

PERFECT 7

FORTNIGHTLY CURRENT AFFAIRS

June 2022 / Issue -2

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- ✎ Issues of Aadhaar Flip Flop
- ✎ Trademark Abuse and Intellectual Property Rights
- ✎ China's Growing Influence in the Islands of the Pacific Ocean
- ✎ Increasing Opportunities for Unicorns in India
- ✎ Growing Exports and Target of \$5 Trillion Economy
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Mr. Vinay Kumar Singh

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PREFACE



Current Affairs has an important role in the examinations conducted by Union Public Service Commission and State Public Service Commissions. It is necessary for the candidate to have knowledge of relevant information on issues of national and international importance. Perfect 7 Magazine is being presented fortnightly in front of the students to fulfill this requirement. Preparation of civil services exam is only completed when candidates have holistic knowledge and analysis of the dynamic nature of the current affairs. 'Perfect7' keeps this vision and approach and understands the multidimensional need of students at the content level, so this magazine has presented the current affairs with relevant issues of general studies. Keeping in mind the mains exam, current articles on 7 burning issues, Ethics Case Studies, Biographies of important personalities, coverage of most useful topics of various sections of General Studies and the most important current affairs issues are being covered for Preliminary Examination in which emphasis is being given on environmental, ecology, art and culture, science and technology, economy issues. A short section on Terminology will also be part of Perfect 7 Magazine.

Brain boosters with 7 themes based graphics are being presented in a concise form to enhance the conceptual understanding of the students. Apart from this, updated information on Global Initiatives, Global Institutions, Structure of Organizations, Functioning, Important Reports, and Indices will be included in this magazine, which is asked prominently in the Civil Services Examination. To give emphasis on facts and analysis, keeping in view the trends of new nature of questions in Preliminary and Main Examination of Civil Services, an inclusive magazine is being provided to the students so that they can give the right direction to their preparation by understanding the new requirements of Civil Services Examination. We hope that Perfect 7 in its new form will prove to be very useful. Your suggestions are always welcome.

Vinay Kumar Singh
Editor
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PERFECT 7

FORTNIGHTLY CURRENT AFFAIRS

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by Mr. Qurban Ali
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7 IMPORTANT ISSUES



Issues of Aadhaar Flip Flop

Context

Recently, an earlier decision given by the UIDAI was withdrawn, resulting in concerns being raised about the security of Aadhaar Card in the country.

Introduction

Flip flop refers to the reversal of an earlier decision. A complaint regarding duplication of Aadhaar was filed in the Bangalore office of UIDAI, after that an advisory was issued by UIDAI on 22 May 2022, in which UIDAI had directed to be careful in sharing the Aadhaar card with any institution. Although this advisory was withdrawn by issuing a new advisory again on 30 May 2022. Due to this activity, many concerns have arisen regarding Aadhaar in the public. At present, the government is being questioned on this issue.

What are the Key points of UIDAI's advisory?

- Prohibition on sharing with unauthorized entities: UIDAI "warned the general public not to share photocopies of their Aadhaar with any unauthorized organization. UIDAI said that it can be misused by unauthorized entities".
- Use of "Masked Aadhaar": UIDAI had recommended the use of 'Masked' Aadhaar in place of Aadhaar. Masked Aadhaar displays only the last four digits of the Aadhaar number.
- Regarding the use of public computers: UIDAI said that the people

should avoid using public computers or cyber cafes to get the e-copy of Aadhaar and if the people are using public computers, then they have to ensure that all the copies of Aadhaar should be permanently deleted.

- UIDAI clarified that only such institutions can ask for an Aadhaar card that has obtained the license in this regard from UIDAI.

- Along with this, the Aadhaar Act also makes it clear that private institutions (such as hotels and movie theaters) are not allowed to collect or retain copies of the Aadhaar card.

About Aadhaar

Aadhaar Card is a document issued by UIDAI which is provided to the individual (biological person) after following a certain procedure. It is made up of a 12-digit number and each person's digit is different.

Legal Status of Use of Aadhaar Card: Where Aadhaar Can Be Used?

- According to the Aadhaar Act 2016, an Aadhaar card is mandatory to get a government subsidy or government service.
- It can also be used for KYC (Know Your Customer) documents.
- It is not mandatory for opening a bank account, taking a sim, and admission to the school.
- The consent of the Aadhaar holder is mandatory before the information collection of the Aadhaar card.
- Aadhaar related data is kept in "CIDR (Central Identity Data Re-

pository)".

- Aadhaar does not prove identity and citizenship. It is used for authentication only.

- It is clearly stated that Core Biometric Information shall not be used for any purpose other than Aadhaar generation and Aadhaar authentication.

- The Supreme Court has clarified in this context that if the disclosure of the identity of a person is necessary under "national security", then it will be done only after the order of a secretary-level officer.

Aadhaar related concerns

- **Misuse of data:** Private companies in India demanding Aadhaar in return for providing services, such as - Aadhaar is not necessary to buy SIM, but companies do not provide sim without Aadhaar. These companies have been accused of buying and selling Aadhaar data many times. Thus Aadhaar can be misused.

- **Privacy-related challenges:** Aadhaar card contains biometric details of the individual. Thus, in the context of increasing cybercrime and the importance of data, leakage of this information is a violation of the privacy of the person. The "right to privacy" has been defined as a fundamental right under Article 21 of the Indian Constitution. Therefore, access to Aadhaar information through cybercrime violates the fundamental right of a person.

- **Improper imposition of Aadhaar:** The Hon'ble Supreme Court made it clear in the 2018 judgment, that the

use of Aadhaar is mandatory only in those areas where the benefits derived from the Consolidated Fund of India are to be spent. Aadhaar was not mandatory even for pre-child care, but there is a constant demand for Aadhaar by Anganwadi institutions.

- **Ultimatum principle of the government:** The state government and the central government had given an ultimatum on linking other cards with Aadhaar cards on many issues. Cards were suspended for not linking other cards with Aadhaar before that stipulated date. This task caused the problem of “exclusion error”.

- **Problem with Aadhaar Enabled Payment System:** It is a type of Mini ATM. In this, a person whose Aadhaar is linked with the bank account can withdraw money through biometric authentication with the “Business Correspondent” from anywhere in India. This facility is widely misused by Corrupt Business Correspondents.

- **Problem of duplication:** In 2019, the CAG pointed out that Aadhaar duplication is being done on a large scale. UIDAI reported that around 4 lakh Aadhaar cards have been canceled till 2019. But the CAG pointed out that this process of automated biometrics is not sufficient.

Along with this, the Supreme Court and the CAG have repeatedly condemned the functioning of the Aadhaar card. Aadhaar authentication is a big problem for the elderly, leprosy patients, and the handicapped. A 2017 RTI report suggests that public details of Aadhaar information were available on more than 200 government websites, posing a major threat to privacy. Thus we can say that the security of Aadhaar is of utmost importance at present.



Importance of Aadhaar Card:-

- Being a unique number, Aadhaar promotes transparency. After all the cards are linked with the Aadhaar card, the problem of inclusion error gets reduced which helps in promoting good governance.
- Aadhaar number is neutral to religion, origin, caste, gender, place of birth, etc. Hence it promotes the principle of equality.
- Aadhaar has encouraged people-centered governance in social welfare schemes, inclusive growth, management of financial budgets, etc.
- Aadhaar has resulted in increased efficiency in government expenditure and has accelerated the process.
- Jan Dhan, Aadhaar, and Mobile are the key elements of financial inclusion. And in this the role of the base is important.
- Aadhaar card plays an important role in promoting Digital India.

The Way forward:-

- It is necessary to provide alternate system of authentication in case of failure of Aadhaar authentication.
- Along with this it is necessary that a strong Data Protection Act is brought in India. It is noteworthy that the bill regarding data protection is under consideration in Parliament.
- Solve the problem of Aadhaar enabled payment system by strengthening the encryption of the National Payment Corporation of India.

Conclusion

Although Aadhaar is very useful for us, the concerns related to it cannot be denied. In this context, it is the responsibility of the elected government to assure the public about the security of Aadhaar and try to strike a balance between good governance and the right to privacy.

NOTES



Trademark Abuse and Intellectual Property Rights

Context

Recently, the Delhi High Court has held that the use of trademark words registered by someone else to promote his business would amount to infringement of the rights of the holder of the trademark.

Introduction

- Recently, the Delhi High Court has given its decision in two cases related to trademarks. The first case pertained to Digital Works Pvt Ltd vs Tictok Skill Games Pvt Ltd. In this case, Digital Works Pvt Ltd filed suit that Ace2three and A23 have been registered as Trademarks by the company whose keywords are being used in Apple Store by Tictok Gaming Pvt Ltd. In this case, the Delhi Court made it clear that in the age of technology, the importance of keywords (from which the search is done) has increased. In such a situation, there is no difference between the searched keywords and the trademark. However, in this case, efforts will be made to settle the matter in the mediation of the court.
- Along with this, recently in a 20-year-old case related to trademark, the Delhi High Court has restored the rights of the trademark holder. In the year 2002, a suit was filed by Sholay Media & Entertainment Pvt Ltd and Shippy Films Pvt Ltd, the producers of the film Sholay, against Yogesh and others in which the plaintiff alleged that the respondent ran a website by the name of www.sholey.com

which is an infringement of their trademark copyright. Giving a decision in this context, the Delhi High Court said that if any other person uses the trademark of the word registered by someone else to promote his business, then it will be considered a violation of the rights of the holder of the trademark. The Delhi High Court has also awarded compensation of 25 lakhs to the filmmakers in this case.

About trademark

- Trademark is a branch of Intellectual Property Rights. It is a signal that helps to differentiate the goods or services of one enterprise from the goods and services of another enterprise.
- It can be the manufacturer's sign, signature, mark, logo, symbol, or design of that goods.
- Trademarks in India are governed by the Trademark Act 1999.
- Trademarks are issued every 10 years by the Controller of Patents, Designs, and Trademarks under the aegis of DPIIT (under the Ministry of Commerce) in India.

Legal Status of Trademark in India

- In 1991 the Trademark Act 1958 was replaced with the Trademark Act, 1999 to accept the LPG reforms and comply with the TRIPS (Trade-Related Aspects of Intellectual Property Rights) obligation as recommended by the World Trade Organization.
- The objective of the Trademark Act is to provide protection to the

users of the trademark and dictate terms on the property and also provide legal remedies for the implementation of trademark rights.

- The Trademark Act, 1999 empowers the police to arrest in cases of trademark infringement. The Trademark Act makes penal provisions for offenders. It also promotes the period for registration and registration of non-traditional trademarks.

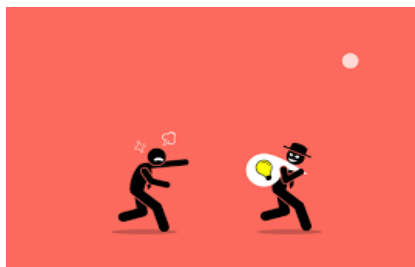
Terms Of Trademark Registration

The Central Government shall appoint a person to be known as the Controller of Patents, Designs, and Trademarks by mentioning in the Official Gazette. This will be the Registrar of Trademarks. The Central Government may also appoint other officers if it thinks they are suitable. The Registrar has the power to transfer or withdraw the cases in writing for reasons to be mentioned.

- Under Section 6 of the Act, the maintenance of a registered trademark is discussed. Under this provision, a copy of the trademark has to be kept at the head office as well as at each branch office. It also provides for the protection of records in computers or diskettes or any other electronic form.
- Section 9 of the Act defines absolute grounds for denial of registration. If trademarks may lack any distinguishing feature or which specifically contain marks or signs that may be used in trade to indicate type, fine, quantity, approximate basis, value, or geographic origin, such

In this case the registration of the trademark may be refused.

- The registration of a trademark can be refused even if it is no longer relevant in the due course of time. Along with this, the trademark can also be prevented from registering in the following circumstances if-
 - Trademark deceives the public or creates confusion.
 - If it hurts religious sensibility
 - If there is an obscene or scandalous matter.



Effect of registration

The registration of a trademark, if valid, gives the registered owner an exclusive right to use the trademark about those goods and services for use of the trademark. In this context, the trademark holder gets to benefit in the matters for which the trademark is registered, and also gets relief in respect of infringement of the trademark.

Trademark infringement

- Basically, trademark infringement means the disapproved use of a trademark about products and benefits in a way that is confusing, difficult, or potentially profitable to the merchant.
- If a person is not permitted by the holder of the trademark to use the trademark, then the trademark will be considered infringing.
- Any person using a deceptive mark of a registered mark will still be con-

sidered a trademark infringement

- With the expansion of the web, allegations of unfair trademark infringement are also expanding. Presumably, whenever a company sees one of its trademarks on a third party's online page, it will file a trademark infringement claim.
- The increasing use of the Internet has now led to international trademark disputes.
- A civil suit can be filed against the infringer of the trademark.

Effect of court's decision

- From this it became clear that if someone else is using the words used by a trademark holder on a search engine for his benefit, then it is a violation of the right of the trademark holder.
- The court clarified that the importance of keywords used on search engines at present has increased as people search for a certain brand through them. The Court also clarified that it is a loophole in the Trademark Act which is being rectified through case law.
- This decision indicates that with the advancement of technology, the rules and procedures should also change.
- This decision indicates the protection of intellectual rights in India, which will pave the way for investment, innovation, and entrepreneurship in the future.

Conclusion

The registered trademark is the right of the holder and if anyone else uses this registered trademark, then he is not only infringing the rights of the holder but he is also affecting the innovation and enterprise negatively. Along with this, this decision made it clear that laws and rules should work according to technology. Along with

this, this decision also reflects the progressiveness of the Indian judiciary, which keeps pace with technology and strengthens the environment of innovation and enterprise.

NOTES



China's Growing Influence in the Pacific Islands

Context:

The Foreign Minister of China, was on a visit to ten Pacific Island Countries (PICs), and has co-hosted with Fiji the Second China-Pacific Island Countries Foreign Ministers Meeting on May 30, 2022. During the meeting, China's effort to push through a comprehensive framework deal, the draft of which was leaked earlier, failed to gain consensus among the PICs.

Background:

In April 2022, China signed a controversial security deal with the Solomon Islands, which raised regional concerns. Prior to the current visit, two draft documents prepared by the Chinese side were leaked, and gained the attention of regional leaders in the Pacific as well as the larger international community. One of the documents is the "China-Pacific Island Countries (PICs) Common Development Vision", and the other is "China-Pacific Islands Five-Year Action Plan on Common Development (2022-2026)". The vision gives a broad proposal about co-operation in the political, security, economic and strategic areas, whereas the action plan outlines the more specific details of co-operation in the identified areas. The secrecy surrounding the draft, and the haste with which it was discussed with the governments of the PICs during the meeting sent worrying signals across the Pacific. China has increasingly started talking about security cooperation in addition to its economic diplomacy to-

wards the PICs.

About Pacific Island Countries

Cluster of 14 States: The Pacific Island Countries are a cluster of 14 states which are located largely in the tropical zone of the Pacific Ocean between Asia, Australia and the Americas.

They include Cook Islands, Fiji, Kiribati, Republic of Marshall Islands, Federated States of Micronesia (FSM), Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu. The islands are divided on the basis of physical and human geography into three distinct parts — Micronesia, Melanesia and Polynesia. The islands are very small in land area, and are spread wide across the vast equatorial swathe of the Pacific ocean.

Strategic Significance of the PICs

1. Exclusive Economic Zones (EEZs):

Though the countries are some of the smallest and least populated states, they have some of the largest Exclusive Economic Zones (EEZs) in the world.

2. Huge economic potential:

Large EEZs translate into huge economic potential due to the possibility of utilising the wealth of fisheries, energy, minerals and other marine resources present in such zones. They prefer to be identified as Big Ocean States, rather than Small Island States. In fact, Kiribati and FSM, both PICs, having EEZs larger than that of India.

3. Important role in major power

rivalry:

Pacific countries have played an important role in major power rivalry as springboards for power projection and laboratories for developing and demonstrating strategic capabilities. The major powers of the colonial era competed with each other to gain control over these strategic territories.

4. Major Nuclear Weapon Test Sites:

Due to the remoteness of these islands from the Soviet Union and major population centres of the world, some of the major nuclear weapon test sites of the U.S., the U.K. and France were located here.

5. Mobilise International Opinion:

In addition, the 14 PICs, bound together by shared economic and security concerns, account for as many number of votes in the United Nations, and act as a potential vote bank for major powers to mobilise international opinion.

What China Seek to Achieve from the PICs?

1. Strategic Location:

The PICs lie in the natural line of expansion of China's maritime interest and naval power. They are located beyond China's 'First Island Chain', which represents the country's first threshold of maritime expansion. The PICs are located geo-strategically in what is referred to by China as its 'Far Seas', the control of which will make China an effective Blue Water capable Navy — an essential prerequisite for becoming a superpower.

2. Quadrilateral Security Dialogue:

At a time when the Quadrilateral Security Dialogue has emerged as a major force in the Indo-Pacific vis-à-vis China, the need to influence the PICs have become an even more pressing matter for China.

