

My Notes....

NATIONAL

THREE BIG DIGITAL ANNOUNCEMENTS

Prime Minister Narendra Modi announced the **National Digital Health Mission**, **new cyber security policy** and **promise optical fibre connectivity to all six lakh villages in 1,000 days** on 15 August 2020. The announcements mark the culmination of projects that have been in the offing for a few years, or are a reaction to the present situation, as in the context of the tensions with China.

National Digital Health Mission

1. The **genesis of the new digital health infrastructure in India came about in the 2017 National Health Policy**, which proposed a new **National Digital Health Authority**.

2. Then, a committee headed by former UIDAI chairman Satyanarayana released the **National Digital Health Blueprint in July 2019**.

3. On August 7 this year, **National Digital Health Mission (NDHM) released their latest strategic document**, outlining the envisioned digital registries of doctors, hospitals, pharmacies, and insurance companies, digital personal health records, and digital clinical decision systems.



4. **Patients can create a Health ID**, allowing them to share their data between hospitals and doctors digitally.
5. They can choose for how long or what specific documents they would like to share with whom. If individuals are looking to benefit from government schemes, then they will be required to connect their ID to their Aadhaar.
6. **One copy of a patient's records is stored in their doctor's files and one is stored in their own individual locker** (which can be owned by a company or by the government). Other than the registry of doctors, professionals, and institutions, this allows for decentralised storing.
7. The **NDHM is implemented by the National Health Authority (NHA) under the Health Ministry**.
8. The vision is often compared to the **Unified Payments Interface (UPI)**, a government-owned highway that private players can hook into to provide their applications to consumers.
9. **NDHM is overseen by a Mission Steering Group with Ministers from IT, AYUSH, Women's and Child Development**, as well as Niti Aayog Member, NHA CEO, and

others. The policy-level decisions are taken by an empowered committee with Secretaries and others.

Cybersecurity Policy 2020

1. A **new cybersecurity policy to be rolled in 2020** would replace the present one.
2. This existing policy, **India's first, was released in 2013 in the context of leaks by US National Security Advisor whistleblower Edward Snowden** that alleged NSA surveillance was also tracking India's domestic issues.
3. The **National Cyber Security Strategy 2020 (NCSS 2020)**, overseen by the **National Security Council** Secretariat, collected public comments till January this year.
4. These frameworks will have a bearing on incidents similar to the hacking of 121 Indians' WhatsApps in 2019 by the **Israeli cyber firm NSO Group**.
5. The **present cyber threat landscape poses significant challenges** due to rapid technological developments such as **Cloud Computing, Artificial Intelligence, internet of Things, 5G**, etc.
6. New challenges include data protection/privacy, law enforcement in evolving cyberspace, access to data stored overseas, misuse of social media platforms, international cooperation on cybercrime & cyber terrorism, and so on.
7. Threats from organised cybercriminal groups, technological cold wars, and increasing state sponsored cyber-attacks have also emerged. Further, existing structures may need to be revamped or revitalised.
8. Thus, a need exists for the formulation of a National Cyber Security Strategy 2020," the call for comments states.
9. It may also have a bearing on a pending data protection legislation being seen by a **Joint Select Committee in Parliament** and which mandates some amount of data localisation in its present form.

Optical-fibre connectivity

1. The government calls it the "**world's largest connectivity project**", but **BharatNet** — which envisages laying of about **8 lakh kilometre of incremental optical fibre cable (OFC)** to all the 2,50,000-plus Gram Panchayats (GP) in the country at an estimated cost of Rs 42,068 crore (\$6.2 billion) — has had significant snags in deployment for years now.
2. **First, it was unable to meet its March 2020 deadline for its second phase of deployment, which was shifted to August 2021.**
3. BharatNet was launched in **October 2011; it was originally named National Optical Fibre Network or NOFN.**
4. It's being **financed by the Universal Service Obligation Fund** of the **Department of Telecommunications**, through a 5 per cent levy on the revenues of private telecom service providers.
5. The project's **primary objective is to extend fibre connectivity** — available at the state capital, district headquarters and blocks — to every panchayat, thereby providing access to broadband internet services to **69 per cent of India's rural population.**
6. **Phase I of BharatNet, which commenced in June 2014** after the Narendra Modi-led government took over, **was completed in December 2017.**
7. In the second phase, **the remaining 1,29,827 gram panchayats are to be covered**

through 5 km of new fibre per gram panchayats.

