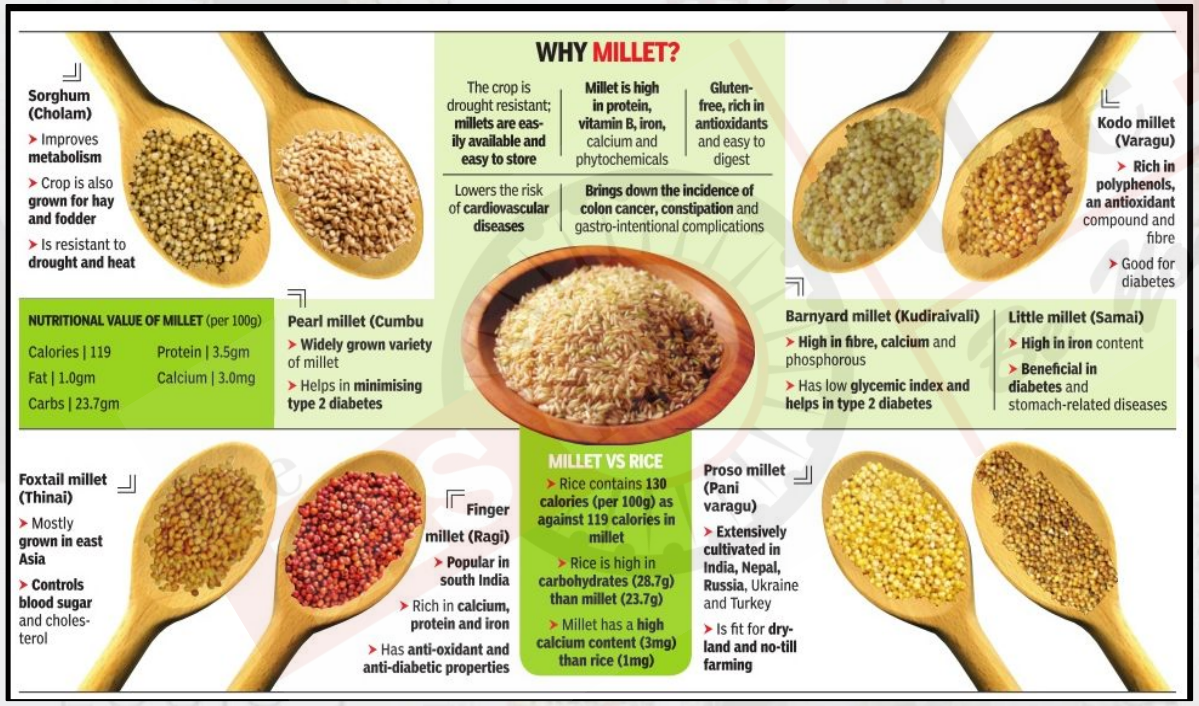
Pic for representation



HEALTHY OPTIONS

Prime Minister Narendra Modi will flag off the maiden run of the train on Saturday. The introduction of millet-based food items in the train gains importance considering the government's thrust on the healthy foodgrain in sync with the theme of observing 2023 as International Year of Millets across the world.

The railway ministry said in a first, 'healthy malt' beverages for travelling kids are being introduced as a service in the premium train. Chocolate bars will be replaced with with local brands of 'chikki' with peanuts sourced from local farmers. "This is being seen as a part of 'Be Vocal, Go Local' campaign," it said. The national transporter also said that the elegant design and appearance of the train shall be complimented with local cuisine, anticipating patronisation of travellers from Gujarat and Maharashtra.



Context: The new Vande Bharat train, which will start commercial operation between Gandhinagar and Mumbai Central, will offer a variety of food items, including low-calorie cuisine made from millets.

Millets

- It is Millet is a collective term referring to a number of small-seeded annual grasses that are cultivated as grain crops, primarily on marginal lands in dry areas in temperate, subtropical and tropical regions.
- Some of the common millets available in India are Ragi (Finger millet), Jowar (Sorghum), Sama (Little millet), Bajra (Pearl millet), and Variga (Proso millet).
- The earliest evidence for these grains has been found in Indus civilization and were one of the first plants domesticated for food.
- India is the largest producer of millet in the world.
- It Accounts for 20 % of global production and 80% of Asia's production.
- India, Nigeria and China are the largest producers of millets in the world.
- With the support of 72 other countries, India's initiative to promote millet was recognized and the United Nations General Assembly has recently declared the year 2023 as the International Year of Millets.