3. Taiwan factor:

Apart from the vast marine richness of the PICs, the Taiwan factor plays a major role in China's Pacific calculus. China, which considers Taiwan to be a breakaway territory, is preparing for what seems like an inevitable military invasion. In this context, it becomes important to break Western domination of island chains of the Pacific which could impede reunification. Wooing the PICs away from the West and Taiwan will therefore make the goal of Taiwan's reunification easier for China.

4. Diplomatic recognition:

China has been successful in getting diplomatic recognition from 10 out of the 14 PICs through its economic largesse. Only four PICs — Tuvalu, Palau, Marshall Islands and Nauru, currently recognize Taiwan.

India in Indo-Pacific

The Indo-Pacific places significant importance on India by highlighting the country as a key player in the twenty-first century. As countries like Australia, Japan, and the United States began to define the Indo-Pacific as the new theatre for strategic competition, New Delhi came to assume a central role in their respective policies. The rise of China and its expanding economic, political, and military engagements, from Europe and Africa to Asia and the Pacific, were shifting the strategic realities for Canberra, Tokyo, and Washington. India's own approach toward the Indo-Pacific is shaped by a new strategic environment coinciding with the rise of China, particularly in

the Indian Ocean region and South Asia. While priorities and capabilities remain different, Beijing's expanding presence across the Indo-Pacific presents a common strategic challenge for Canberra, New Delhi, Tokyo, and Washington.

Significance of Indo-Pacific region for India:

Strategic significance: The Indo-Pacific is a multi-polar region that accounts for over half of global GDP and population.

Mineral Resources: Maritime regions have also become important storage areas for essential resources such as fish stocks, minerals, and offshore oil and gas.

Economic Growth: The Indo-Pacific area accounts for approximately 60% of world GDP, making it the most important contributor to global growth.

Commerce: Many of the world's most important choke points for global trade are located in this region, including the Straits of Malacca, which are crucial for global economic growth.



Intensification of diplomacy in the Pacific Islands

The latest China's diplomacy towards the Pacific Islands has made the powers that have traditionally controlled the regional dynamics like the U.S. and Australia more cautious. The U.S. has started revisiting its diplomatic priority for the region ever

since the China-Solomon Islands deal. The role played by the U.S. in mobilising opposition against China's proposed deal could not be ruled out. Australia has sent its officials to these countries to revisit their ties and has promised due priority and assistance to these countries.

Conclusion:

China does not have any particular historical linkages to the PICs unlike the Western powers. Therefore, its interest in the PICs is of relatively recent origin, and is linked to China's rise in the past few decades.

The PICs as a collective did not agree to China's extensive and ambitious proposals, and therefore China failed to get a consensus on the deal.

However, China can always come back with improvised plan, which is more acceptable and use it to further pursue its final objectives incrementally.

NOTES



Increasing Opportunities for Unicorns in India

Context

Prime Minister of India on May 29 2022, praised India's startup ecosystem as he highlighted that the country has reached a landmark figure of 100 unicorns with a valuation of more than \$300 billion.

Introduction

A Unicorn is any privately owned firm with a market capitalization of more than USD 1 billion. It denotes new entities dedicated to offering creative solutions and new business models, among other things. The valuation of unicorns is not expressly linked to their current financial performance, but largely based on their growth potential as perceived by investors and venture capitalists who have taken part in various funding rounds.

Status Of Unicorn in India

The Indian startup ecosystem is not just growing but making and breaking new records. Prime Minister of India in his Man Ki Baat radio address said that a record 44 unicorns were established in India last year during the pandemic. "Not only that, 14 more unicorns were formed within three-four months of this year. This means that even in this phase of the global pandemic, our startups have been creating wealth and value," According to Invest India, the government's National Investment Promotion and Facilitation Agency, "The year 2021, 2020, and 2019 saw the birth of the maximum number

of Indian unicorns with 44, 11, and 7 unicorns coming each year, respectively."

Starting with Digit Insurance on January 15 to Pristyn Care on December 8, 2021, the unicorns came from a range of sectors. Mensa Brands, which acquires Direct-to-Consumer fashion, home and personal care labels, became a unicorn in just six months. While in March 2021, Chennai-based NBFC Five Star Business Finance achieved the status after 37 years in existence. Fintech was arguably the biggest contributor to the unicorn universe in the year 2021. CRED, Groww, Zeta, BharatPe, Mobikwik, Upstox, Slice were the seven fintech additions. While edtech industry leader Byju's became a decacorn in the year 2021 with \$18 billion valuation. Despite regulatory uncertainty, India also saw two crypto unicorns in CoinDCX and CoinSwitch Kuber. The B2B commerce space too saw a fundraising frenzy with Infra. Market, Moglix, of Business and Zetwerk turning unicorns. Between 2015 and 2021, the country's startup ecosystem has seen a nine-time increase in the number of investors, and a seven-time increase in the total funding of startups. Geographically, the center of India's high-tech industry, Bengaluru is India's unicorn capital with the largest number of unicorns headquarters followed by Delhi (NCR) and Mumbai. While we see unicorns active in Tier I

cities, this ecosystem is not restricted and is proliferating across the country till the last district.

India's Unicorn status in Global Arena

India minted its 100th unicorn early in May 2022, however, China and the US have created far more unicorns at 217 and 806, respectively. For every unicorn that India produced in 2021, the United States produced almost 8. According to Traxcn data, the US produced 321 unicorns in 2021 as against 44 produced by India. China, on the other hand, produced only 21 unicorns in 2021, half of what India managed.

India has the third-highest number of startups valued at a billion dollars or more. It lags behind China, and the world's current unicorn hub, the US. Israel is in the fourth position with 92 unicorns, while the United Kingdom, Germany and France together have 130 unicorns. Israel also saw 42 of its startups entering the unicorn club in 2021. Brazil surprisingly features as the 10th largest unicorn hub, with 18 unicorns calling the country their home.

The Indian unicorns have raised the highest average funding, a total of more than \$89 Bn in funding to date, with an average funding amount of about \$906 Mn. India is at the 10th position when it comes to the time taken by a startup to become a unicorn, at 8 years, while Brazil leads the chart with just 2.9 years. China and the US are in the second and

sixth positions, respectively.

Investment in Unicorn

India has received \$77.8 billion in start-up funding from the year 2018 till the fourth quarter of 2021. India's 100 Unicorns valued approx USD 330 billion, that is over Rs 25 lakh crore. In India there also has been a shift in the traditional way of funding, wherein startups are now looking at exercising alternate routes such as crowdfunding, revenue-based financing, venture debt, bank loans, etc.

Startups such as Zerodha, which have been bootstrapping since inception are changing the unicorn funding norms and promoting independence and revenue generation since the early stages. Since the onset of COVID-19, an unconventional trend observed is the new entries to the unicorn club without any billion-dollar ticket size investment.



Importance of Unicorns-

According to 'NASSCOM Tech Start-up Report 2021 – Year of the Titans', Indian startups created 6.6 lakh jobs directly and enabled 34 lakh indirect jobs in 2021, 70% them enabled by e-commerce, mobility and food delivery platforms.

Startups are being increasingly put forward as drivers of economic growth, largely because they create jobs. Startups are developing innovative solutions and technologies.

Steps taken by the Government to held Startups-

The government of India has rolled out the Startup India Initiative to promote startup culture in the country. Eligible companies recognized as startups by the DPIIT (Department for Promotion of Industry and Internal Trade) are eligible for a host of tax benefits, and easier compliance norms.

Startups can avail of tax holiday/exemption for 3 consecutive financial years out of their first 10 years since incorporation. They are also eligible for tax exemption under the Income Tax Act, commonly referred to as the angel tax.

Self-certification is accepted for compliance as it pertains to certain labour laws and environmental laws. There is a provision for fast-tracking patent applications. In addition, there is a provision for an 80 per cent rebate in the filing of patents.

Startups can be wound up within 90 days of filing an application for insolvency.

Exemption from submission of Earnest Money Deposit (EMD) while filing government tenders and exemption from criteria of prior experience in the manufacturing sector make it easier for startups to apply for tenders.

With an aim to provide a boost to the fledgling startup ecosystem in the country, the government launched a Startup Accelerator for Product Innovation, Development and Growth in August 2021. The initiative called SAMRIDH was launched by union minister for electronics and IT will help close to 300 startups in the early stage of their journey. The investment of up to Rs 40 lakh in each start-up will be facilitated through the selected accelerators. Apart from all these government has taken many initiatives such as MUDRA

scheme, e-Biz portal, SETU fund, Atmanirbhar Bharat etc to boost the start up ecosystem in India.

Conclusion

India's Unicorn are growing fast and need both government and corporate support. As government role in policy level decisions that promote entrepreneurship, the onus is also on India's corporate sector to foster entrepreneurialism and create synergies to build impactful technology solutions, and sustainable and resource-efficient growth.

NOTES



Context

According to the recently released data by the Department of Commerce (Ministry of Commerce and Industry), India's exports have increased by 38.90% (compared to April 2021) in April 2022. This growth will help the Indian economy reach its ambitious target of \$5 trillion.

Introduction

Exports play a very important role in the growth of an economy. The role of exports has increased in the post-covid world. India's total exports between April 2021 and December 2021 were estimated at US\$ 301.3 billion (an increase of 49.6%). In this sequence, according to the data recently released by the Department of Commerce, India's exports have increased by 38.90% (compared to April 2021) in April 2022. Along with this, it has been concluded from the sources of the Commerce Department that India's exports have been estimated to increase by 21.8% (compared to the first week of June 2021) in the first week of June 2022. Continuous growth in India's exports is a good sign for India.

Trend of India's Export

- India's total exports were estimated at US\$ 301.3 billion (year-on-year growth of 49.6%) between April 2021 and December 2021 by the Ministry of Commerce and Industry.
- India's total exports (goods and services combined) in April 2022 is US\$ 67.79 billion, showing a positive

growth of 38.90 percent over the same period last year.

- Merchandise exports (exports of goods) stood at US\$ 40.19 billion in April 2022, showing a positive growth of 30.70 percent over April 2021 (US\$ 30.75 billion).
- Non-petroleum and non-gems and jewelry exports stood at USD 28.46 billion in April 2022, registering a positive growth of 19.89 percent over non-petroleum and non-gems and jewelry exports at USD 23.74 billion in April 2021.
- The estimated value of exports of services for April 2022 is US\$ 27.60 billion, showing a positive growth of 52.87 percent over April 2021 (US\$ 18.06 billion).
- Exports of engineering goods, petroleum products, gems and jewelry, agriculture, organic and inorganic chemicals, and electronic goods have shown massive growth.
- According to the Economic Survey 2021-22, the important export destinations of India have been the USA, UAE, China, Bangladesh, and Hong Kong. Along with this, India's major exports have been petroleum products, precious gems, iron steel and steel, and the drug formulations sector.
- The ratio of India's exports to GDP in the financial year 2020-21 has been 18.7%.

Exports and a \$5 trillion economy

- In 2019, it was announced by the Indian Prime Minister that by 2024-25, India's economy is to reach the level of 5 trillion dollars. However, this target has been affected due to

the Corona epidemic. After this, the IMF estimated that by the financial year 2026-27, India's economy will reach 5 trillion dollars.

- Exports will play an important role in taking India's economy to this level. It has been stated by the Commerce Minister of India that to become a 5 trillion dollar economy, it is necessary to reach the export GDP ratio of about 20% or the export value of about 1 trillion dollars. Therefore, the government is constantly trying to increase exports, the results of which are visible.

Efforts made by the government to increase exports:

- **Production Link Incentive Scheme:** A production-linked incentive scheme was introduced by the government. According to this scheme, the government will encourage those sectors which will have export potential. At present, this scheme is working in many areas including electronic equipment, and food processing. An outlay of Rs 1.97 lakh crore for 13 key sectors was announced by the Finance Minister in the Union Budget 2021-22.
- **Bilateral Agreements:** At present, the Government of India is rapidly entering into bilateral trade agreements and is moving towards free trade agreements. In this direction, work is being done on agreements with Australia, USA, UK, UAE, Canada, European Union, etc.
- **Exemption scheme of duties and taxes on export products:** - This scheme is in accordance with the

rules of the World Trade Organization. In this scheme, the tax levied on the production and distribution of exported products is reimbursed, which encourages the producer to produce export-oriented products.

- **Export Credit Guarantee Corporation of India Limited:** This body is constituted to provide insurance cover to banks against the risks involved in export credit extended to exporter borrowers. In the last 5 years, about 4400 crore rupees have been financed for this institution.



- **Export Promotion Capital Goods Scheme:-**

Under this scheme, duty-free import of machinery and parts is allowed. Under this scheme, the benefiting entrepreneur has to export the specified quantity in the stipulated time. Apart from these schemes, there are many steps like making the district an export hub, credit guarantee line scheme, special economic zone scheme, and finance flow to EXIM Bank will increase exports, which will help in reaching the level of a 5 trillion dollar economy. Affiliate Challenges

- **Withdrawal from RCEP:** RCEP was an agreement between ASEAN and 6 countries related to the concept of the free trade agreement. India was also a party at the beginning of

this agreement, but India has withdrawn its name from this agreement, by which India is unable to make reach a large market.

- **Continuous increase in imports:** Although India's exports are increasing, India's imports are increasing at a higher rate. The total imports between April 2021 and December 2021 were estimated at US\$ 443.82 billion (68% year-on-year growth). India's trade balance remains negative as imports grow more rapidly than exports.

- **Corruption:** Due to corruption, schemes like credit guarantees are misused. The famous PNB scam was done by Nirav Modi using these methods.

- **Emergencies:** Situations like the Corona pandemic and the Russo-Ukraine war have also affected exports.

- **Trade War:** The escalation in the trade war between the US and China since 2016 has affected many countries including India. Both China and America are important export destinations for India, so this affects India's exports.

- **Protectionism in Developed Countries:** India's exports were affected to a small extent due to increasing protectionism in America (during the Trump administration). At present, protectionist tendencies are visible in countries like Germany, Chile, and Britain.

Along with this, there are many other factors affecting the export and the goal of a 5 trillion economy, due to the difference in proposed and actual investment, heavy consumption due to population, and lack of substantial success of Make in India are affecting the target.

Conclusion

Exports indeed need to be strong to achieve a \$5 trillion economy. At

present, India is also working on increasing exports and it has received due. But India needs special efforts. In this direction, India should consider strengthening infrastructure with schemes like Make in India and Start up India. Which can realize the goal of a 5 trillion economy with exports of 1 trillion dollars in near future.

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E-waste Roadmap 2023 for India

Context:

Recently, the Union Ministry of Environment, Forest and Climate Change made public the draft notification for Electronic waste management rules. The rules, which have been put up for public feedback, are expected to come into effect by August, 2022.

Key Highlights:

Targets: Consumer goods companies and makers of electronics goods have to ensure that at least 60% of their electronic waste is collected and recycled by 2023 with targets to increase them to 70% and 80% in 2024 and 2025 respectively. The rules bring into effect a system of trading in certificates, akin to carbon credits, that will allow companies to temporarily bridge shortfalls. The extended producer responsibility (EPR) certificates certify the quantity of e-waste collected and recycled in a particular year by a company and an organisation may sell surplus quantities to another company to help it meet its obligations. Companies will have to register on an online portal and specify their annual production and e-waste collection targets.

Monitoring authority: Central Pollution Control Board (CPCB) is the chief entity that coordinates the trade of EPR certificates and monitors if companies are meeting their targets. A steering committee to be headed by the Chairman of the CPCB will oversee the overall implementation of

these regulations.

Non-Compliance: Companies that don't meet their annual targets will have to pay a fine or an "environmental compensation", but the draft doesn't specify the quantum of these fines.

Provisions to comply at later date: Companies that fall short of the annual target can meet a year's target, even after three years. Those that meet their targets with a year's delay will be refunded 85% of their fine, and 60% and 30% after the second and third year, respectively.

Role of State governments: The responsibility of earmarking industrial space for e-waste dismantling and recycling facilities lies with them. Establishing measures for protecting the health and safety of workers engaged in the dismantling and recycling facilities for e-waste.

About E waste:

Electronic waste or e-waste is generated when electronic and electrical equipment becomes unfit for their originally intended use or had crossed the expiry date. Examples: Computers, servers, mainframes, monitors, compact discs (CDs), printers, scanners etc.

E-waste typically consists of metals, plastics, cathode ray tubes (CRTs), printed circuit boards, cables, and so on. The presence of toxic substances such as liquid crystal, lithium, mercury, nickel, polychlorinated biphenyls (PCBs), cadmium, chrome, cobalt, copper, and lead, make it very haz-

ardous. International E-Waste Day has been observed on 14th October since 2018.

Global Scenario:

The EU legislations restricting the use of hazardous substances in electrical and electronic equipment (Directive 2002/95/EC) and promoting the collection and recycling of such equipment (Directive 2002/96/EC) were enforced in February 2003.

The legislation provides for the creation of collection schemes where consumers return their used e-waste free of charge. The objective of these schemes is to increase the recycling and/or re-use of such products.