- This phase incorporates a mix of both underground and aerial fibre as well as radio and satellite connectivity to reach more inaccessible locations such as **Jammu and Kashmir, Northeast, Himachal Pradesh** and **Uttarakhand**.

AGRI-INFRA FUND LAUNCHED

Prime Minister Narendra Modi on 9 August 2020 launched a **financing facility of Rs 1 lakh crore** under the **Agriculture Infrastructure Fund** for **agri-entrepreneurs, startups, agri-tech players** and **farmer groups** for post-harvest management and nurturing farm assets. Modi also released the **sixth installment of Rs 17,100 crore** to more than 8.55 crore farmer beneficiaries under the **Pradhan Mantri Kisan Samman Nidhi (PM-KISAN)** scheme.

What

- Last month, the **Union Cabinet had approved this fund as part of the over Rs 20 lakh crore stimulus package** announced in response to the **COVID-19 crisis**, while **PM-KISAN is an ongoing scheme** being implemented since 2018.

- The **new agri-infra fund, the duration of which will be 10 years till 2029**, aims to **provide medium-to-long term debt financing facility for investment in viable projects** for post-harvest management infrastructure and community farming assets through interest subvention and financial support.

Under this, about Rs 1 lakh crore will be sanctioned under the financing facility in partnership with multiple lending institutions as **loans to primary agri-credit societies, farmer groups, farmer producer organisations (FPOs), agri-entrepreneurs, startups** and **agri-tech players**.

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Agriculture Infrastructure Fund

- To provide debt financing facility for post-harvest management Infrastructure & community farming assets
- Corpus of ₹1 lakh crore for FPOs, SHGs, PACS*, Startups, Agri-entrepreneurs, for other farm processing-based activities
- Interest subvention of 3% per annum up to ₹2 crore for a max. period of 7 years
- Moratorium for repayment from 6 months up to 2 yrs
- Scheme to be implemented from August 2020

- Already, **11 of the 12 public sector banks have signed memorandum of agreement** with the Agriculture Ministry.

- Under the fund, **about 3 per cent interest subvention and credit guarantee of up to Rs 2 crore** will be provided to the beneficiaries to increase the viability of the projects.

- Loans will be disbursed in four years** starting with sanction of Rs 10,000 crore in the current year and Rs 30,000 crore each in the next three financial years.

7. **Moratorium for repayment under this financing facility may vary**, subject to a minimum of six months and maximum of two years.
8. Further, credit guarantee coverage will be available for eligible borrowers from this financing facility under the **Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) scheme** for a loan of up to Rs 2 crore. The fee for this coverage will be paid by the government.
9. In case of FPOs, credit guarantee may be availed from the facility created under the FPO promotion scheme of the Department of Agriculture, Cooperation and Farmers Welfare (DACFW).
10. The funds will be provided for **setting up of cold stores and chains, warehousing, silos, assaying, grading and packaging units, e-marketing points linked to e-trading platforms and ripening chambers**, besides PPP projects for crop aggregation sponsored by central/state/local bodies.
11. The **agri-infra fund**, which will be **managed and monitored through an online Management Information System (MIS) platform**, will enable all the qualified entities to apply for loan under the fund.
12. The beneficiaries of the scheme will include **farmers, PACS, Marketing Cooperative Societies, FPOs, SHGs, Joint Liability Groups (JLG), Multipurpose Cooperative Societies, Agri-entrepreneurs, Startups, and Central/State agency or Local Body** sponsored **Public-Private Partnership Projects**.
13. **Under the PM-KISAN scheme**, the government is **providing annually Rs 6,000 in three equal installments to 14 crore farmers**. The amount is directly transferred into the bank accounts of the beneficiaries through **direct benefit transfer (DBT) mode**.

FIRST EVER "TSUNAMI READY" BY UNESCO

In the **first two coastal villages of Odisha have been recognised** as being "**Tsunami Ready**" by UNESCO for their overall preparedness to face the calamity, Additional Chief Secretary **P K Jena** said on 6 August 2020. With it **Odisha became the first state in the country** to have such villages and the **country the first in the Indian Ocean region to achieve the honour from the Intergovernmental Oceanographic Commission (IOC) of UNESCO**.