DTE Sept 30

6TH MASS EXTINCTION

(Syllabus: GS Paper 3 - Environment and Ecology)

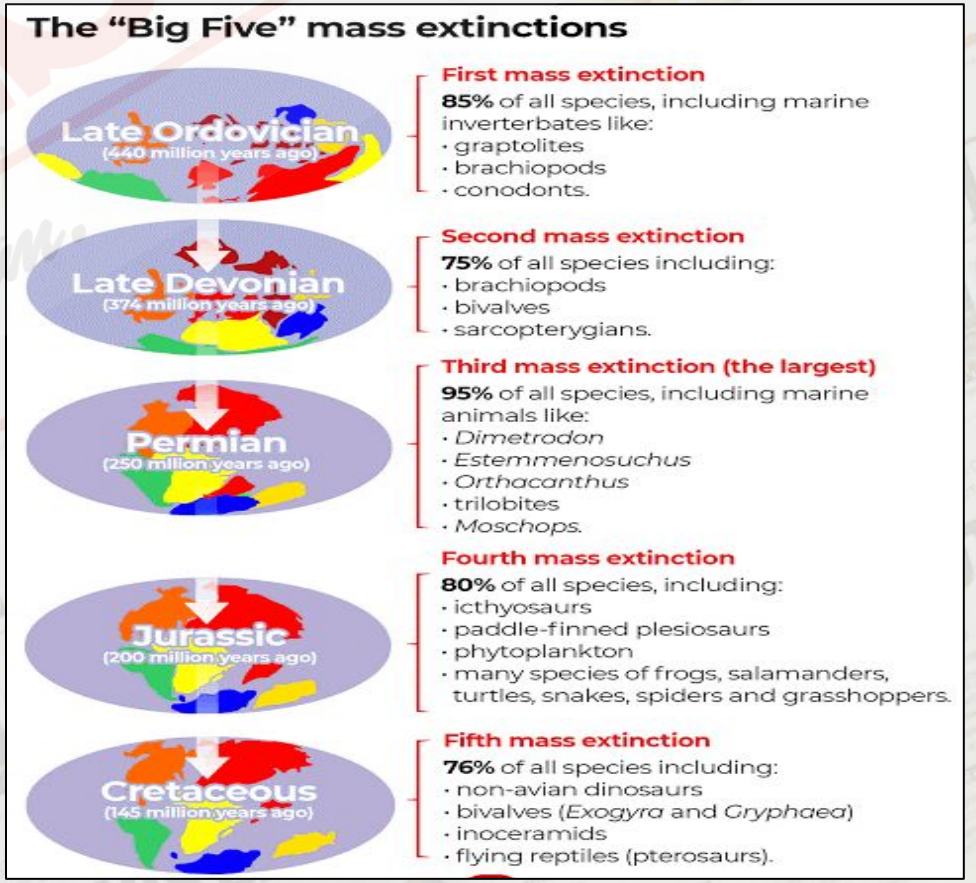
WILDLIFE & BIODIVERSITY

Good while it lasted: The DTE cover story on 6th mass extinction

Context: Earth is losing species at an unprecedented rate; this marks the beginning of the Anthropocene Epoch.

6th mass extinction

- It has been observed that the sixth extinction is human-caused and is more immediate than climate destruction. Thus, the ongoing sixth mass extinction is referred to as the anthropocene extinction.
- Currently, only an estimated 2% of all of the species that ever lived are alive but the absolute number of species is greater than ever before.
- It is described as the most serious environmental problem since the loss of species will be permanent.
- The loss of species has been occurring since human ancestors developed agriculture over 11,000 years ago. Since then, the human population has increased from about 1 million to 7.7 billion.



PIB

Sept 30

36TH NATIONAL GAMES

(Syllabus: GS Paper 1 - Sports and Awards)

PM declares 36th National Games open in Ahmedabad

PM inaugurates world-class 'Swarnim Gujarat Sports University' in Desar

Context: The Prime Minister declared the 36th National Games open at Narendra Modi Stadium in Ahmedabad.

National Games

- The National Games of India comprises various disciplines in which athletes from the different states of India participate against each other.
- The country's first few Olympic Games, now renamed as National Games, were held in North India (Delhi, Lahore, Allahabad (now Prayagraj), Patiala), Madras (now Chennai), Calcutta (now Kolkata), and Bombay (now Mumbai).
- 36th will be held across 6 cities of Gujarat, in which all the 28 states and 8 Union Territories will participate.
- In all, 36 sports will be hosted, in line with the tagline "Sports for Unity".
- This year, Yogasana and Mallakhamba have been added to the list of games. Thus, it will promote indigenous sports in India.
- The logo depicts Gujarat's two enduring and proud symbols viz., Statue of Unity of Sardar Vallabhbhai Patel and Gir Asiatic Lion.
- Last edition of the National Games was organised in 2015, in Kerala.
- 2022 edition of the National Games will be held after a gap of seven years.