Major initiatives on RoHS were taken in California, Norway, China, South Korea and Japan. Many countries including Australia, New Zealand, Thailand, Malaysia, Taiwan, Canada and Brazil are also seriously considering the matter.

Current Challenges for e-Waste Elimination:

1. Cost of recycling e-Waste exceeds the revenue recovered: In many cases, the cost of recycling e-Waste exceeds the revenue recovered from materials especially in countries with strict environment regulations.
2. e-Waste Dumped in poor countries: E-Waste mostly ends up dumped in countries where environmental standards are low or nonexistent and working conditions are poor.



evolved to include small units in unorganized sector and large units in organized sector into a single value chain. E-waste contains hazardous substances that are harmful to the environment and human health if not properly treated or disposed of, therefore they must be handled with care.

3. **Lack of Waste Removal Infrastructure:** Most developing countries lack the waste removal infrastructure and technical capacities necessary to ensure the safe disposal of hazardous waste.

4. **Variety of Health Problems:** E-Waste has been linked to a variety of health problems, including cancer, neurological and respiratory disorders, and birth defects.

Indian Enforcement Agencies involved in E-waste:

Ministry of Environment Forest and Climate Change, Government of India is responsible for identification of hazardous wastes and provides permission to exporters and importers under the Environment (protection) Act, 1986.

Central Pollution Control Board (CPCB) was constituted under the Water (Prevention and Control of Pollution) Act, 1974. CPCB coordinates activities with the State Pollution Control Boards and ensures implementations of the conditions of imports. It also monitors the compliance of the conditions of authorization, import and export and conduct training courses for authorities deal-

ing with management of hazardous wastes.

Ways to Manage e-Waste:

1. Store Data Online:

By storing data online, we can still access our data from anywhere around the world, without the need to carry a storage device at all times. Cloud storage also gives us a large amount of storage, for free or very cheap.

2. Buy Energy Star Rated Electronics:

A high Energy Star rated device consumes less energy, reducing our electricity bill significantly. In addition, because less energy is required, it keeps a check on resource (energy) depletion by avoiding over-utilization.

3. Spread awareness:

Proper education, awareness and most importantly alternative cost effective technology need to be provided so that better means can be provided to those who earn their livelihood from this.

Conclusion:

A holistic approach is needed to address the challenges faced by India in e-waste management. A

suitable mechanism needs to be

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Digitisation for Speedy, Efficient Delivery of Justice :

Context

Indian Judicial System has been suffering from pendency of cases. Over 4.3 Crore cases have been pending at various stages of the judicial process. Digitization of the Judicial process holds promise in reaffirming the trust of the citizen in the Judiciary.

Digitization of the Judicial Process

Digitization refers to the increased usage of digital technology to perform conventional tasks, thereby reducing time and enhancing public service delivery. In the context of Judicial Process, it stands for documentation of the case in digital format. Richard Eric Susskind in his book, *The Future of Law*, has written that in the coming years, lawyers and their litigants will communicate through email. Technology will bring drastic changes in the field of law and will transform the Court system.

Evolution of digitization in Administration and Judiciary

In the late 1990s, E-governance was introduced in the administration. E-Governance refers to the usage of Information and Communication Technology (ICT) tools to serve the needs of the people. But, its usage accelerated after the enactment of the Information and Technology Act, 2000.

The focus gradually shifted to Digitising the court's records & Establishing e- courts across the country. In the year of 2006, e-courts were

launched as a part of the National e-Governance Plan (NeGP). Virtual hearings of courts started. Earlier it was limited to certain criminal cases where it was not possible to physically produce the accused. Live-streaming of court proceedings for openness and transparency.

Steps taken for the usage of technology in Judicial Process

Digitisation of judicial records and establishment of e-courts

E-Courts Project:

This was conceptualized under the "National Policy and Action Plan for Implementation of Information and Communication Technology (ICT) in the Indian Judiciary-2005". The e-Committee is the governing body charged with overseeing the e-Courts Project. Its vision is to transform the judicial system of the country through the ICT enablement of courts. e-filing of cases/petitions by state governments in all matters has been made mandatory from January 1, 2022.

National Judicial Data Grid:

National Judicial Data Grid (NJDG) is a database of orders, judgments and case details of 18,735 computerised District & Subordinate Courts created as an online platform under the e-Courts Project. Data is updated on a near real-time basis by the connected District and Taluka Courts and High Courts.

SUPACE:

It is short form of Supreme Court Portal for Assistance in Court's Effi-

ciency. It is a composite AI-assisted tool. It makes all relevant cases available to a judge/ legal researcher for making an informed decision.

SUVAS:

It is short form of Supreme Court Vidhik Anuvaad Software. It is used to translate SC judgments into regional languages.

Virtual hearings in Courts

The Supreme Court in *Anjali Brahmawar Chauhan vs Navin Chauhan* allowed the family court, Gautam Buddha Nagar, to conduct the trial of a matrimonial case through video-conferencing.

Live Streaming of Courts' proceedings on the basis of the judgment in *Swapnil Tripathi*, in 2018 the Supreme Court allowed the live-streaming of cases of constitutional and national importance. Gujarat High Court became the 1st court in the country to live stream its proceedings.

Benefits of usage of technology and digitisation

- **Reduction in the need for storage infrastructure for case files-**

This space could be utilised for increasing courtrooms and recruiting more judges for enhanced access to justice and speedy Justice delivery. Judges- Population ratio: 20 per Million for India (whereas for other countries it is approximately double).

- **Increased traceability of Case files-**

This will reduce adjournments due to the traceability of affidavits which

were stored electronically.

- **Reduced time for Court proceedings.**

The time consumed in summoning records from the lower courts to the appellate courts is one of the major factors causing delays in cases. Due to the digitisation of the records, this time would reduce significantly.

- **For ensuring real justice**

In 'State of Uttar Pradesh v. Abhay Raj Singh', it was held by the Supreme Court that if court records go missing and reconstruction is not possible, the courts are bound to set aside the conviction. This would allow the accused to not be held accountable for the crimes committed. This would lead to a miscarriage of Justice and hence digitisation provides a panacea against this.

- **For increased ease of procedure in the judicial ecosystem.**

Lawyers can check the status of the filing, the status of applications and affidavits, the date of the next hearing, orders passed by the courts etc, just by clicking on an app. It would no more be required to physically visit the courts to know the status of the case.

- **Increased openness and transparency.**

A litigant can be more informed about the status of his/ her court case. This will lead to enhanced trust in Judiciary.

Challenges

Digitisation and usage of digital infrastructure require increased funding. Digital Literacy amongst the stakeholders is abysmal.

Lawyers and Judges struggled to shift to virtual hearings during the pandemic. The status of it is poor in the case of the rural population.

Privacy Concerns- With increasing digitisation, especially of court records, privacy concerns are likely to

be at the forefront of judicial and public deliberations in the coming years.

Hacking and Cyber security- On the top of technology, cyber-security will be a huge concern too. The government has initiated remedial steps to address this problem and formulated the Cyber Security Strategy.

Not every case can be disposed of virtually nor can these be live-streamed. These include some criminal cases.

Internet connectivity issues- Deployed with adequate planning and safeguards, technological tools can be a game changer. However, technology is not per se value-neutral — that is, it is not immune to biases. Power imbalances need to be checked upon.

Lack of a well-equipped space where lawyers can conduct their cases.



Way Forward

For Funding National Judicial Infrastructure Authority has been proposed. The Ministry of Law and Justice is working in this regard.

For increasing digital literacy and technical know-how and taking the help of NGOs like CLAP regarding this.

As the technology grows, concerns about data protection, privacy, human rights and ethics will pose fresh challenges and hence, will require

great self-regulation by developers of these technologies. It will also require external regulation by the legislature through statute, rules, regulation and by the judiciary through judicial review and constitutional standards.

Cases related to matrimonial issues and domestic violence, bounced cheques, motor accident compensation referred to mediation centres and Lokadalats could be included in the list of cases fit for disposal through the virtual hearing.

Conclusion

Digitization has its advantages to ensure that people feel close to the Judicial system. Proportionate Justice with the right speed will ensure that the Judiciary, as an important pillar of democracy, remains functional in letter and spirit. Digitization will play a crucial role in this.

NOTES



SHORT ISSUES

1 “SHRESHTA”

Union Minister of social Justice and empowerment Dr. Virendra Kumar launched the Scheme **“SHRESHTA”- Scheme for residential education for students in High school in Targeted Areas.**

The Scheme will be beneficial for SC students those who could not reach for higher quality education. This initiative will bring a drastic change for the betterment of their life.

Aim

The Scheme for Residential Education for Students in Targeted Areas (SHRESHTA) has been formulated with the objective to provide quality education and opportunities for even the poorest Scheduled Caste students, as per the Constitutional mandate. The students from the Scheduled Caste communities, for long been subjects to inequality, were kept out of quality education and a situation that perpetuates the disadvantages carried forward for generations of lack of adequate education.

Initiative

The Governmental efforts to spread educational facilities without discrimination have worked well in achieving near universal access. However, the objective of providing access to quality education that provides a level playing field is still far from reality. Accordingly, the Department as a new initiative has introduced the scheme for providing quality education in top class private Residential Schools to the meritorious SC students who cannot afford the fee of such schools.

Implementaion

Scheme for Residential Education for Students in High Schools in Targeted Areas (SHRESHTA) provides for high quality education for meritorious but poor SC students in CBSE-affiliated reputed residential schools across the country. Approximately 3,000 seats are provided each year for admission in class 9th and 11th and the entire cost of the school fee and residential charges are borne by

the Department.

Selection

The students, belonging to Scheduled Castes, studying in class 8th and 10th in the current academic year are eligible for availing the benefits of scheme are selected through a transparent mechanism through a National Entrance Test for SHRESHTA (NETS), which is conducted by the National Testing Agency (NTA) for admission in class 9th and 11th. Students belonging to marginalized income group within the SC community, whose parental annual income is upto Rs.2.5 Lakh are eligible. Successful candidates, after following the e-counselling process, are given admission in the school of their choice anywhere in the Country for their academic persuasion. The Department shall bear the total cost of the school fee and hostel charges till completion of their academic upto class 12th. There after the students of the scheme may avail benefits of other schemes of the Department for their higher education.

2 Jan Samarth Portal

Why in news?

The Prime Minister inaugurated the ‘Iconic Week Celebration’ organized by the Ministry of Finance and Corporate Affairs at Vigyan Bhawan, New Delhi. At the same function The Prime Minister also launched a special credit linked portal named ‘Jan Samarth Portal’.

About Jan Samarth Portal-

It is a digital platform in which 13 credit linked government schemes have been linked. This is a unique portal of its kind, where both the lender and the borrower will be linked. Interested persons can also check their eligibility by applying on the portal. If their eligibility is found correct then they will get the loan approval. That person can also check the status of his loan after getting

permission. So far, the number of small and big lenders has gone up to 125.

Process for applying on the portal-

At present, loans will be given in only four categories such as education loan, agricultural infrastructure development loan, business loan and livelihood loan. Several schemes have been added to each category.

Interested person will have to apply in his/her category and have to answer some important questions. After that approval will be given online only. To take a loan, it is also necessary to have some necessary documents like- Voter ID card, PAN card, Bank statement, Aadhar number etc.

Process for application status-

A person who has become eligible for a loan once on the Jan Samarth portal, goes to the portal and signs up with the registration number and password, after which it comes on the display that in which stage is the approval of their loan? Apart from this,

a time of three days has been fixed for the resolution of any problem.

Challenges of Jan Samarth Portal-

1. The main four categories in which the government has included the matter of lending are directly and indirectly related to rural areas, but still there is a lack of sufficient awareness in rural areas and the speed of internet is also very low. Due to which people will be inconvenienced.

2. Due to increased pressure on the portal, it will also need to work on its servers so that digital data is not misused. Like hackers hacking ATM cards etc.

3. Even today the availability of smartphones in rural areas is less, so this also has to be taken care of and along with emphasis on training work for better results.

The government also launched a portal in 2018 covering micro, medium and cottage industries, home loans and vehicle and personal loans. In this, it was made that once the registration and approval is received, the bank will approve the loan in just 59 minutes but not much progress has been seen on that. Therefore, the government will have to focus on its better implementation according to the objective.

INTERNATIONAL

1

BIMSTEC turns 25

Why in News?

June 6 marked the completion of 25 years since the 1997 Bangkok Declaration launched a modest grouping (of Bangladesh, India, Sri Lanka, and Thailand), with the acronym, BIST-EC.

Three countries (Nepal, Bhutan, and Myanmar) joined it later to make it the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC).

About BIMSTEC

- BIMSTEC is a multilateral regional organisation established with the aim of accelerating shared growth and cooperation between littoral and adjacent countries in the Bay of Bengal region.
- It was founded as BIST-EC, in June 1997, with the adoption of the Bangkok Declaration, with Bangladesh,

India, Sri Lanka, and Thailand as members.

- It became BIMST-EC (Bangladesh, India, Myanmar, Sri Lanka, and Thailand Economic Cooperation) with the entry of Myanmar in late 1997 and eventually, it was named in its current form, when Nepal and Bhutan became members in 2004.
- The first BIMSTEC Summit was held on July 31, 2004 and BIMSTEC headquarters are in Dhaka, Bangladesh.
- The BIMSTEC region hosts 22% of the world population or 1.68 billion people; and the member States have a combined GDP of US\$ 3.697 trillion/per year.

Key Achievements of BIMSTEC:

• New Charter:

It has crafted a new Charter for itself, spelling out the grouping's vision,

and functions of its constituent parts, and has secured a legal personality.

• Prioritized the Sectors of Cooperation:

It has reduced them from 14 to 7, with each member-state serving as the lead country for the assigned sector.

• Strengthening Secretariat:

Measures were taken to strengthen the Secretariat, although some members are yet to extend adequate personnel support to it.

• Regular Summits:

Unlike the South Asian Association for Regional Cooperation (SAARC) and Indian Ocean Rim Association (IORA), post-2014, BIMSTEC has continued to hold its summits and meetings of Foreign Ministers. Since its establishment in 1997, BIMSTEC has succeeded in holding five summits so far; it has now resolved to hold

regular summits once in two years.

- **Security and Humanitarian Cooperation:**

The grouping has also registered progress in combating terrorism, forging security cooperation, and creating mechanisms and practices for the better management of humanitarian assistance and disaster relief.

- **Economic Cooperation:**

Memoranda of Understanding, agreements, and legal instruments provide the foundation for developing functional cooperation in select areas such as agriculture, trade, sustainable development, and connectivity.

- **Sectoral Cooperation:**

Institutions such as an Energy Centre and the Centre on Weather and Climate are in place to push sectoral cooperation forward.

Important Projects

- Kaladan Multimodal Project – links India and Myanmar.
- Asian Trilateral Highway – connecting India and Thailand through Myanmar.
- Bangladesh-Bhutan-India-Nepal (BBIN) Motor Vehicles Agreement – for seamless flow of passenger and cargo traffic.

Conclusion:

- In this Indo-Pacific century, the BIMSTEC has the potential to play

a pivotal role, deepening linkages between South Asia and Southeast Asia.

- It should accelerate the region's economic development by collaborating with the newly minted Indo-Pacific Economic Framework for Prosperity (IPEF).
- New synergy should be created between BIMSTEC and the IPEF.
- While all member-states are equal, three have a special responsibility:
 - Bangladesh as the host of the BIMSTEC Secretariat;
 - Thailand as the representative of Southeast Asia; and
 - India as the largest State in South Asia.

2 The upcoming WTO Meet

Why in News:

The twelfth Ministerial Conference (MC12) of the WTO will take place during June 12-15 in Geneva to decide on crucial issues impacting world trade. The Ministerial Conference is the highest decision-making forum of the WTO. Originally it was scheduled to be held from 8th June to 11th June 2020.

About World Trade Organization (WTO)

It is the only global international organization dealing with the rules of trade between nations. The WTO is the successor to the General Agreement on Tariffs and Trade (GATT), which was created in 1947.

The WTO has 164 members and 23 observer governments. Afghanistan became the 164th member in July 2016. In addition to states, the European Union, and each EU country in its own right is a member.

Headquarter: Geneva, Switzerland

Nigeria's Ngozi Okonjo-Iweala is Director-General of the WTO. She is the first African official and the first woman to hold the position.

Roles:

- It operates a global system of trade rules,
- It acts as a forum for negotiating trade agreements,
- It settles trade disputes between its members.
- It supports the needs of developing countries.

Issues taken up oncoming WTO conference:

These are the five important issues that will be discussed at the MC12.

1. Fisheries sector:

- Overfishing and subsidies are the two major issues the Fisheries sector is facing.
- India, Indonesia, and the African Caribbean and Pacific (ACP) group want greater flexibility to preserve

the policy space and to develop their underdeveloped fisheries sector. The group wants the advanced fishing nations to take greater responsibility for the sustainable exploitation of fisheries resources.

- The negotiations aim to
 - a) Eliminate subsidies to Illegal, Unreported and Unregulated (IUU) fishing.
 - b) Prohibit subsidies for fishing overfished stocks.
 - c) Subsidies to fishing contributing to overfishing and overcapacity.
 - d) The idea is to curb subsidies that threaten the sustainability of fishing.