What

1. The **two coastal are Venkatraipur (Boxipalli) village of Rangeilunda block in Ganjam district and Noliasahi village of Ersama block in Jagatsinghpur district**.
2. It will make **Odisha a role model for tsunami preparedness**. With this award, the state is motivated to make the 326 villages and urban local bodies tsunami ready in one year's time, Jena said.
3. **Odisha State Disaster Management Authority (OSDMA)**, which was set up in the state following the 1999 super cyclone that claimed 10,000 lives, has implemented the Tsunami Ready programme in the State.

4. The **Indian Ocean Tsunami Ready Programme of IOC-UNESCO** is a community performance-based programme that facilitates tsunami preparedness as an active collaboration of the community, community leaders, and national and local emergency management agencies, an official release issued by the state government said.
5. The **main objective of this programme is to improve coastal community** preparedness for tsunami emergencies, to minimize the loss of life and property and to ensure structural and systematic approach in building community preparedness.



DAUGHTERS BECOME EQUAL COPARCENERS AT BIRTH

In a significant judgment, the **Supreme Court** on 11 August 2020 **ruled that daughters will have equal right in the parental property as son even if their father died before the Hindu Succession (amendment) Act 2005 came into force.** A **three-judge bench** headed by Justice Arun Mishra said, **“Daughters must be given equal rights as sons. Daughter remains a loving daughter throughout life. The daughter shall remain a coparcener throughout life,** irrespective of whether her father is alive or not.”

What

1. The bench also held that **“rights under the amendment are applicable to living daughters of living coparceners as on 9-9-2005,** irrespective of when such daughters are born”.
2. The bench was hearing a batch of appeals that **raised an important legal issue** whether the **Hindu Succession (Amendment)** which gave equal rights to daughters in ancestral property, has a retrospective effect.
3. Settling the disputed question of law, the top court **set aside a clutch of previous decisions that a daughter** would have the coparcenary right only if both the father and the daughter



- were alive as on September 9, 2005 when the amendment was notified.
4. The court had earlier given two contradictory judgments in **two cases — Prakash V. Phulavati (2015)** and **Danamma @ Suman Surpur vs. Amar (2018)**.
 5. In **Prakash V. Phulavati (2015)**, a bench comprising Justices Anil R. Dave and A.K. Goel had held that the rights under the amendment are **applicable to living daughters of living coparceners as on 9-9-2005**, irrespective of when such daughters are born.
 6. It was held that, is neither any express provision for giving retrospective effect to the amended provision nor necessary intendment to that effect.
 7. On the other hand, in the case of **Danamma @ Suman Surpur vs. Amar (2018)**, the bench comprising Justices A K Sikri and Ashok Bhushan had held that the share of the father who died in 2001 would also devolve upon his two daughters who would be entitled to share in the property.

INDIA'S FIRST 'KISAN RAIL'

Union minister Narendra Singh Tomar on 7 August 2020 **flagged off the country's first 'Kisan Rail' train from Deolali in Nashik to Danapur in Bihar**, through video-conferencing. **Kisan Rail will help in transporting agricultural produce**, especially perishable commodities, at cheaper rates and aid farmers in getting the right price for their crops. Tomar, who also holds Rural Development and Panchayati Raj portfolios, said the **Indian Railways had operated 4,610 trains on 96 routes**, ensuring supply of food items across the country amid the COVID-19 pandemic.

What

1. **'Kisan Rail' is a weekly service** that departs from Deolali every Friday at 11 am and reaches Danapur the next day at 6.45 pm.
2. On the return journey, the train will depart from Danapur every Sunday at 12 pm and reach Deolali at 7.45 pm the next day.
3. The train will cover a distance of 1,519 kms in 31.45 hours on a single trip and will halt at Nashik Road, Manmad, Jalgaon, Bhusaval, Burhanpur, Khandwa, Itarsi, Jabalpur, Satna, Katni, Manikpur, Prayagraj Chheoki, Pandit Deen Dayal Upadhyay junction and Buxar stations.
4. The **Kisan Rail will provide a good market to the farmers for their produce**. Aggressive marketing is being done by the Central Railway in coordination with local farmers, businessmen and the APMC to ensure farmers get maximum benefit.
5. The announcement regarding the "**Kisan Rail**" **was made in the current year's Budget**.
6. Finance Minister Nirmala Sitharaman had announced this initiative in her Budget speech envisaging setting up of a **'Kisan Rail' through the public-private-partnership (PPP) mode** for a cold supply chain to transport perishable goods.
7. **The proposal to use refrigerated parcel vans** to ferry perishables was **first announced by then railway minister Mamata Banerjee in the 2009-10 Budget**, however, **it has failed to take off**.