DST

Sept 30

TRANSPARENT ELECTRODES (TES)

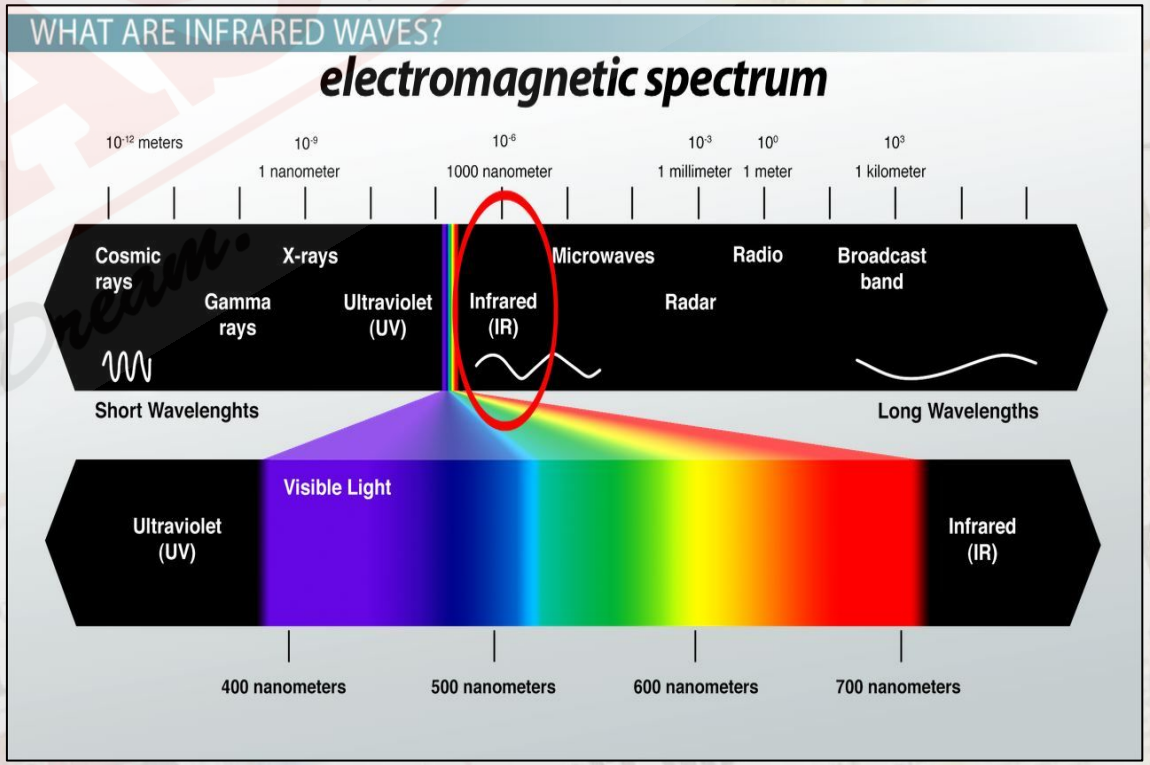
(Syllabus: GS Paper 3 - Sci & Tech)

Newly developed highly transparent visible-near infrared electrodes can be useful for optoelectronic devices

A new material that possesses high transparency in the visible and NIR (near infra-red) range and is also highly conducting could have promising applications as transparent electrodes (TEs) in the optoelectronic devices.

Key points

- Transparent electrodes (TEs) are one of the critical components of the optoelectronic devices and are based on materials which can be tuned to being simultaneously optically transparent and electrically conductive.
- These fundamentally contrasting attributes of this component make it applicable in areas extending from energy generation and emission devices to gas sensors, low-emissivity windows, thermoelectric generators, and flat panel displays.
- The most widely used TEs are based on metal oxide thin films, like, Sn (tin) doped indium oxide (ITO), F (fluorine) doped tin oxide (FTO), and Al (aluminium) doped zinc oxide (AZO), with ITO being one of the extensively used TE in the optoelectronic industry because of its high optical transparency in the visible range and low electrical resistivity.
- The development of infrared (IR) transparent electrodes (specifically in the near-infrared range) is crucial for improving the efficiency of certain optoelectronic devices and opening up applications in other emerging areas, like IR photodetectors, IR switching devices, sensors, and modulators for telecommunication.
- Along with the relatively low NIR transparency of these three metal-oxide TE, scarcity, high cost and cytotoxicity of In, toxicity of F, and poor chemical stability of ZnO necessitate the development of new high-NIR transmittance TE along with high visible transparency.



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