2. Agriculture and food security:

For India, securing the Permanent Solution to the issue of public stock holding (PSH) would be the top priority. The government uses the PSH mechanism to buy rice and wheat from the farmers at the minimum support price (MSP) which is generally higher than the prevailing

market price. The government then stores and sells these at a low price to ensure food security to more than 800 million poor people.

3. Moratorium on E-com and TRIPS:

To promote e-commerce, the WTO members in 1998 agreed to not charge (Moratorium) Customs Duties on Electronic Transmission for two years. Similarly, members agreed to a moratorium on the launch of dis-

putes at the WTO over intellectual property rights.

4. Easing pandemic pain:

WTO's response to the pandemic is a priority for MC12. India and South Africa proposed for waiving patent protections on Covid-19 vaccines temporarily by more generous application of the 'compulsory licensing' procedure allowed under the TRIPS agreement.

5. Other issues:

The most awaited reform is restoring the functioning of the Dispute Settlement System (DSS) including the Appellate Body (AB). This is needed to preserve the rights and obligations of WTO Members. DSS must maintain an independent, two-tier dispute settlement system, and decision-making by the negative consensus where provided.

ENVIRONMENT

1

Cheetahs Set To Be Reintroduced In India

Why in News

India is bringing the cheetahs from South Africa. They are expected to arrive in India's Kuno Palpur wildlife sanctuary in Madhya Pradesh by this August. India aspires to import at least 30 cheetahs in the next five years. The timing chimes with India celebrating 75 years of independence which the Centre has been building up to, as part of the 'Azadi Ka Amrit Mahotsav' campaign.

About Cheetah

Cheetah, (*Acinonyx jubatus*), one of the world's most-recognizable cats, is known especially for its speed. They are considered native to Africa and central Iran. Asiatic cheetah is believed to survive only in Iran.

Habitat:

Cheetahs can live in a variety of habitats but prefer to live in grasslands and open plains.

Physical Characteristics of Asiatic Cheetah

Smaller and paler than the African cheetah. Has more fur, a smaller

head, and a longer neck. Usually have red eyes and they have a more cat-like appearance.

Conservation Status of Asiatic Cheetah

- IUCN- Critically Endangered (African Cheetah is in Vulnerable Category)
- CITES- Appendix 1 (Same as African Cheetah)

The last cheetah of India

The cheetah is the only large carnivore to have gone extinct in India, primarily due to hunting and habitat loss. Maharaja Ramanuj Pratap Singh Deo of Kota, Madhya Pradesh, is widely believed to have killed the last three recorded cheetahs in India in 1947. In 1952, the Indian government officially declared the Cheetah extinct in the country.

About Kuno Palpur wildlife sanctuary

Kuno is a national park in Madhya Pradesh, India. Established in 1981

as a wildlife sanctuary in the Sheopur and Morena districts, it was also known as Kuno-Palpur and Palpur-Kuno Wildlife Sanctuary.

In 2018, it was given the status of a national park. It is part of the Khatiar-Gir dry deciduous forests ecoregion. Kuno river flows through the Kuno National Park from south to north, draining the other rivulets and Tributaries into Chambal River in Morena at the MP-Rajasthan border. If a cheetah is introduced, Kuno Palpur will become, the only wildlife sanctuary in the world to host all four major cat species-lion, tiger, cheetah, and leopard.

The other sites recommended for holding and conservation breeding

1. Nauradehi Wildlife Sanctuary (1,197 sq. km, habitat 5,500 sq. km), Madhya Pradesh
2. Gandhi Sagar Wildlife Sanctuary – Bhainsrorgarh Wildlife Sanctuary complex (~2500 sq. km), Madhya Pradesh
3. Shahgarh bulge in Jaisalmer, Ra-

jasthan (4,220 sq. km)

4. Mukundara Tiger Reserve as fenced enclosure (~80 sq. km), Rajasthan

Earlier Efforts of reintroduction:

1. The State Wildlife Board of Andhra Pradesh was the first to suggest the policy in 1955, on an experimental

basis in two districts of the state.

2. In the 1970s, the Department of Environment formally requested Iran, which had 300 Asiatic cheetahs at the time, for some cheetahs. The Shah of Iran was deposed before any deal could be reached.

How will cheetahs be chosen for India?

In choosing the cheetahs for India, the animals' lineage and genetic history will be examined to ensure that they are not from an excessively inbred stock and are in the ideal age group so that they make up a suitable founding population.

2

India Rejected EPI 2022 Report

Context:

The Union Environment Ministry has rebutted the Environmental Performance Index 2022, which ranked India at the bottom of a list of 180 countries, saying some of the indicators it used are extrapolated and based on surmises and unscientific methods.

About Environmental Performance Index 2022

The EPI, a biennial index, was started in 2002 as Environmental Sustainability Index by the World Economic Forum in collaboration with the Yale Center for Environmental Law and Policy and the Columbia University Center for International Earth Science Information Network.

The recently released Environmental Performance Index 2022 evaluated countries on climate change performance, environmental health, and ecosystem vitality using 40 performance indicators across 11 categories.

Environmental Performance Index 2022 categories are in turn aggregated into 3 policy objectives:

1. Environmental Health
2. Ecosystem Vitality
3. Climate Change.

The EPI team transforms the raw environmental data into indicators that place countries on a 0–100 scale

from worst to best performance

Environmental Performance Index 2022: India's score

India has been given an EPI score of 18.9 EPI on the Environmental Performance Index 2022. The three primary categories under which the scores have been given are ecosystem vitality, climate change performance, and environmental health.

India has score 19.3 on the ecosystem vitality on the index and the change in the area in the last decade in-2.

The country has score 12.5 on health, meaning poor air quality, drinking water and sanitation. India's waste management in terms of ocean plastics, solid wastes and recycling is also poor.

India's objections on Environmental Performance Index:

1. A new indicator in the climate policy objective is 'projected GHG emissions levels in 2050'. This is computed based on the average rate of change in emission of the last 10 years instead of modelling that takes into account a longer time period, extent of renewable energy capacity and use, additional carbon sinks, energy efficiency etc. of respective countries.

2. Forests and wetlands of the

country are crucial carbon sinks but have not been factored in while computing the projected GHG emissions trajectory up to 2050 given by EPI 2022.

3. Historical data on the lowest emission trajectory has been ignored in the computation.

4. No indicator talks about renewable energy, energy efficiency and process optimisation. The selection of indicators is biased and incomplete...Per capita GHG emissions contribute only a miniscule 2.6 per cent weight overall in the index.

5. The principle of equity is given very low weightage in the form of indicators like GHG emission per capita and GHG Emission intensity trend. The CBDR-RC principle is also barely reflected in the composition of the index.

6. Common but Differentiated Responsibilities and Respective Capabilities (CBDR RC) acknowledges the different capabilities and differing responsibilities of individual countries in addressing climate change.

7. The indicators on water quality, water use efficiency, waste generation per capita which are closely linked to sustainable consumption and production are not included in the Index.

SCIENCE AND TECH

1 International Liquid Mirror Telescope

Why in news?

The International liquid Mirror Telescope has entered the commissioning phase and will start observations around October.

Where is it situated?

It is housed in the Devasthal Observatory Campus owned by Aryabhata Research Institute of Observational sciences. Nainital at 2450mts. Height in Kumaon Himalayas

Key facts

1. First liquid Mirror Telescope of the world to be commissioned for Astronomy
2. Asia's largest liquid mirror telescope
3. Third telescope in Devasthal facility.

Key features

- It is built by the astronomers from India, Belgium, & Canada.
- It was designed and built at Advanced Mechanical and Optical Systems Cooperation Belgium.

About liquid mirror telescope

1. A liquid mirror telescope employs mercury as a reflective surface.
2. This liquid is rotated at room temperature due to which it takes a parabolic shape which is required for focusing light.

Difference from Conventional telescopes

1. They use glass mirror for image

focusing large telescopes use segmented mirrors.

2. They are mobile (glass mirror telescope of certain size can be moved)

Significance

1. Will produce large amount of data about 10 GB of data /night which will provide variety of information.
2. It will observe asteroids, Supernova, space debris, & other celestial objects.
3. Cost effective as segmented mirrors in large telescopes require huge capital investments for maintenance.
4. Best for making observations as the Zeuth has least resistance to light path.

Drawback

1. The flexibility due to liquid mercury is Low as the telescope can only kept facing the sky and cannot be pointed in some directions like conventional counterparts.

Working Schedule

1. Operational capabilities to start from October this year
2. Would work for 5 years every night except monsoon months. (June-August)

Way forward

India should work towards similar projects with international cooperation in order to enhance cooperation and knowledge sharing and alongside implement such projects in regional sphere and use space diplomacy to rise as a soft power in region and beyond.

NOTES

2

Supermassive black hole hiding in universe's most energetic object

A black hole is formed from the death of a star with such a high gravitational field that the matter gets squeezed into the small space under it, trapping the light of the dead star. The object discovered in the heart of a very distant place was inside a blazar, known for its excessive luminosity.

When the jet, composed of ionized matter traveling at nearly the speed of light, is pointed towards an observer, it is called a blazar. These blazars are unique as it is gravitationally lensed by intervening galaxies, a phenomenon by which light shining from far away is bent and pulled by the gravity of an object between its source and the observer.

Astronomers from Argentina, Spain, Italy, the USA, and India discovered the binary supermassive black hole system in the gravitationally lensed blazar. They used extensive optical photometric observations carried out around the globe during the last four decades (1982- 2019).

The team discovered periodic double-peaked flaring events at an interval of around 8 years, and the separations between two peaks of these flares are around 2 years. After observing five such events, they have now launched a global optical pho-

tometric monitoring campaign dubbed the Whole Earth Blazar Telescope (WEBT).

The team detected five sets of double-peaked flaring activities during time ranges: January 1982- October 1984, March 1989 - July 1993, April 1996 - March 2001, June 2006- June 2009, and May 2014- May 2017. The next such event will happen between November 2022 and May 2025.

The study has been published in the journal Monthly Notices of the Royal Astronomical Society (MNRAS). According to the Ministry of Science & Technology, Dr. Alok C. Gupta, Senior Scientist from Aryabhata Research Institute of Observational Sciences (ARIES), Nainital participated in the study.

The ministry further said that astronomers expect the next such two-years-long flaring episodes to happen between November 2022 and May 2025. An intensive multi-wavelength WEBT campaign will be conducted during this period.

The blazar AO 0235+164 is the first binary SMBH gravitationally lensed system, which will be a strong candidate of its kind for future detection of gravitational waves (GWs) using the pulsar

timing array and future space-based GW detectors.

NOTES

ECONOMY

1

Entry of Cooperatives in GeM

Why in News?

The Union cabinet has cleared a proposal allowing cooperatives to sell products on the Government- e-Marketplace (GeM) platform.

What is GeM?

The one stop portal to facilitate on-line procurements of Common use Goods and services has started in 2017.

Significance of GeM

- It provides an online platform to all government buyers whether it is Central-State ministries and Public Sector Enterprises.
- Transparent and Cost-effective Procurement portal.
- Promote 'Vocal for Local' concept and in wholesome encourage Atmanirbhar Bharat.
- Also provide entry to small private players to sell their products directly to govt. bodies.

Benefit to Cooperatives via this step:

- According to govt. estimation, this move will benefit directly 27 crore people associated with 8.5 lakh cooperatives.
- The Micro and medium small industries will get buyers and it will boost their economies and enhance their role in mainstream sell-buy process.

The Cooperatives in India and

challenges faced by it: -

Historically, cooperatives had been a very crucial to economic and inclusive integration for India.

- So it gained a statutory position under Constitution via 97th Amendment Act in 2011.
- This amendment had added a new part 1XB regarding the working of cooperatives in India.
- The word 'Cooperatives' was also added in Article 19(1)(c) under Part III of constitution.

A new revolutionary move has been taken by Central government by creating a Separate "Ministry of cooperation" for realising the vision of Sahkar se Samridhi' in July 2021. But besides such corrective measures, cooperative In India still faces some various types of challenges:-

- (a) Functional Weakness - The co- operatives has suffered from inadequacy of trained personnel.
- (b) Restricted or limited Coverage - most of societies are Confined to a few members and operations are limited to one or two villages.
- (c) Lack of Awareness and accessibility to benefits - Many people are not informed about steps taken by Government to promote cooperatives.
- (d) Mismanagement and Political Interferences - Many cooperatives are run by influential personnel and become a tool by politicians to extend their influence in local regions. As, with having dominant role in India's history of economic growth, coopera-

tives in India needs to strengthened. This have to make more accessible and more approachable for common Indians. Because strong cooperative system can effectively solve the problem of poverty and unemployment at targeted level via encouraging cottage industries and economic inclusiveness.

Therefore step of enabling cooperatives to sell their products on GeM plate form make them more strong and promote competitiveness among them..

NOTES

2 Hike in Minimum Support Price

Why in News?

The government has hiked the minimum support price (MSP) for this year's paddy crop by Rs 100 per quintal over 2021-22.

Key Highlights

The hike is higher than the Rs 72, Rs 53 and Rs 65 per quintal increase during the preceding three years, while below the Rs 180-200 of 2018-19, announced just before the general election of 2019.

Decision on MSP

The Commission for Agricultural Costs & Prices (CACP) recommends MSP to CCEA (Cabinet Committee on Economic Affairs), which takes the final decision.

CACP is an attached office of the Ministry of Agriculture and Farmers Welfare, Government of India.

The commission has a Chairman, Member Secretary, 1 official member and 2 non-official members, with non-official members representing the farming community.

MSP is announced for which crops? CACP recommends MSPs of 23 commodities, which comprise:

- 7 cereals (paddy, wheat, maize, sorghum, pearl millet, barley and ragi),
- 5 pulses (gram, tur, moong, urad, lentil),
- 7 oilseeds (groundnut, rapeseed-mustard, soybean, sesamum, sunflower, safflower, nigerseed), and
- 4 commercial crops (copra, sugarcane, cotton and raw jute)

How is MSP decided?

- MSP is calculated by CACP on the basis of the formula of $1.5 * (A2 + FL)$
- A2 refers to costs incurred by

farmers on inputs like Seeds, Fertilizers, etc

- FL refers to the imputed cost of family labour.
- The 2nd Farmers Commission under the chairmanship of Dr.M S Swaminathan had recommended to also include C2 in MSP, along with A2 + FL.

C2 includes:

- Rentals foregone on owned land.
- Interests foregone on fixed capital assets.

The decision to hike MSP

- The CACP has estimated the average production cost of paddy (all paid-up expenses plus an imputed value of unpaid family labour) for 2022-23 at Rs 1,360 per quintal.
- As per the formula $1.5 * (A2 + FL)$ i.e. $1.5 * Rs\ 1360$ is Rs 2040.
- Thus, farmers are only being compensated for higher cultivation costs.

Storing enough grains

- A more pertinent factor for this hike has to do with public food grain stocks. On June 1, it is the lowest for wheat in 14 years [311 lakh tonnes (lt)].
- Although rice stocks are above last year's corresponding level (496 lt vs 491 lt).
- The government is not taking chances. Rice will be the major crop for ensuring food security as the next wheat crop will be available for procurement by 2023.
- Hence, the need to ensure adequate stocks and procurement of paddy, whose plantings take off in June and marketing from October.

Issues with the hike in MSP

- A short-term move to bolster

government cereal stocks. Instead, the government could expand the area of procurement and relax the procurement criteria for shrivelled wheat.

- It undermines the cause of crop diversification. As the farmers are psychologically forced to grow crops that have been announced for procurement.
- Environmental and Agro-ecological neglect:
- Cultivation of water-guzzling paddy and sugarcane (in states like Punjab, Haryana, Maharashtra and Telangana) over oilseeds, pulses, cotton, fruits, vegetables and other high-value crops is ill-advised.

Conclusion

- The current system of assured MSP and open-ended procurement for only paddy, wheat and sugarcane cultivated in a handful of states is simply unsustainable, both fiscally and environmentally.
- Depleted public stocks and high global prices of cereals are temporary phenomena. The government should not take its eye off the real reform road ahead.

NOTES

1. Public Dashboard of NHA updated with new features

National Health Authority (NHA) has released a new and dynamic public dashboard for the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB PM-JAY), which provides a detailed perspective of scheme implementation statistics in a comprehensive manner. The dashboard is another phase in the PM-JAY scheme's progression, providing a transparent view of the scheme's progress from the perspective of a state or a Union Territory.

KEY POINTS:

- It offers an interactive interface that uses informative charts to illustrate the scheme's key performance indicators.
- The revamped dashboard intends to deliver vital information and insights on the scheme's development through real-time data and analysis.
- Its goal is to give the public and **PM-JAY** ecosystem stakeholders a better understanding of the scheme's day-to-day performance.
- This will help with data-driven and evidence-based policymaking in the long run, as well as encourage more transparency and accountability in the public sector.
- The initiative helps in the Indian government's objective of minimum government and maximum governance.
- At both the national and state levels, the newly enhanced dashboard gives precise information on the number of Ayushman Bharat cards produced, empanelled hospitals, and authorised hospital admissions, among other things.