AUM SYSTEM

Scientists at Gayatri Vidya Parishad-Scientific and Industrial Research Centre in Visakhapatnam has developed an **indigenous system for real-time remote monitoring of air quality parameters**, the Department of Science and Technology (DST) said. The **Air Unique-quality Monitoring (AUM) system** is an innovative application of the principles of laser backscattering, statistical mechanics, optoelectronics, artificial intelligence, machine/deep learning, and Internet of Things.

What

1. It can **identify, classify and quantify various pollutants simultaneously** (of orders of less than one part per billion) and meteorological parameters, with very high precision, sensitivity and accuracy.
2. The **AUM system was successfully evaluated during laboratory trials**. It was also compared in the field with imported systems from **France and Australia**, and **operated by the Karnataka State Pollution Control Board under the aegis of the Central Pollution Control Board of India**.
3. The system had CATS Eco-Systems, Nashik as the technology transfer partner for commercialisation.
4. It has been found to be highly sensitive and accurate and capable of simultaneous detection and quantification of all air quality parameters and offers a number of merits over any of the currently available conventional systems.
5. It is portable, compact, low powered and economical, works on plug and play systems, requires no setting up time, and no additional civil infrastructure for housing.
6. The system also **provides information on all gases and meteorological parameters simultaneously**.
7. It is a **non-intrusive remote, real-time monitoring system** with very high sensitivities and accuracies and is capable of monitoring in both spatial and temporal domains, with very high sampling frequencies.
8. Also, the data from spatially separated sensors can be seamlessly streamed to a cloud server, from where digestible real-time encrypted information on the dashboard is made available to users at any part of the world

AI-BASED MODULE FOR SCHOOL STUDENTS

Niti Aayog's **Atal Innovation Mission (AIM)** in collaboration with **IT industry body Nasscom** launched an **artificial intelligence-based module for school students** to empower younger minds and **drive innovations in the country to the next level**. The **AIM is a flagship initiative set up by the Niti Aayog** to promote innovation and entrepreneurship in the country, based on a detailed study and deliberations on innovation and entrepreneurial needs of India in the years ahead.

What

1. This module is the **next step in bringing artificial intelligence (AI) to Indian classrooms** and is a **successor to the AI base module launched in February this year**.
2. The '**AI Step-up Module**' provides a comprehensive set of 'learn it yourself' advanced modules to those who wish to expand their knowledge base after becoming familiar with the basics of the AI discipline through the AI base module.

3. The module is designed in an attractive graphical manner that is comprehensible for **all students belonging to rural and urban areas**.
4. The 'AI Step-up Module' is the future of this country as it targets the youth which in itself is path breaking.
5. Niti Aayog urged youth to take this opportunity positively and explore the module to create valuable solutions which would pave the way for the country to truly become '**Aatmanirbhar Bharat**'.
6. Nasscom President Debjani Ghosh said that the rapid advancement of technology, such as **AI and robotics**, has penetrated all industries, including education.
7. The **module is a directed step by the government in building citizens** and a workforce that is aware of AI and can work with AI, the statement said adding that it has been created keeping the age group of its intended audience in mind, so that they can be easily understood by any individual who has just been exposed to the idea of AI.

10% EWS QUOTA REFERRED TO THE BENCH

The **Supreme Court** on 5 August 2020 referred a batch of petitions challenging the validity of having a **10% Economically Weaker Section (EWS) quota** in government jobs and educational institutions to a **five-judge constitution bench**. The order was passed by a three-judge bench headed by **Chief Justice SA Bobde** and comprising Justice R Subhash Reddy and BR Gavai. The top court had reserved order on this on 31 July.

What

1. The Centre was opposed to referring the issue to a larger bench, petitioners had wanted the constitution bench to deliberate on the matter.
2. The petitions filed by **NGOs 'Janhit Abhiyan'** and '**Youth For Equality**' along with 33 others sought directions to quash the **Constitution (103 Amendment) Act, 2019**, saying that the **economic criterion cannot be the sole basis for reservation**.
3. Earlier, the top court had refused to stay the central government's decision to grant a 10 per cent quota in jobs and admissions to poor candidates in the general category.
4. The Centre had earlier defended its decision and contended that the **Constitution (103 amendments) Act, 2019** granting 10 per cent reservation to EWS is **intended to uplift around 200 million people who are still below the poverty line**.
5. The pleas said the bill violates basic features of the Constitution of India as reservation on economic grounds cannot be limited to the general category and the overall 50 per cent ceiling limit cannot be breached.
6. Referring to the nine-judge bench decision of the apex court in the **landmark 1992 Indira Sawhney case**, the petition had submitted that the latest amendment completely violated the Constitutional norm that economic criterion cannot be the only basis of reservation.
7. The **quota will be over and above the existing 50 per cent reservation to Scheduled Castes, Scheduled Tribes and Other Backward Classes (OBCs)**.
8. The Centre had said the quotas in jobs and education were meant to uplift millions of poor socially.