**national
health
authority**



2. Centre Clears Entire GST Compensation

The Government of India has released the entire amount of GST compensation payable to States up to 31st May, 2022 by releasing an amount of Rs.86,912 crores. This decision was taken to assist the States in managing their resources and ensuring that their programmes especially the expenditure on capital is carried out successfully during the financial year.

Goods and Services Tax was introduced in the country w.e.f. 1st July, 2017 and States were assured for compensation for loss of any revenue arising on account of implementation of GST as per the provisions of the GST (Compensation to States) Act, 2017 for a period of five years. For providing compensation to States, Cess is being levied on certain goods and the amount of Cess collected is being credited to Compensation Fund. Compensation to States is being paid out of the Compensation Fund w.e.f. 1st July, 2017.



3. India Bangladesh Joint Military Exercise: SAMPRITI-X

The Ex SAMPRITI-X is being conducted with the aim of strengthening interoperability between both the armies and to understand each other's operational techniques and tactical drills. DOGRA Regiment is representing India in the exercise. During the exercise, armies of India and Bangladesh will share expertise in simulated scenarios of Humanitarian Assistance & Disaster Relief, Counter Terrorism, and UN Peacekeeping Force under the mandate of United Nation. The exercise is an annual event.

Relations

Diplomatic relations between India and Bangladesh started in 1971, after India recognised the independence of Bangladesh. Bilateral relations have been characterised as a special relationship.

Both the countries signed land boundary agreement on June 6, 2015 settling the decades old border disputes. Sharing of transboundary river water is still on negotiating table. In recent years, anti-India sentiments are rising in Bangladesh.

Cooperation during COVID

India's Serum Institute provided Covishield vaccines to Bangladesh for mass COVID-19 vaccination. Bangladesh procured 7 million doses while India gifted 3.3 million doses. In April 2021, Bangladesh sent medical equipment and medicines to India during 2nd COVID-19 wave in India. The relief package comprised of vials of Remdesivir anti-viral injections, PPE kits, and zinc, vitamin C, calcium, and other necessary tablets.

4. Industrial output growth rose to 8-month high

Industrial output expanded 7.1% in April, the fastest pace in eight months, on the back of improved performance by the power and mining sectors, as per government data.

The manufacturing sector recorded growth of 6.3% in the first month of the current financial year, data on Index of Industrial Production (IIP) released by the National Statistical Office (NSO) showed. The earlier high for IIP growth was 13% recorded in August 2021.

However, the NSO added that growth rates over the corresponding period of the previous year were to be interpreted considering the unusual circumstances on account of the COVID19 pandemic since March 2020. The power and mining sectors grew 11.8% and 7.8%, respectively, in April. As per use-based classification, the capital goods segment recorded a growth of 14.7%, while consumer durables output expanded 8.5%.



5. RBI lens on Neobanks

The Reserve Bank of India (RBI) is taking a close look at the Neobank business model, where fintechs become connected to a traditional bank's network and become a customer-oriented banking service provider.

About Neobanks

Neobank is a kind of digital bank which does not have any branch. Instead of being physically present at a specific location, Neobanking is completely online. Neobanks are financial institutions that offer customers a cheaper alternative to traditional banks. They leverage technology and artificial intelligence to provide personalized services to customers while reducing operating costs.

Neobank entered the financial system with the tag of 'Challenger Bank' as they challenged the complex infrastructure and 'client onboarding' process of traditional banks. These firms do not have any bank license of their own in India, they are dependent on bank partners to provide licensed services. This is because RBI has not yet allowed banks to go 100% digital. RBI is determined to give priority to physical presence of banks and has also talked about the need for some physical presence for digital banking service providers. Examples of top neobanks in India are RazorpayX, Jupiter, Neo, Open etc.



6. Russia delivers more efficient nuclear fuel for Kudankulam

Rosatom State Corporation, Russia has supplied the first batches of more reliable and cost-efficient nuclear fuel, to India for the Kudankulam Nuclear Power Plant (KNPP).

Once the new fuel is used in the next refuelling, the reactor will start operations with an 18 month fuel cycle. It means the reactor, which has to be stopped for every 12 months for removing the spent fuel and inserting the fresh fuel bundles and allied maintenance, will have to be stopped for every 18 months.

About KNPP

Russia is building the KNPP under an Inter-Governmental Agreement (IGA) of 1988 and follow on agreements in 1998 and 2008. The first stage, consisting of power units No. 1 and No. 2, was commissioned in 2013 and 2017, respectively. Power units No. 3, 4 and No. 5, 6 are currently under construction.



7. Nechiphu Tunnel

Border Road Organisation (BRO) has completed the excavation work of the Nechiphu Tunnel, in Arunachal Pradesh on May 2022. BRO is building the tunnel under Project Vartak. The tunnel's foundation stone was laid in October 2020.

About Nechiphu Tunnel

The Nechiphu Tunnel is located at an altitude of 5,700 feet. This is a 500-metre-long tunnel that is "D-shaped" and will have a single tube double lane on the Balipara-Char-duar-Tawang (BCT) Road, West Kameng District, Arunachal Pradesh. The tunnel will be equipped with modern safety facilities and modern lightning and will also accommodate two-way traffic. The tunnel will help to bypass extreme foggy conditions around the Nechiphu Pass, creating hindrance to smooth movement of military convoys and general traffic.

The tunnel will also have raised footpaths on both of its sides for the safety of the pedestrians and will also have ducts for optical fibres, power cables, and utility lines. After completion, Nechiphu tunnel along with the Sela Tunnel will provide an all-weather, safe, and strategic connectivity on the BCT Road thus reducing the eco-sensitive area's carbon footprint.



8. Bronze for India at Asia Cup Hockey Tournament

India defeated Japan by 1-0 to win bronze medal at the eight-nation Asia Cup hockey tournament. The match was played at the GBK Sports Complex, Jakarta. Raj Kumar Pal scored the only goal for India.

South Korea beat Malaysia 2-1 to win the gold medal. South Korea has won this tournament for the fifth time, the most successful team on the list. India and Pakistan have won this tournament thrice. India has won the tournament in 2003, 2007, and 2017.

About Asia Cup Hockey Tournament

The Men's Hockey Asia Cup is an international men's field hockey tournament, organized by the Asian Hockey Federation. The winner of these tournament becomes the champion of Asia and also qualifies for the FIH Hockey World Cup. This tournament was founded in the year 1982.



9. National Air sports Policy 2022 launched

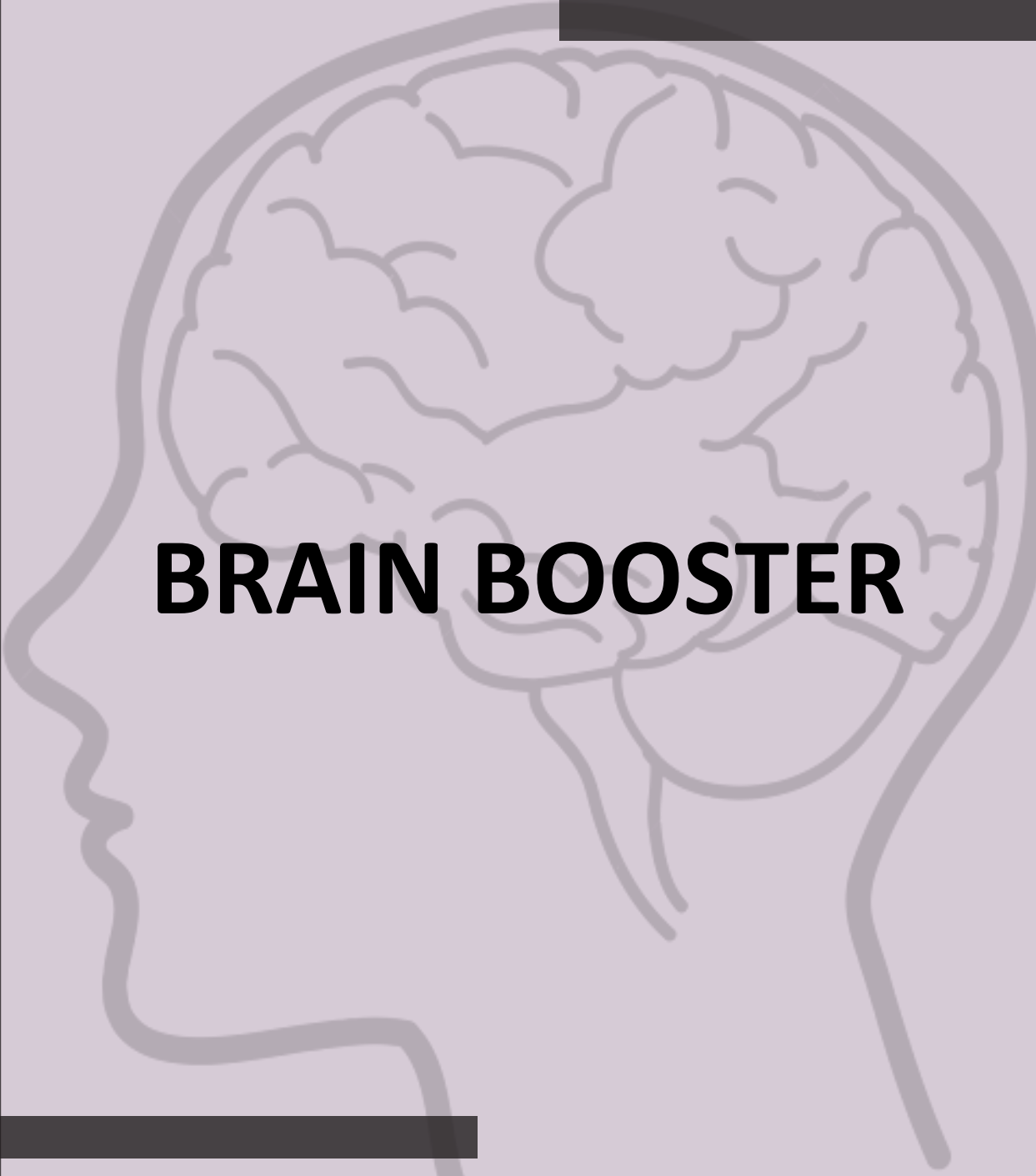
The Minister of Civil Aviation Shri Jyotiraditya M. Scindia launched the National Air Sport policy 2022 (NASP 2022). The vision of NASP 2022 is to make India one of the top sports nations by 2023. The policy ensures to provide safe, affordable, accessible, enjoyable, and sustainable air sports in India.

The Air sports included various sports events which are going to be in air medium. India as a developing country has the potential to become one of the top countries in the world of air sports. India has a huge geographical expansion and favourable weather which can be a way of promoting air sports and India has a massive population, of which youth is a major part. These sports events are going to be in air medium and the coming youth will show greater participation in air sports.



Current Affairs at a Glance

1. Defence Acquisition Council (DAC) has approved the procurement of military equipment platforms from domestic industries, of worth Rs 76,390 Crore.
2. Government has released draft amendments to IT Rules 2021 and sought public comments on some amendments to it.
3. Ex Khaan Quest 2022, a 14 nation peacekeeping exercise, has commenced in Mongolia.
4. As a part of the Azadi Ka Amrit Mahotsav celebrations by the Ministry of Tribal Affairs, Minister of Home Affairs and Cooperation, Mr Amit Shah has inaugurated the National Tribal Research Institute in New Delhi.
5. The Maharashtra State Board for Wildlife (MSBWL) has recently approved 12 new conservation reserves and 3 wildlife sanctuaries, for boosting wildlife conservation and environment protection.
6. On 5th June, 2022, World Environment Day; the Chief Minister of Sikkim, P.S. Golay has declared Blue Duke as "State Butterfly of Sikkim".
7. Goa has launched the "Beach Vigil App", to help travellers & workers in the tourism sector.
8. A successful training launch of an Intermediate Range Ballistic Missile, Agni-4, was carried out from APJ Abdul Kalam Island, Odisha. Test was part of routine user training launches carried out under the aegis of the Strategic Forces Command.
9. Assam celebrated Baikho festival for good harvest and rain. It is celebrated by Rabha tribes of India.
10. IISC scientists have developed miniproteins that may prevent COVID infection.
11. Vice President Shri M. Venkaiah Naidu has launched "India-Qatar Start-Up Bridge" in Qatar to link start-up ecosystem of the two countries.
12. NASA is going to launch "DAVINCI Mission", (Deep Atmosphere Venus Investigation of Noble gases, Chemistry and Imaging Mission)
13. India and Vietnam have signed a Joint Vision Statement on India-Vietnam Defence Partnership towards 2030.
14. World Oceans Day 2022 was observed 8th June under the theme "Revitalization: Collective Action for the Ocean."
15. The World Bank has reduced its real gross domestic product (GDP) growth forecast, for year 2022-23, for India from 8 per cent to 7.5 per cent
16. World Bank cuts India's FY23 GDP forecast to 7.5% amid rising, in the "Global Economic Prospects Report".
17. Sagarmala Young Professional Scheme for engagement of Young Professionals in Ministry of Ports, Shipping and Waterways (MoPSW) launched.
18. Ace Indian Cricketer Mithali Raj announced retirement from all forms of cricket.
19. The Organisation for Economic Cooperation and Development (OECD) has reduced India's growth to 6.9% growth in Financial Year 2023 from 8.1%.
20. Prime Minister Narendra Modi inaugurated the Biotech Start-up Expo – 2022 at Pragati Maidan in New Delhi. It is being organised by Department of Biotechnology and Biotechnology Industry Research Assistance Council (BIRAC).



BRAIN BOOSTER

In June, 2022 Finance Minister Nirmala Sitharaman announced that the National Asset Reconstruction Company (NARCL) and the India Debt Resolution Company (IDRCL) will take over the first set of bad loans from banks and try to resolve them.

1. About the decision

- The decision to setup a bad bank was taken by the Union government during the Budget presented last year in the aftermath of the nationwide lockdowns.

2. Status of bad loans

- In the last few years gross nonperforming assets (GNPA) ratio has declined from a peak of 11.2% in FY18 to 6.9% in Q2FY22.

3. About 'bad bank'

- A bad bank is a financial entity set up to buy nonperforming assets (NPAs) or bad loans, from banks.
- The aim of setting up a bad bank is to help ease the burden on banks by taking bad loans off their balance sheets and get them to lend again to customers without constraints.
- After the purchase of a bad loan from a bank, the bad bank may later try to restructure and sell the NPA to investors who might be interested in purchasing it.

4. Profit Generation

- A bad bank makes a profit in its operations if it manages to sell the loan at a price higher than what it paid to acquire the loan from a commercial bank.

5. Aim of Bad Banks

- The objective of bad banks is to ease the burden on banks, of holding a large pile of stressed assets, and to get them to lend more actively.

6. Pros of setting up a bad bank

- It can help consolidate all bad loans of banks under a single exclusive entity.
- The idea of a bad bank has been tried out in countries such as the U.S., Germany, Japan and others in the past.
- Under the TARP program, the U.S. Treasury bought troubled assets from U.S. banks at the peak of the 2008 crisis and later resold it when market conditions improved.
- An estimated \$11-30 billion nominal profit was earned by the Treasury through its operations.

7. Cons of setting up a bad bank

- A bad bank backed by the government will merely shift bad assets from the hands of public sector banks to the hands of a bad bank, both of which are owned by the government.
- Little reason to believe that a mere transfer of assets will lead to a successful resolution of these bad debts as the set of incentives is essentially the same.
- A bad bank backed by the government may pay too much for stressed assets.
- Government backed bad bank is a bad news for taxpayers who will once again have to foot the bill for bailing out troubled banks.

8. Effect on credit flow in the economy

- By taking bad loans off the books of troubled banks, a bad bank can help free capital of over ₹5 lakh crore.
- This will give banks the freedom to use the freedup capital to extend more loans to their customers.

- It is, however, important not to mistake banks' reserve requirements for their capital position.
- A bad bank could help improve bank lending not by shoring up bank reserves but by improving banks' capital buffers.
- The new bad bank set up by the government can improve banks' capital buffers by freeing up capital. It could help banks feel more confident to start lending again.

Bad Bank



Recently the defence ministry has set a month's deadline for its officials to complete the negotiations for the development of a 110 KN (Kilonewton) engine for India's fifth-generation fighter jet.

The engine is expected to power the Mk2 of the AMCA (Advanced Medium Combat Aircraft)'s second version, with the first powered by the GE414 engine.

1. JET ENGINE

- Jet engines used in aircrafts are machines designed on the basis of jet propulsion theory.
- Jet propulsion theory is application of Newton third law of motion which states that for every force acting on a body there is an opposite and equal reaction'.
- Accordingly, fuel is burned to produce the force (action) of the exhaust gases pushing backward which produces an equal and opposite force (reaction) called thrust that powers the vehicle forward.
- Jet engines are special turbine engines (machines which uses stream of gas, water or steam to turn a wheel and produce power) which draw air from atmosphere using fan to suck cold air into the engine.
- The air is compressed, fuel is added and burned, and the hot gases expand out the rear of the engine, pushing the aircraft forward.