INTERNATIONAL

MAHINDA RAJAPAKSA IS FOURTH-TIME SRI LANKA PM

Mahinda Rajapaksa was sworn in on 9 August 2020 as **Sri Lanka's new prime minister** at a **centuries-old Buddhist temple** after his party won a landslide victory in parliamentary elections that allowed the influential family to consolidate power for the **next five years**. The **74-year-old former president and Sri Lanka People's Party (SLPP) leader** was administered the oath of office by his younger brother and President Gotabaya Rajapaksa at a gathering of Buddhist monks, representatives of the diplomatic community and other senior officials.

What

1. **India's High Commissioner to Sri Lanka Gopal Baglay** on 8 August 2020 became the **first envoy to congratulate the new prime minister** when he called on Mahinda Rajapaksa.
2. Baglay recalled that Prime Minister Narendra Modi had complimented the people and Government of Sri Lanka on the successful conduct of elections and had acknowledged the impressive electoral performance of the SLPP.
3. The **strong mandate received by Prime Minister Mahinda Rajapaksa** provides a fresh opportunity for the two countries to enhance bilateral engagement, including mitigating the **adverse economic effects of the COVID-19 pandemic**.
4. **Mahinda Rajapaksa completed 50 years of parliamentary politics in July this year**. He was elected as a Member of Parliament at the young age of 24 in 1970. He has since been elected President twice.
5. **He was prime minister between April 2004 and November 2005**. He was prime minister for 52 days in 2018, and from November 2019 to August 5, 2020.

AGREEMENT WITH ISRAEL

Iran and Turkey lashed out at their regional rival the United Arab Emirates on 14 August 2020 over its decision to **normalize diplomatic relations with Israel** in a US-brokered deal, accusing it of betraying the **Palestinian cause**. Iran's Foreign Ministry called the deal a **"dagger that was unjustly struck by the UAE in the backs of the Palestinian people and all Muslims"**. Turkey said the peoples of the region "will never forget and will never forgive this hypocritical behavior" by the UAE.

What

1. The UAE, which has never fought Israel and has quietly been improving ties for years, said the agreement put a hold on Israel's plans to **unilaterally annex parts** of the occupied West Bank, which the Palestinians view as the heartland of their future state.
2. The Turkish said the **UAE had no authority to negotiate with Israel on behalf of the Palestinians** or "to make concessions on matters vital to Palestine."
3. The agreement would make the **UAE the first Gulf Arab state** - and the **third Arab country, after Egypt and Jordan** - to have full diplomatic ties with Israel.
4. The Palestinians say the deal amounts to **"treason"** and have called on Arab and Muslim countries to oppose it.
5. The historic deal delivered a key foreign policy victory for US President Donald Trump

as he seeks re-election and reflected a changing Middle East in which shared concerns about archenemy Iran have largely overtaken traditional Arab support for the Palestinians. Trump has predicted that other countries in **the region will follow the UAE's lead.**

6. **Israel, the UAE and other Gulf countries** that view Iran as a regional menace have been cultivating closer ties in recent years.
7. Turkey has had diplomatic relations with Israel for decades, but under President Recep Tayyip Erdogan has positioned itself as a champion of the Palestinians. Turkey and the UAE support rival camps in the conflict in Libya.

ENDURING LIGHTNING 2

Israel said its air force held a joint military exercise with the United States Air Forces Central Command for the second time in 2020. The so-called "**Enduring Lightning 2**" exercise took place in southern Israel on 2 August 2020. The army said that the exercise was held in accordance with the guidelines of the Israeli Health Ministry, with planning and debriefing done at a distance and through **digital means.**

What

1. **U.S. Air Force Central Command** and the **Israeli Air Force** conducted the exercise "**Enduring Lightning II**" on **Aug. 2, 2020** in the **skies over southern Israel.** It is the **second joint exercise** between the **two countries involving the F-35.**
2. The **IAF's 140th Squadron**, which operates the "**Adir (F-35I) fighter jet**", trained alongside the **380th Air Expeditionary Wing's 421st Fighter Squadron** and 908th Expeditionary Air Refueling Squadron.
3. The 421st FS operates the F-35A Lightning II and the 908th EARS flies the KC-10 Extender, which is an air refueling platform.
4. The IAF 122nd Squadron also participated in the exercise. The squadron operates the "Nachshon" aircraft and is responsible for conducting air traffic control.
5. The **F-35, which is an advanced fifth generation fighter**, is able to engage both aerial and ground threats. During the exercise, all specialties of the participants were needed from command and control to air refueling to engaging targets in order to neutralize the threat in each proposed scenario.
6. The **two air forces maintain close cooperation**, including mutual learning and sharing of lessons learned.
7. The exercise was held **amidst tensions along Israel's borders with Lebanon and Syria**, sparked by the killing of a fighter with Hezbollah, a **Lebanese Iran-backed armed group**, in an apparent Israeli airstrike in Syria in July.

ECONOMY

NEW FACELESS TAX SYSTEM

Prime Minister Narendra Modi on 13 August 2020 **launched the platform for 'Transparent Taxation – Honoring the Honest' aimed at easing compliance and expediting refunds, benefiting honest taxpayers. Three main features of the platform are faceless assessment, faceless appeal and tax payers' charter.** The Prime Minister said focus is on making the tax system **people-centric and public friendly**, "banking the unbanked, securing the unsecured, funding the unfunded and honoring the

honest.”

What

1. The **four factors** responsible for changes in the taxation system were **policy-driven governance, belief in people's honesty, the use of advanced technology and efficiency in bureaucracy**. Where there is complexity, there is a problem in compliance.
2. A persistent issue the current administration has received criticism on is the **issue of taxation, despite genuine attempts at improving the tax structure**.
3. **India's tax administration has been known for tax harassment**, where overzealous well-intentioned officials while raising tax revenues, have dampened growth and at times done more damage than good.
4. The government introduced **faceless income tax assessment to reduce the scope for corruption and overreach by officials**.
5. The issue of alleged tax harassment by officers gained much attention in India after VG Siddharta, the founder of India's largest coffee shop chain, committed suicide in July and left behind a note accusing tax authorities of persecuting him.
6. Tax officials are pushing back against the **new faceless tax assessment program**. They see problems in the lack of consultation and inadequate resources to implement the changes.
7. In a joint letter sent to the **Central Board of Direct Taxes (CBDT)** this month, representatives of the Income Tax Employees Federation and the Income Tax Gazetted Officers' Association voiced their displeasure.
8. Tax officers told Reuters that **faceless tax assessment may reduce tax collection** and raise pressure on officers that are under stress to meet lofty tax targets for the current fiscal year.
9. The **CBDT has given a framework and put in place a system in the form of this platform**, a transparent, efficient and accountable tax system. The **platform will use technology such as data analytics and AI**.
10. This adds strength to our efforts of reforming and simplifying our tax system. It will benefit several honest taxpayers, whose hard work powers national progress.
11. Since 2014, there have been consistent attempts at revamping the tax administration. The launch of the platform carries forward the journey of direct tax reforms, following

Key points

1. The new platform launched has major reforms like **faceless assessment, faceless appeal and taxpayers' charter**.
2. The facility of **faceless appeal will be available for citizens across the country from September 25**.
3. The **Budget for 2020-21 fiscal unveiled on February 1**, had announced a '**taxpayer charter**', which is expected to have statutory status and will empower citizens by ensuring time-bound services by the **Income Tax (I-T) department**.
4. The charter will ensure **trust between a taxpayer and the administration** and reduce harassment, as well as increase efficiency of the department.

the several measures that have been taken by the CBDT to aid taxpayers.

- The current number of taxpayers in the country is significantly low at only 1.5 crore. The focus of the tax reforms has been on reduction in tax rates and on simplification of direct tax laws.