2. RAMJET ENGINE

- Ramjet engine is a kind of jet engine used in rockets which suck oxygen from atmosphere and thus eliminate the need to carry extra oxidizer to propel the rocket.
- In ramjets there is no compressor to compress the oxygen before mixing it with fuel.

3. CRAMJETS

- Scramjets which are also called supersonic combustion Ramjets, are special kind of ramjets which can operate at speed above Mach 5.
- In a scramjet, the incoming air is not slowed down to subsonic speeds and is burned at supersonic speed.

4. ROCKET ENGINE

- The term rocket is also used for the vehicle that uses the rocket engine which carries the payloads into space.
- The jet planes and rockets are built on same principle with only one difference that the rocket carries its supply of oxidizer (ie.

5. Differences Ramjet and Scramjet engines:

- Ramjets uses subsonic combustion of fuel in a stream of air compressed by forward speed of the aircraft.
- Ramjets have no moving parts.
- Supersonic combustion Ramjet engines in which the airflow through the whole engine remains supersonic. Full scale testing of Scramjets needs flight test speed of above Mach 8.

KINDS OF ENGINES

- The supersonic speed of the rocket is used to 'ram' the air in the combustion tank.
- At supersonic speeds air enters the intake where a diffuser nozzle causes the air to slow down to around Mach 0.2 through a series of shock waves.
- This sudden slowing creates the pressure needed to operate the engine.
- The other advantages of ramjet include:
 - (a) There is no need of turbine as there is no compressor.

- (b) It is lighter in weight than turbojet.
- (c) It can operate at higher temperatures and thus are more efficient.
- The disadvantage of ramjet is that it can operate only at very high speed (i.e. at supersonic speed).

1. Why in News:

Recently, a female petitioner wanted a surrogate for her second child. But under the provisions of the Surrogacy Act, she was denied a chance at commissioning surrogacy.

2. About Surrogacy

'Surrogacy' is a practice where a woman undertakes to give birth to a child for another couple and agrees to hand over the child to them after birth.

3. About Surrogacy Act

- As per the Surrogacy Act which was implemented from January this year, a married couple can opt for surrogacy only on medical grounds.
- The law defines a couple as a married Indian "man and woman".
- It also prescribes an age criteria with the woman being in the age group of 23 to 50 years and the man between 26 to 55 years.
- It allows 'altruistic surrogacy' wherein only the medical expenses and insurance coverage is provided by the couple to the surrogate mother during pregnancy.
- She should have been married, with a child of her own, and must be between 25 and 35 years, but can be a surrogate mother only once.

4. Who can become a surrogate mother?

- Only a close relative of the couple can be a surrogate mother, one who is able to provide a medical fitness certificate.
- She should have been married, with a child of her own, and must be between 25 and 35 years, but can be a surrogate mother only once.

5. Issues regarding Surrogacy Act-

- Petitioners in the Delhi High Court questioned why marital status, age, or gender were the criteria for being allowed to commission or not commission surrogacy in India.
- Though the law allows single women to resort to surrogacy, she has to either be a widow or a divorcee. Single men are not eligible.
- Only a close relative of the couple can be a surrogate mother. She should have been married, with a child of her own. She can only be a surrogate mother once.
- It does not allow single men, or gay couples to go in for surrogacy.
- Additionally, the couple should not have a child of their own.
- Those involved in organ transplantation have pointed out how despite a similar stringent law like the Transplantation of Human Organs Act, organ commerce still continues to thrive in the country.

The Surrogacy Act

6. Need for a Surrogacy Act in India

- India has emerged as a hub for infertility treatment, attracting people from the world over with its state of the art technology and competitive prices to treat infertility.
- This was misused by unscrupulous middle men & foreign tourists, which resulted in exploitation of vulnerable & needy Indian women.

7. Way Forward

- The strict criteria prescribed by the surrogacy act can deprive genuine surrogate candidates from having a child.
- Balance is needed in the provisions of the act so that Indian women are not exploited on account of commercial surrogacy & also genuine surrogacy candidates receive the benefits of the act.

Recently a vessel spotted in a Chinese shipyard in rare, recent satellite images could be a new or upgraded class of nuclear-powered attack submarine. Diplomats and analysts have been watching closely after a Pentagon report in November said the Chinese navy was likely in the next few years to build a new attack submarine with vertical launch tubes for cruise missiles.

1. India's submarine strength

- Currently, India has 15 conventional diesel-electric submarines, classified as SSKs, and one nuclear ballistic submarine, classified as SSBN.
- Of the SSKs,
 - a. 4 are Shishumar Class.
 - b. 8 are Kilo Class or Sindhughosh.
 - c. 3 are Kalvari Class Scorpene submarines.
- The SSBN, INS Arihant, is a nuclear-powered ballistic missile submarine, built indigenously.

2. History of India's submarine acquisition

- India got its first submarine, INS Kalvari of the Foxtrot Class, from the USSR in December 1967.
- In 1981, India signed a contract to buy 2 Type 209 (Shishumar Class) submarines from West Germany, while two other were to be assembled at Mazgaon Dock.
- Russia offered India its Kilo Class submarines in 1986 which formed the Kilo Class submarines for

4. Current projects to manufacture submarines

- Of the six being built, P-75 has delivered three Kalvari Class Scorpene submarines so far.
- P-75I will be India's first under the Strategic Partnership Model, which came up in 2015.
- The government will give the contract to an Indian Strategic Partner (SP), which will then partner with a foreign OEM.
- The two selected SPs are MDL and

Larsen and Toubro.

- The 5 selected OEMs are France's Naval Group, Germany's ThyssenKrupp Marine Systems, Russia's ROE, South Korea's Daewoo Shipbuilding and Marine Engineering, and Spain's Navantia.

5. China's capability and India's worry

- India needs more submarines for our own maritime security.
- Chinese are going to be positioning a lot more ships and submarines in the Indian Ocean in the coming years.
- China is giving Pakistan 8 submarines and 4 destroyers, which can be used as proxy by China.
- According to the report by Pentagon, Chinese Navy will "likely to maintain between 65 and 70 submarines through the 2020s, replacing older units with more capable units on a near one-to-one basis".

6. Why are nuclear submarines so coveted?

- SSNs have infinite capacity to stay dived.
- They are propelled by a nuclear-powered engine.
- SSNs are also able to move faster underwater than conventional submarines.
- All this allows a navy to deploy them at farther distances, and quicker.

7. India's nuclear submarines

- India is among six nations that have SSNs, alongside the US, the UK, Russia, France and China.
- India got its first SSN in 1987 from the Soviet Navy, which it rechristened INS Chakra, which was decommissioned in 1991.
- In 2012, India got another Russian SSN on a ten-year lease, called INS Chakra 2, which has since been returned to Russia.



Submarine

3. Delays in modernisation

- Due to policy-paralysis, 30-year plan (2000-30) for indigenous submarine construction, approved by the Cabinet Committee on Security in 1999, was signed in 2005.
- It envisaged two production lines of six submarines each, built in India in partnership with a foreign Original Equipment Manufacturer (OEM). The projects were called P-75 and P-75I.
- P-75, has been delayed and P-75I is yet to be signed.

U.S. President Joe Biden formally introduced the Indo-Pacific Economic Framework, or IPEF, during his Asia tour.

It comes five years after the U.S. unilaterally withdrew from the Trans-Pacific Partnership. With the U.S. withdrawal, the remaining countries went on to launch the CPTPP, or Comprehensive and Progressive Trans-Pacific Partnership — one of the world's biggest multilateral trade deals.

1. About IPEF

- It is seen as a means to counter China in the region.
- It is a U.S.-led framework for participating countries to solidify their relationships and engage in crucial economic and trade matters that concern the region.
- It is not a free trade agreement. No market access or tariff reductions have been outlined.
- Neither is it a security pact.
- The framework is open to new participants.
- Members : Australia, India, Japan, Brunei, Indonesia, Malaysia, the Philippines, Singapore, Thailand, Vietnam, South Korea, New Zealand & USA.

2. Why the Indo-Pacific

- According to Biden, "The future of the 21st century economy is going to be largely written in the Indo-Pacific."
- The combined GDP of the participating countries represent 40% of the global GDP.

3. Four pillars of the IPEF

The four main tenets of the framework are:

- Connected economy: higher standards and rules for digital trade, such as cross-border data flows.
- Resilient economy: resilient supply chains that will withstand unexpected disruptions like the pandemic.
- Clean economy: targeting green energy commitments and projects.
- Fair economy: implementing fair trade, including rules targeting corruption and effective taxation.

4. Where is China in this?

- The IPEF serves as a middle ground for USA's plans to be more in control of economic flows in the Indo-Pacific especially with China at the center of the region's supply chains.
- According to former Indian Trade Secretary Ajay Dua, the framework is an economic alliance to counter the emergence of China in this region.

5. Difference from previous trade deals

- The Trans-Pacific Partnership, an ambitious major trade pact involving the Indo-Pacific countries, was part of President Barack Obama's strategic pivot to Asia.
- Trump pulled the U.S. out of the trade pact in 2017.
- The TPP evolved into the Comprehensive and Progressive Agreement for Trans-Pacific Partnership, now one of the biggest trade blocs in the world which has attracted new applicants, including China.
- But it is unlike the TPP or CPTPP.
- The Indo-Pacific Economic Framework remains "quite far from the ambition displayed at the time of the launch of CPTPP.
- IPEF is a kind of 'soft law' framework with a great degree of flexibility which allows members to agree on only some rules/pillars.



IPEF

- About 60% of the world's population reside in the Indo-Pacific, and the region is expected to be the biggest contributor to global growth over the next three decades.
- The U.S. wants to restore its economic leadership in the region and is presenting Indo-Pacific countries an alternative to China's approach.
- Framework is a means for the U.S. to strengthen ties with allies and partners for the purpose of increasing shared prosperity.

Starting on June 12, to mark 21 years of the maiden supersonic launch of unbeatable BrahMos, the 'Silver Jubilee Year' celebrations would culminate on February 12, 2023, on the 'BrahMos Raising Day'.

1. About BrahMos Aerospace

- BrahMos Aerospace was formed as a joint venture between DRDO, India and NPO Mashinostroyeniya, Russia.
- The name BrahMos is a portmanteau formed from the names of two rivers, the Brahmaputra of India and the Moskva of Russia.

2. Range

- The range of the BrahMos was originally limited to 290 kms as per obligations of the Missile Technology Control Regime (MTCR) of which Russia was a signatory.
- Following India's entry into the club in June 2016, plans were announced to extend the range initially to 450 kms and subsequently to 600 kms.
- BrahMos with extended range upto 450 kms has been tested several times since.

3. Special Features of BrahMos

- Stealth Technology
- Advanced guidance system
- High Target Accuracy (irrespective of weather conditions)
- Constant supersonic speed
- Operates on 'Fire and Forget' Principle
- BrahMos can be launched from land, aircraft, ships, and even submarines.
- One of the heaviest missiles, weighing up to 2.5 tonnes

4. Platforms

I. Ship-based Weapon System

- Its naval configuration, the weapon has been designed for launch in either vertical or inclined mode from a moving or static maritime platform from stand-off ranges against sea or land targets.
- BrahMos has been deployed on Indian Navy's frontline surface combat platforms, including Destroyers and Frigates as the "prime strike weapon".

II. Land Based Weapon System

- The Land Based Weapon System consist of 4 to 6 Mobile Autonomous Launchers.
- The system is equipped with Inertial Navigation System and Global Positioning System.

III. Air Launched weapon System

- The air-launched cruise missile (ALCM) has precision attack capability against sea and land targets.
- BrahMos ALCM is the heaviest and most powerful weapon to arm the Su-30MKI.

IV. Submarine Launch Version

- BrahMos missile is capable of being launched from submarine from a depth of 40-50 meters.

5. About Missile Technology Control Regime (MTCR)

- The Missile Technology Control Regime (MTCR) is a multilateral export control regime.
- It was established in April 1987 by G-7 countries – USA, UK, France, Germany, Canada, Italy, and Japan.
- It is an informal and voluntary partnership among 35 countries to prevent the proliferation of missile and unmanned aerial vehicle technology capable of carrying greater than 500 kg payload for more than 300 km.
- The members are thus prohibited from supplying such missiles and UAV systems that are controlled by the MTCR to non-members.
- The decisions are taken by consensus of all the members.
- It is not a legally-binding treaty. Hence, no punitive measures could be taken against non-compliance to the guidelines of the regime.
- India was inducted into the Missile Technology Control Regime in 2016 as the 35th member.

**21 glorious years of
'BrahMos Aerospace'**



The Centre has started distribution of fortified rice through ration shops from April 1 in some 90-odd districts out of 291 targeted for the entire year under phase II of PM-POSHAN Abhiyan for which it has procured 90 lakh tonnes (lt) of the grain.

1. About rice fortification

Rice fortification is the process of increasing essential micronutrients in rice, so as to improve the nutritional quality of the food supply and provide a public health benefit with minimal risk to health.

2. Why fortify rice?

- India is a leading rice producing country, with 22 percent of the total global rice production and 65% of India's population consumes rice on a daily basis- the per capita rice consumption in India is 6.8 kilogram per month.
- Rice is therefore a large source of calories and core component of agriculture and nutrition in most of India though low in micronutrients.
- Milling of rice removes the fat and micronutrient rich bran layers to produce the commonly consumed starch white rice while polishing further removes 75-90% of vit. B1, vit. B6, vit. E and Niacin.
- Fortifying rice provides an opportunity to add back the lost micronutrients but to also add others such as iron, zinc, folic acid, vit. B12 and vit. A.

3. Efficacy and Effectiveness Studies on Rice Fortification

Studies conducted in India

- Rice Fortification Pilot Study in Gadchiroli, Maharashtra, 2018- 2020.
- Rice Fortification Study in School in Gujarat, 2018- 2019.
- Improving the Iron and Vitamin A status in Indian Schoolchildren, 2014
- Multiple Micronutrient Fortified Rice in School in Bangalore, Karnataka, 2010.

4. Standards

Under the Ministry's guidelines, 10 gm of FRK must be blended with 1 Kg of regular rice.

According to FSSAI norms, 1 Kg of fortified rice shall contain,

- Iron (28-42.5 mg)
- Folic Acid (75-125 microgram)
- Vitamin B-12 (0.75-1.25 microgram)

Rice may also be fortified with following-

- Zinc (10-15 mg)

- Vitamin A(500-750 microgram RE)
- Vitamin B-1(1-1.5 mg)
- Vitamin B-2 (1.25-1.75 mg)
- Vitamin B-3 (12.5-20 mg)
- Vitamin B-6 (1.5-2.5 mg)

5. Technologies available for fortification of rice

There are three main technologies available to produce fortified rice.

- Coating: In the coating method, the nutrient (vitamin or mineral mix) is combined with ingredients such as waxes and gums. It is then sprayed on the surface of rice grains in several layers. This is then blended with polished rice at about a ratio of 1:100.
- Dusting: In dusting, micronutrients in the form of one particles are blended with bulk rice. This method makes use of the electrostatic forces between the rice's surface and the micronutrients.
- Extrusion

6. Rice fortification technology available in India

- In India, rice is fortified using extrusion technology.
- In this technology, milled rice is pulverized and mixed with a premix containing vitamins and minerals.
- Fortified rice kernels (FRK) are produced from this mixture using an extruder machine.
- FRK is added to traditional rice in ratio ranging from 1:50 to 1: 200 resulting in fortified rice nearly identical to traditional rice in aroma, taste, and texture.
- It is then distributed for regular consumption.



Fortified Rice

- Fortified Rice in Franciscan School, Bangalore, Karnataka, 2005.

International studies

- Fortified Rice in Public Child Day Care Centers, Brazil, 2013.
- Fortified Rice in Public Schools in Brazil, 2013.
- Fortified Rice in Child Day Care Centers, Brazil, 2012.
- Clinical impact study of micronutrients fortified rice for teen girls, Indonesia, 2016

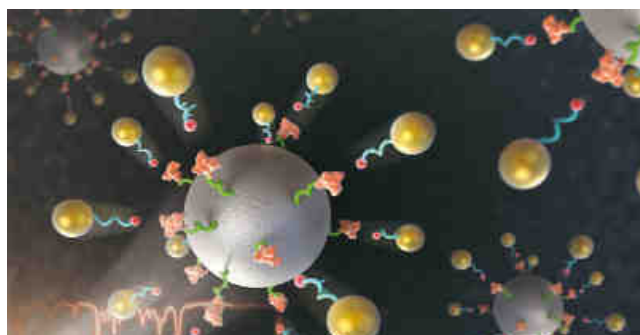
Mains Special

Nanotechnology

Nanotechnology deals with understanding and control of matter at dimension of roughly 100nanometer (1nm = 10^{-9} m) and below. It has cross sectoral application and inter disciplinary orientation. At this scale, the physical, chemical and biological properties of materials differ from the properties of individual atoms and molecules or bulk matter, which enable novel applications.

Nano-Science: Nano-Science is the study of phenomena & manipulation of materials at atomic, molecular and macro molecular scales, where properties differ significantly from those at a larger scale.

Nanometer scale: Nanometer scale is conventionally defined as 1 to 100 nm. One nanometer is one billionth of a meter (10^{-9} m). A single human hair is about 8000 nm wide; a red blood cell is approximately 700 nm wide, a DNA molecule 2 to 2.5 nm and water molecule almost 0.3 nm.

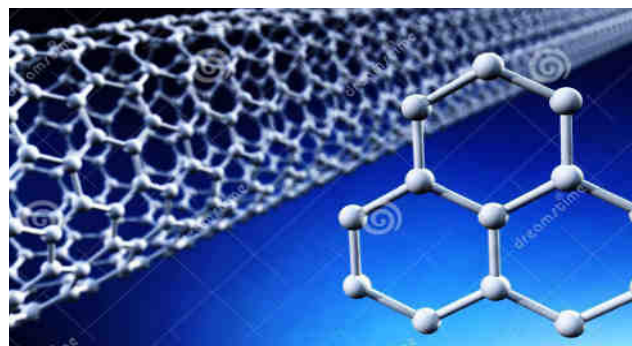


NANOMATERIALS

Nanomaterials are defined as the set of substances where at least one dimension is less than approximately 100 nanometers. Nanomaterials are of interest because at this scale unique optical, magnetic electrical and other properties emerge. These emergent properties have the potential for great impacts in different fields. Some nanomaterial occurs naturally, but scientists are especially interested in Engineered Nanoparticles (EN)

which are designed for many commercial products and process. The main properties of nanomaterials are as follows:

1. Nano materials have, relatively, a larger surface than the same mass of material produced in a larger form. This makes materials more chemically reactive, and affect their strength or electrical properties.
2. Below 50 nanometer, the law of classical physics give way to quantum effects, provoking optical, electrical and magnetic behaviours different from those of the same materials at large scale. These effects can give materials very useful physical properties such as exceptional electrical conductance or resistance, or a high capacity for storing or transferring heat and can even modify biological properties. These properties, however can be very difficult to control. For example, if nanoparticle touch each other, they can fuse, losing both the shape and those special properties.



GENERATIONS OF NANO TECHNOLOGY

GENERATION 1: PASSIVE NANOSTRUCTURE

The first generation of nanotechnology is the one that we are currently in and it's really getting into the swing of things. This is the generation of "passive" nanostructures. In other words, it's the creation of materials where we control their structure on a molecular level, but the actual product doesn't "do" anything. It has materi-

al properties that are useful or even revolutionary, but that's as far as it goes.

GENERATION 2: ACTIVE NANOSTRUCTURE

The second generation of nanotechnology is one into which we are now moving. These nanostructures aren't just passive ones with specific properties, but they make changes to other things. They are active in some way and make changes to other objects or materials.

This generation also includes nanoscale devices such as the MEMS system in our smartphone. These are microscopic accelerometers and gyroscopes that allow our phone to know which way it's being held and to track its own motion. The next generation of transistors will also be three-dimensional nanostructures and quite likely enable a new generation of computer performance.

GENERATION 3: SYSTEMS OF NANO SYSTEMS

Third generation nanotech is where we see various nanomachines working together. Nano factories assembling molecules or complex large-scale machines and materials are an example of a third-generation nanotech application.

GENERATION 4: MOLECULAR NANOSYSTEM

Fourth-generation is the perfection of this technology. At this level we have complete control of the actual molecules that make up our nanomachines. In other words, while a third generation nanomachine may have different components made from specific molecules, a fourth-generation nanomachine is made from different molecules with specific structures; each molecule has a specific structure and function.

TYPES OF NANOMATERIALS

NATURAL NANOMATERIALS

Natural Nanomaterials are those materials that belong to the natural world (animal and mineral), without human modification or processing, and that have remarkable properties because of their inherent nanostructure. The chemical identity and properties of a substance depend upon its molecular structure. The nano-structure of a biological material is due to its supramolecular organisation the arrangement of tens to hundreds of molecules into shapes and forms in the nanoscale range. The interaction of light, water and other materials with these nanostructures gives the natural materials some remarkable properties which can be appreciated at the macro-scale.

BIOMIMETIC NANOMATERIALS

Biomimetics, also known as biomimies (application of biological principles to the study and design of engineering systems), or biomimicry, is the use and implementation of concepts and principles from nature for creating new materials, devices and systems. This adaptation of methods and systems found in nature into synthetic constructs is desirable because evolutionary pressure typically forces natural systems to become highly optimized and efficient, Nature provides a database of several solutions that already work and thus serve as models of inspiration for synthetic paradigms, Nanostructures in natural materials often play a crucial role, inspiring scientists to mimic them starting from a molecular level (Molecular Biomimetics). Such materials are called biomimetic nanomaterials. Some examples of biomimetic nano materials are as follows:

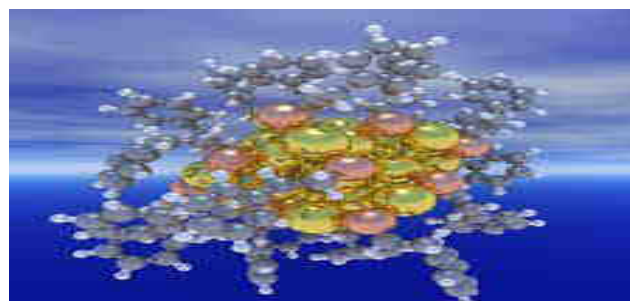
1. Gecko-Inspired Adhesive (Bio-Rubber)
2. Self Healing Adhesives
3. Biomimetic Membranes, Capsules and Bio-Reactors
4. Biomimetic Energy Nanomaterials

ENGINEERED NANOMATERIALS

Engineered Nanoparticles intentionally produced and designed with very specific properties related to shape, size, surface properties and chemistry. These properties are reflected in aerosols, colloids, or powders. Often, the behaviour of nanomaterials may depend more on surface area than particles composition itself. Relative-surface area is one of the principle factors that enhance its reactivity, strength and electrical properties.

METAL NANOPARTICLES

Metal nanoparticles are clear examples of how the properties of matter can change at nano meter scale, for instance, Metal Gold is notably yellow in colour and as the noblest, very stable, however, if gold shrunk to a nanoparticle, it changes colour. Moreover, gold nanoparticles become very reactive and can be used as new catalyst.

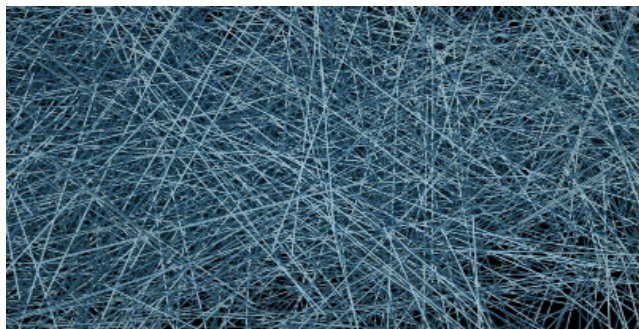


Uses

- Metal nanoparticles are used as reinforcement in alloys for application in light weight construction, within the aerospace and the automotive sector.
- Particles of Iron carbide are also precipitate in steel to make it harder.
- Zero valent iron (Fe0) nanoparticles are under investigation for the remediation of contaminated ground water and soil.
- Silver nanoparticles have strong antibacterial capacity. They are used in numerous products to prevent or reduce the adherence of bacteria to surface.

NANOFIBRES

Nanostructured fibrous materials, or nanofibres, are an important class of nanomaterials, now readily available due to recent development in electro spinning and related fabrication technologies. Nanofibres are highly porous. It is possible to increase the mechanical stability of nanofibres by annealing.

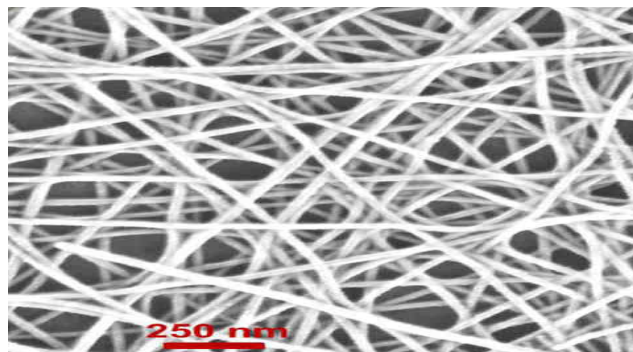


Uses

- Researchers are using nanofibres to capture individual cancer cells circulating in blood stream. They use nanofibres coated with antibodies that bind with cancer cells, trapping the cancer cell for analysis.
- Nanofibres can stimulate the production of cartilage in damaged joints.
- Flame retardant formed by coating the foam used in furniture with carbon nanofibres.

NANOWIRES

Nanowires are ultrafine wires or linear array of dots formed by self assembly. They can be made from a wide range of materials. Semiconductor nanowires made of silicon, gallium nitride and Indium phosphide have demonstrated remarkable optical, electronic and magnetic characteristics.

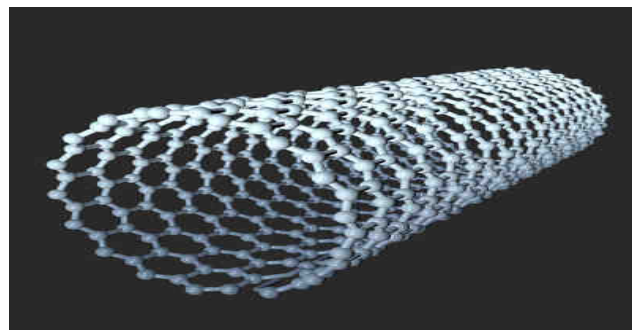


Uses

- Researchers developed a solar cell using graphene coated with zinc oxide nanowires. They believe that this method will allow the production of low cost flexible solar cell at high enough efficiency.
- Silver chloride nanowires can be used as photo catalyst to decompose organic molecules in polluted water.
- Use of an electrified filter composed of silver nanowires carbon nanotubes and cotton to kill bacteria in water.
- Use of nanowires mat to absorb oil spill.

CARBON NANOTUBES

Carbon Nanotubes are long, thin cylinders of carbon, discovered in 1991 by Sumio Iijima. They can be thought of as a sheet of graphite (a hexagonal lattice of carbon) rolled into a cylinder. Nanotubes have a very broad range of electronic, thermal and structural properties that change depending on the different kinds of nanotubes.



PROPERTIES

- Nanotubes are really strong having tensile strength approximately 100 times greater than that of steel of same diameter.
- Nanotubes are strong but are also elastic.
- Carbon nanotubes also conduct heat really well (they have a high thermal conductivity).
- Carbon nanotubes conduct electricity better than metals.

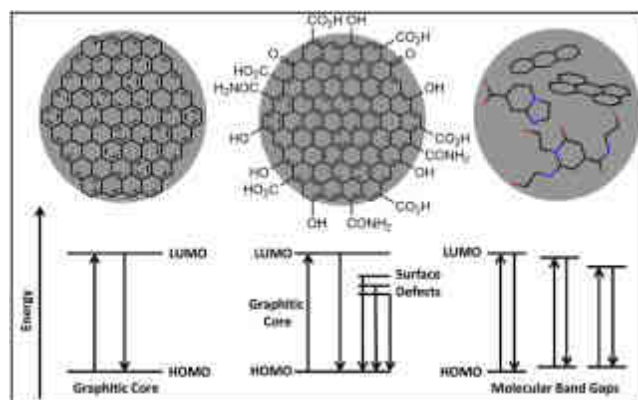
- They are probably the best electron field-emitter known, largely due to their high length-to diameter ratio.

Uses

- A nanotube tipped atomic force microscope can trace a strand of DNA and identify chemical markers that reveal which of several possible variants of a gene present in the stand. It is only method yet invented for imaging the chemistry of surface, but it not yet used widely.
- Nanotweezer-Two nanotubes, attached to electrodes on a glass rod can be opened and closed by changing voltage, Such tweezers have been used to pick up and move objects that are 500 nano meter in size.
- Semiconducting nanotubes change their electrical resistance dramatically when exposed to alkalis, halogens and other gases at room temperature, raising hopes for better chemical sensors.
- Attached to the tip of a scanning probe microscope, nanotubes can boost the instrument's lateral resolution by a factor of 10 or more allowing clear view of protein and other large molecules.

QUANTUM DOTS

A quantum dot gets its name because it's a tiny speck of matter so small that it is effectively concentrated into a single point (in other words, it's zero-dimensional). As a result, the particles inside it that carry electricity are trapped and have well-defined energy levels according to the laws of quantum theory, a bit like individual atoms. Quantum dots are crystals a few nanometers wide, so they're typically a few dozen atoms across and contain anything from perhaps a hundred to a few thousand atoms. They're made from a semiconductor such as silicon (a material that's neither really a conductor nor an insulator, but can be chemically treated so it behaves like either), And although they're crystals, they behave more like individual atoms hence the nickname artificial atoms.



FUNCTIONS OF QUANTUM DOTS

Quantum dots can be precisely controlled to do all kinds of useful things. According to physics when energy is given to an atom, it gets excited. This can boost an electron inside it to a higher energy level. When the electron returns to a lower level, the atom emits a photon of light with the same energy that the atom originally absorbed. The colour (wavelength and frequency) of light an atom emits depends on what the atom is, iron looks green when you excite its atoms, while sodium looks yellow.

Uses

- The wide range of colour that can be produced by quantum dots also means they have great potential in security. They could be hidden in bank notes or credit cards, producing a unique visible image when exposed to ultraviolet light.
- It is possible to make Light Emitting Diodes (LEDs) from quantum dots which could produce white light e.g. for building or cars. By controlling the amount of blue in the emission control the 'flavour' or 'tone of white light can be tuned.
- Quantum dots are also possible materials for making ultra fast, all optical switches and logic gates that work faster than 15 terabits a second.

APPLICATIONS OF NANOTECHNOLOGY

MEDICINE & HEALTH CARE

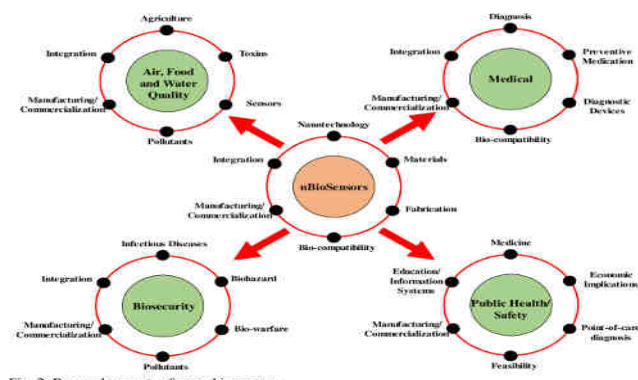
Nanotechnology in medicine involves applications of nanoparticles currently under development, as well as longer ranges research that involves the use of manufactured nanorobots to make repairs at cellular level.

Diagnosis

Diagnosis of suspected disease is one of the most critical steps in health care and medicine. Diagnoses are wanted quickly, but must also be reliable, specific and accurate and with minimum risk of 'false positive'. Nanomedicine has the potential to greatly improve the entire diagnosis process.

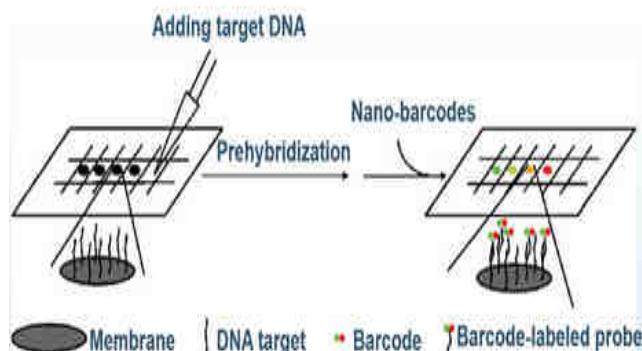
Nano-Biosensor

When the sensing is based on biomolecular recognition, it is called a biosensor. There are various types of biosensors such as those based on antibodies/antigens, nucleic acid and enzymes. In such applications, some biological molecular species are attached to the surface of the nanoparticles to recognize the target of interest through a lock and key mechanism. Carbon nanotubes and nanowires are also employed for sensing.



Nanobarcodes

The unique properties, such as relationship between particle size and colour, can also be used to create multiplexed detection systems in the form of nanobarcodes, for example using the quantum dots to create different colour based codes. A bio-barcode is used to detect small levels of the cancer marker Prostate Specific Antigen (PSA) in serum.



Diagnostic Imaging

Techniques such as X-ray, computer tomography (CT), ultrasound, Magnetic Resonance Imaging (MRI) and Nuclear Medicine are well established imaging techniques used in both medicine and biomedical research.

In X-ray imaging, to enhance the signal, an agent must deliver a detectable number of heavy atoms into targeted tissues without toxic effect.

Hearing and Vision

Nano and related micro technologies are being used to develop a new generation of smaller and potentially more powerful devices to restore lost vision and hearing. An array at the tip of the device uses up to 128 electrodes, five times higher than current devices to stimulate a fuller range of sounds. The implant is connected to a small micro processor and micro phone in a wearable device that clip behind the ear. This captures and

translates sounds into electric pulses transmitted by wire through a tiny hole made in middle ear.