NEGATIVE IMPORTS LIST FOR DEFENCE ANNOUNCED

Defence Minister Rajnath Singh on 9 August 2020 announced a list of 101 items that the Defence Ministry will stop importing. It essentially means that the Armed Forces—Army, Navy and Air Force—will only procure all of these 101 items from domestic manufacturers. The manufacturers could be private sector players or defence Public Sector Undertakings (DPSUs). For years India has been among the top three defence importers in the world, the government wants to reduce the dependence on imported items in defence and **give a shot in the arm to the domestic defence manufacturing industry.**

What

- By denying the possibility of importing the items on the negative list, the domestic industry is given the opportunity to step up and manufacture them for the needs of the forces.
- As per **Stockholm International Peace Research Institute**, which tracks defence exports and imports globally, **India has been the second largest importer between 2014 and 2019 with US\$ 16.75 billion worth of imports during this period.**
- The Defence Ministry is **“now ready for a big push to Atmanirbhar Bharat initiative”** and the ministry will introduce **“import embargo on 101 items** beyond the given timeline to boost indigenisation of defence production”.
- The government has been hoping that the defence manufacturing sector can play a leading role in boosting the economy, not just for the domestic market, but to become an exporter as well.

What does it include?

- The list, shared by the government on 9 August 2020, **has a range of items. From simpler items to advanced technologies.**
- The **items mentioned in the negative imports list** include **water jet fast attack craft to survey vessels, pollution control vessels, light transport aircraft, GSAT-6 terminals, radars, unmanned aerial vehicles, to certain rifles, artillery guns, bullet proof jackets, missile destroyers, etc.**
- Almost 260 schemes of such items were contracted** by the Armed Forces at an “approximate cost of Rs 3.5 lakh crore between April 2015 and August 2020” and the government expects that “contracts worth almost Rs 4 lakh crore will be placed upon the domestic industry within the next 6 to 7 years”.

FDI IN COMMERCIAL MINING

The Centre on 3 August 2020 clarified that **any foreign direct investment (FDI) in commercial coal mining from an entity of a country that shares land border with India will be allowed only after government approval.** This is with reference to

the ongoing auction process of coal mines for commercial coal mining.

What

1. According to the Press Note, 'an entity of a country, which shares a land border with India or where the beneficial owner of an investment into India is situated in or is a citizen of any such country, **can invest only under the Government route.**
2. Further, a **citizen of Pakistan or an entity incorporated in Pakistan can invest only under the government route** in

sectors/activities **other than defence, space, atomic energy and sectors/activities prohibited for foreign investment.**

A corrigendum to the tender document has also been issued in this regard.

3. **Foreign Direct Investment Policy, 2017** was amended vide the Press Note, issued by the central government, **to permit 100 per cent FDI under automatic route in coal mining activities**, including associated processing infrastructure, for sale of coal, subject to the provisions of **Coal Mines (Special Provisions)**

Act, 2015 and the **Mines and Minerals (Development and Regulation) Act, 1957** and other relevant Acts on the subject.

4. Accordingly, it was stated in the tender document that The Press Note, issued by the **Central Government, amended FDI Policy 2017, to permit 100 per cent FDI under automatic route in coal mining activities**, including associated processing infrastructure subject to the act and other applicable Laws, for sale of coal.
5. It is further clarified that **any FDI in commercial coal mining is subject to applicable laws**, including the Press Note 2020.
6. Prime Minister Narendra Modi launched the **auction process of coal blocks for commercial mining in June.**

Flashback

1. In June 2020, the Prime Minister threw open the **auction of 41 coal blocks for commercial mining.**
2. The decision, which was part of the announcements made by the Centre **under the Atmanirbhar Bharat Abhiyan**, was already proposed in January **through the Mineral Laws (Amendment) Ordinance, 2020.**
3. These **auctions invite participants to mine coal blocks by bids on the percentage value of coal sold** that they will be willing to share with the government.
4. The nationalisation was done in two phases, **from 1971-1973.** That's how the **Coal Mines (Nationalisation) Act, 1973** was enacted, which **restricted coal mining operations mainly to government entities.**
5. The **recent decision to allow private firms to participate in the bidding process with a reduced upfront amount**, the facility of adjustment of upfront amount against royalty, liberal operational efficiency parameters, and **100 per cent FDI through automatic route is a watershed moment for India's energy industry.**
6. **India being the world's fourth-largest country in terms of availability of coal reserves**, we still **import around 240 million tonnes (mt) of coal a year** valued at about ₹1.7 lakh crore.

SCIENCE AND TECHNOLOGY

FIRST EVER OPTICAL FIBRE CABLE PROJECT FOR ANI

Prime Minister Narendra Modi inaugurated the **first ever undersea optical fibre project for Andaman and Nicobar Islands (ANI)** which will provide **high speed broadband connections** in the Union Territory at par with services in the mainland. On December 30, 2018, the Prime Minister had laid the foundation for the **2,312-Kilometers long submarine optical fibre cable project** connecting **Chennai - Andaman and Nicobar Islands (CANI)**.