Environment

Nanotechnologies offer the ability to control matter at the nanoscale level to create materials with specific properties that can serve specific functions. This is particularly important in environmental issues where pollution often arises from the presence of a specific contaminant with a mixture of materials in solid, liquid or gas form. The small size of nanomaterials, together with their high surface to volume ratio, can lead to a very sensitive detection. The properties allow the development of highly miniaturized, accurate and sensitive pollution monitoring devices (nano-sensors).

Iron Nanoparticles

These nanoparticles 10 to 1000 times are more reactive than commonly used iron powder. They have larger surface area available for reacting with the organic contaminant and their small size (1-100nm) allows them to be much more mobile, so they can be transported effectively by the flow of ground water. The nanoparticles are not changed by soil acidity, temperature or nutrient levels, so they can remain in suspension maintaining their properties for extended periods of time to establish an in-situ treatment zone. Results has shown that nanoscale iron particles are very effective for the complete transformation and detoxification of wide variety of common environmental contaminants, such as chlorinated organic solvents, organochlorine pesticides and PCBs.

Oil Spills in Seawater

The problem of oil spills in seawater is of great concern and has detrimental environmental consequences. Currently there are numerous bioremediation strategies that use microbial cultures enzyme additives or nutrient additives to clean up oil spills. Another method gaining acceptance is the use of aerogels (nanomaterial) modified with hydrophobic molecules to enhance the interaction with oil.

Nanocatalysis

A catalyst is a substance that increases the rate of chemical reaction without being consumed or chemically altered. One of the most important properties of catalyst is 'active surface where reaction takes place. This property can be controlled by using nanotechnology. In the environment field nanocatalysis is being investigated, for example, in the desulphurization of fuels, with the aim of developing clean fuels containing very low sulphur con-

tent. Nanoscale catalysts also showing promising results in improving air quality and for treating particularly challenging contaminants in water that must be reduced at a very low level.

Environment Sensing

Nanotechnologies can improve current sensing technology in various ways. By using nanomaterials with specific chemical and biological properties, the sensor selectivity can be improved, thus making it possible to isolate a specific chemical or biological compound with little interference.

SOLAR ENERGY

Solar energy holds great potential. It is available only during day time and its distribution is uneven. The main problem associated with this form is not its supply, but the development of devices that will allow its efficient and cost effective conversion into electric current. Second biggest problem is its storage and its transportation. Making solar energy a viable alternative to fossil fuels therefore requires a series of advances that will most likely be possible through fundamental research into solar energy conversion, storage and transport. Many of these advances are likely to be enabled by nanotechnologies.

Solar Heating

Since the sun is a variable source that produces a diffuse energy, controlling the incident solar radiation is difficult because of its changing position. Nanotechnologies can be used to fabricate complex nano-structured mirrors and lenses to optimize solar thermal collection. Furthermore, aerogels with nanopores are used transparent and thermally isolating materials for the cover material of solar collectors.

Thin-Layer Solar Cells

In contrast to the silicon water technology, thin layer solar cells provide potential for cost reductions in the manufacturing of solar cells due to materials savings, low-temperature process, integrated cells insulation and high automation level in series production.

Quantum Dots for Solar Cell

Quantum dots are nanoscale clusters of semiconductor compounds with extraordinary optoelectronic properties, which are modifiable due to quantum physical effects in dependence of the cluster size. Application in solar cells are interesting, since on the one hand, several

electron hole pairs per photon can be produced by quantum dots, on the other hand, the absorption band can be optimally adjusted to the wave length of the irradiating light.

Nano structured Antireflection Layer

A low cost method of increasing energy yield of solar cells and solar collectors is the application of antireflection layers. Marketable developments are antireflection layers for flat glass based on nanoporous coating of silicon dioxide.

INFORMATION AND COMMUNICATION TECHNOLOGY

Semiconductors

Nano amplification and chip embedding is used for building semiconductor devices which can even maintain and neutralize the electric flow. Integrated nanocircuits are used in the silicon chips to reduce the size of processors. Appropriate promising success in the medium term includes e.g. Rapid Single- Flux Quantum (RSFQ) logic or single electron transistors.

Display & Audio Devices

Picture quality and resolution of display devices has improved with the use of nanotechnology. Nanopixelation of these devices make the picture feel real. Similarly frequency modulation in audio devices has been digitized to billion of the signals.

Data Processing and Transmission

In the field of data processing and transmission, development of electronic, optical and optoelectronic component are expected to lead lower cost or more precise processes in the field of manufacturing technology.

- Development of nanoscale logical and storage components are made for the currently dominant CMOS (Complementary Metal-Oxide-Semiconductor) technology using quantum dots and carbon nanotubes.
- Photonic crystals have potential for use in purely optical circuits as a basis for future information processing based solely on light (photonics).
- In molecular electronics, nanotechnology can be used to assemble electronic components with new characteristics at atomic level, with advantages of including potentially high packaging density.
- Smaller, faster and better components based on quantum mechanical effects, new architectures and new biochemical computing concept called DNA computing are possible with nanotechnology.

AGRICULTURE

Specifically in agriculture, technical innovation is of importance with regard to addressing global challenges such as population growth, climate change and the limited availability of important plant nutrients such as phosphorus and potassium. Some of the agricultural applications are as follows.

Diagnostic

Nanomaterials and nanostructures (e.g. electrochemically active carbon nanotubes, nanofibres and fullerenes) that are highly sensitive biochemical sensor used to closely monitor environmental conditions, plant health and growth. Liposome based nanobiosensor is used in agriculture for detection of pesticides.

Fertilizers

Nanocapsules, nanoparticles and viral capsids are used for the enhancement of nutrients absorption by plants and the delivery of nutrients to specific sites in plant.

Soil Improvement

Nanomaterials can be used to improve soil by increasing the water retention capacity of soil. Nanomaterial such as zeolites and nanoclays used for water or liquid agrochemicals retention in the soil for their slow release to the plants.

Water Purification

Nanomaterials such as nanoclays are useful in filtering and binding to a variety of toxic substance including pesticides which should be removed from water for better plant growth. Filters coated with TiO₂ (Titanium Dioxide) nanoparticles are used for the photo catalytic degradation of agrochemicals in contaminated waters.

FOOD INDUSTRY

Food Processing

Food processing is the conversion of raw ingredients into food and other forms by making it marketable with long shelf life. Processing includes toxins removal, prevention from pathogen, preservation, improving the consistency of food for better marketing and distribution. All these are made more effective by application of nanotechnology now a day.

- Nano capsules delivery systems plays an important role in processing sector and functional properties are maintained by encapsulating simple solutions, colloids, emulsion, biopolymers and other into foods.

- Nanoparticles have better properties of encapsulation and release efficiency than traditional encapsulation system Functional food can be encapsulated in these nanoparticles and released in response to specific environmental triggers.

Nutritional Supplement

Nanotechnology in food supplement is very effective than common supplements because they react more effectively with human cells due to their size.

- Nanosized powders are used for increasing absorption of nutrients.
- Nanocochleates are considered as effective tools for nutrients delivery to cell without affecting colour and taste of food products.
- Vitamin sprays disperse nanodroplets are used for better absorption of nutrients.
- Cellulose nanocrystals composite can be used as drug carrier.

TEXTILE

Nanotechnology has real commercial potential in textile industry. This is mainly due to the fact that conventional methods used to impart different properties to fabrics often do not lead to permanent effect, and will lose their functions after laundering and wearing. Nanotechnology can provide high durability for fabrics, because nanoparticles have large surface area to volume ratio and high surface energy, thus presenting better affinity for fabrics and leading to increasing in durability of the functions. In addition, a coating of nano-particles on fabrics will not affect their breathability or hand feel. The properties imparted to textiles using nanotechnology include:

Water Repellence

Water repellent property of a fabric created by nano whiskers, which are hydrocarbons and 1/1000 of the size of typical cotton fibre, when added to the fabric to create a peach fuzz effect without lowering the strength of the cotton. The space between the whiskers on the fabric are smaller than the typical drop of water, but still larger than water molecule water thus remains at the top of whiskers and above the surface of fabric.

UV-Protection

Inorganic UV blockers are more preferred than organic UV blockers as they are non-toxic and chemically stable under high temperature and UV, Inorganic UV-blockers are certain semiconductors such as TiO₂, ZnO, SiO₂, and

A120, TiO₂, and ZnO are commonly used. It is determined that nano-sized titanium dioxide (TiO₂) and Zinc oxide (ZnO) are more efficient at absorbing and scattering UV radiation than conventional size. This is due to the fact that nanoparticles have a larger surface area per unit mass and volume than the conventional materials, leading to increase of the effectiveness of blocking UV radiation.

Anti Bacterial

For imparting anti-bacterial properties, nano-sized silver, titanium dioxide and zinc oxide are used. Metallic ions and metallic compounds display a certain degree of sterilizing effect. Oxygen in the air or water is turned into active oxygen by means of catalysis with metallic ions, thereby dissolving the organic substance to create a sterilizing effect.

Wrinkle Resistance

Some researchers employed titanium dioxide (TiO₂) and nano silica to improve the wrinkle resistance of cotton and silk respectively. Nano-TiO₂, employed with carboxylic and as a catalyst under UV irradiation to catalyses the cross linking reaction between the cellulose molecule and acid. On the other hand, nano silica when applied with maleic anhydride as catalysts could successfully improve the wrinkle resistance of silk

NOTES

MCQs Based on Current Affairs

1. Under 'Bad Bank' comes:
 1. National Asset Reconstruction Company
 2. Punjab National Bank
 3. India Debt Resolution CompanyCode-
 - (a) 1, 2 and 3
 - (b) 1 and 2 only
 - (c) 2 and 3 only
 - (d) 3 and 1 only**Answer :- d**
2. For how many times a woman can be surrogate mother-
 - (a) Twice
 - (b) Thrice
 - (c) Once
 - (d) Any Number of times**Answer :- b**
3. Which medal India won at Asia Cup Hockey Tournament?
 - (a) Gold
 - (b) Silver
 - (c) Bronze
 - (d) None**Answer :- c**
4. Winner's of Asia Cup Hockey Tournament qualifies for-
 - (a) Olympic
 - (b) FIH Hockey World Cup
 - (c) Hockey Champions Trophy
 - (d) Commonwealth Games**Answer :- b**
5. How many schemes have been added to the Jan Samarth portal?
 - (a) 10
 - (b) 11
 - (c) 12
 - (d) 13**Answer :- d**
6. 'SHRESHTA' scheme targets students from which category
 - (a) EWS
 - (b) OBC
 - (c) SC
 - (d) ST**Answer :- c**
7. Har Ghar Dastak 2.0 is launched for
 - (a) Polio
 - (b) COVID-19
 - (c) Hepatitis B
 - (d) Japanese encephalitis**Answer :- b**
8. Aryabhatta Research Institute of observational Sciences is located in-
 - (a) Leh
 - (b) Kargil
 - (c) Dehradun
 - (d) Nainital**Answer :- d**
9. Recently which country launched the National Air Sports Policy, 2022-
 - (a) Nepal
 - (b) Bhutan
 - (c) India
 - (d) Maldives**Answer :- c**
10. 'Project: Vartak' is operational in-
 - (a) Arunachal Pradesh
 - (b) Uttarakhand
 - (c) Laddakh
 - (d) Rajasthan**Answer :- a**
11. BRO is building Nechiphu Tunnel in-
 - (a) Arunachal Pradesh
 - (b) Uttarakhand
 - (c) Sikkim
 - (d) Nagaland**Answer :- a**
12. Choose the correct statement/s-
 1. Kudankulam Nuclear Power Plant (KNPP) is located in Andhra Pradesh.
 2. KNPP is operated by Nuclear Power Corporation of India Limited.
 3. Secretary of Department of Atomic Energy is ex-Officio Chairman of Atomic Energy Commission.

Code-

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

Answer :- d**13. Choose the correct statement/s-**

- 1. GST compensation is paid by states to centre.
- 2. GST was introduced in the country from 1st July, 2018,
- 3. GST compensation will be paid for 15 years.

Code-

- (a) 1, 2 and 3
- (b) 1 and 2 only
- (c) 2 and 3 only
- (d) None of the above

Answer :- d**14. Choose the correct statement/s-**

- 1. National Intelligence Grid (NATGRID) works under National Security Advisor.
- 2. It is a counter-terrorism mechanism.
- 3. It is integrated intelligence grid connecting databases of core security agencies of the Government of India.

Code-

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

Answer :- b**15. According to FSSAI 1kg of fortified rice will contain-**

- 1. Folic Acid
- 2. Vitamin B-12
- 3. Iron
- 4. Magnesium

Code-

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

Answer :- c**16. Choose the correct statement/s-**

- 1. Exercise AMPRITI-X was conducted between navies of India and Bangladesh.
- 2. It is bi-annual event.

Code-

- (a) 1 only
- (b) 2 only
- (c) Both are true
- (d) Both are wrong

Answer :- d**17. Index of Industrial production (IIP) data is released by-**

- (a) NITI Aayog
- (b) RBI
- (c) National Statistical Office (NSO)
- (d) SEBI

Answer :- c**18. Kudankulam Nuclear Power plant is being built with the help of**

- (a) Russia
- (b) Japan
- (c) USA
- (d) UK

Answer :- a**19. Winners of Asia Cup Hockey Tournament is-**

- (a) India
- (b) Japan
- (c) South Korea
- (d) Malaysia

Answer :- c**20. MSP is decided by-**

- (a) Cabinet committee on Economic Affairs
- (b) Cabinet committee on Securities
- (c) Cabinet committee on Investment & Growth
- (d) Cabinet committee on Employment and skill development

Answer :- a

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AN INTRODUCTION



Dhyeya IAS, two decades old institution, was founded by Mr. Vinay Singh and Mr. Q. H. Khan. Ever since its emergence it has unparalleled track record of success. Today, it stands tall among the reputed institutes providing coaching for Civil Services Examination (CSE). The institute has been very successful in making potential aspirants realize their dreams which is evident from the success stories of the previous years.

As the nation progresses, the young generations become more conscious and aware about their career options. There is plethora of jobs and one among them is civil services, the most prestigious service in the country, which needs no introduction. It attracts many young minds hailing from almost all spectra of academic disciplines. The popular belief that the examination for this service is only meant for the brilliant lots has become a taboo as it also attracts the hardworking, sincere and disciplined minds. The saying- "In the end passion and hard work can substitute natural talent" holds true. It gives immense power and opportunity for young folks to bring about the positive changes in the society which would bring harmony and development. It inculcates values, moral, ethos and feeling of national integrity.

Quite a large number of students desirous of building a career for themselves are absolutely less equipped for the fairly tough competitive tests they have to appear in. Several others, who have a brilliant academic career, do not know that competitive exams are vastly different from academic examination and call for a systematic and scientifically planned guidance by a team of experts. Here one single move may invariably put one ahead of many others who lag behind. Dhyeya IAS is manned with qualified & experienced faculties besides especially designed study material that helps the students in achieving the desired goal.

Civil Services Exam requires knowledge base of specified subjects. These subjects though taught in schools and colleges are not necessarily oriented towards the exam approach. Classes at Dhyeya IAS are different from classes conducted in schools and colleges with respect to their orientation. Classes are targeted towards the particular exam. Classroom guidance at Dhyeya IAS is about improving the individuals' capacity to focus, learn and innovate as we are comfortably aware of the fact that you can't teach a person anything, you can only help him find it within himself.

We feel that despite brilliance and diligence, most of the students are lacking proper guidance and aptitude needed to clear Civil Services Examination. This is why, we at Dhyeya IAS amalgamated the traditional as well as modern approach of teaching by incorporating best educators of the industry ably supported by Academic Associates, Class Notes and printed Study Material, routine as well as surprise Tests. Due to its arduous efforts, Dhyeya IAS is able to carve a niche among all the civil services coaching institutes in India. Access to an institution is as important as the quality of Institution. Our faith in this philosophy made us grow. With 12 Face to Face Centers located in different parts in India, Distance Learning Program, Live Streaming Centers and Residential Academy, we have made truly pan India presence. Ever since the foundation the institute has produced a heavy pool of bureaucrats both at central and state level. Dhyeya IAS not only aims at imparting the content of civil services in best way but also nurturing the aspirants as leaders of tomorrow who have a responsibility of fulfilling the dreams of around 1.4 billion Indians. Dhyeya IAS has guided over 50,000 aspirants with more than 4500 selections in civil services. Our journey is a small contribution for the development of the society and nation by nurturing the potential civil services aspirants.

Considering the toughness of Civil Services Exam, where success rate is a meager 0.1 percent, Dhyeya IAS has continuously produced phenomenal results over the years. Year after Year Dhyeya IAS is being recognized for imparting guidance to civil services aspirants using benchmarked quality practices. On the basis of scalability, innovation, achievements, impact potential our efforts and contribution have been acknowledged and rewarded with Education Excellence Awards by ET NOW, Brands Academy, Times of India, etc. This has enhanced motivation, pride and self-esteem of entire Dhyeya family.

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