What

1. **From Chennai to Port Blair, Port Blair to Little Andaman and Port Blair to Swaraj Dweep**, this service has started in **large part of Andaman Nicobar**. The **project has been implemented at a cost of Rs 1,224 crore**.
2. **Besides Port Blair**, it will **connect other islands namely Swaraj Dweep (Havlock), Long Island, Rangat, Little Andaman, Kamorta, Car Nicobar and Greater Nicobar**.
3. All telecom operators in the country will be able to provide their mobile and broadband services using the **CANI optical fibre link**.
4. The optical fibre connectivity project to connect Andaman and Nicobar with the rest of the country and the world is a symbol of our commitment towards ease of living.
5. According to official data, **internet speed of 400 gigabyte (Gb) per second will be provided at Port Blair** and for other islands it will be 200 Gb per second.
6. Undersea cable linking Andaman Islands with Chennai was laid before time despite difficult situation, PM said. Work of laying **undersea cable** has been executed by BSNL in a record time of less than 24 months.
7. **This project will give a boost to 4G mobile services** and digital services like tele-education, tele-health, e-governance services and tourism on the islands.
8. Tourists will get huge benefits from the **optical fibre facility** and thousands of families in the Union Territory will be able access education, banking, shopping or tele-medicine online.
9. High impact projects are being **expanded in 12 islands of Andaman and**

Flashback

1. **Fiber optics**, or **optical fiber**, refers to the **medium and the technology associated with the transmission of information as light pulses** along a glass or plastic strand or fiber. **Fiber optics is used for long-distance and high-performance data networking**.
2. **Fiber optic cables** are used since they **hold a number of advantages over copper cables**, such as **higher bandwidth and transmit speeds**
3. A fiber optic cable can contain a varying number of these glass fibers -- from a few up to a couple hundred. Surrounding the glass fiber core is another glass layer **called cladding**.
4. A **layer known as a buffer tube protects the cladding**, and a jacket layer acts as the final protective layer for the individual strand.

- Nicobar.** Issue of mobile and internet connectivity have been resolved today. Apart from this, physical connectivity through road, air, and water are being strengthened.
10. The PM referred to the work on two major bridges and the NH-4, in order to improve the road connectivity of North and Middle Andaman.
 11. **Port Blair Airport is being enhanced to handle a capacity of 1,200 passengers** and the airports are ready for operations in **Diglipur, Car Nicobar and Campbell - Bay.**

MASSIVE EXPLOSION IN BEIRUT

The **catastrophic explosion at Beirut port** on 4 August 2020 evening that has so far killed at least 100 people and injured around 4,000, with an unknown number feared trapped under rubble was, according to the government of Lebanon, **caused by over 2,700 tonnes of ammonium nitrate kept in storage for over six years.** A **common chemical ingredient of agricultural fertilisers**, the **nitrogen rich compound is also the main component of the explosive composition known as ANFO — ammonium nitrate fuel oil.**

What

1. In its pure form, **ammonium nitrate (NH₄NO₃) is a white, crystalline chemical** which is **soluble in water.** It is the main ingredient in the manufacture of commercial explosives used in mining and construction.
2. In India, **The Ammonium Nitrate Rules, 2012**, under **The Explosives Act, 1884**, define ammonium nitrate as the “compound with **formula NH₄NO₃** including any mixture or compound having more than 45 per cent ammonium nitrate by weight including emulsions, suspensions, melts or gels but excluding emulsion or slurry explosives and non explosives emulsion matrix and fertilizers from which the ammonium nitrate cannot be separated”.
3. **Pure ammonium nitrate is not an explosive on its own.** It is **classified as an oxidiser (Grade 5.1) under the United Nations classification of dangerous goods.**
4. If mixed with ingredients like fuel or some other contaminants, or because of some other external factors, it can be very explosive.
5. However, for combinations to explode, triggers like detonators are required. Many **Improvised Explosive Devices (IEDs)** used by terrorists around the world have **ANFO** as the main explosive, triggered by primary explosives **like RDX or TNT.**
6. In the majority of terror attacks in India, including those in Pulwama, Varanasi, Malegaon, Pune, Delhi, Hyderabad, and Mumbai, ammonium nitrate has been used along with initiator explosives like RDX.
7. In India the **manufacture, conversion, bagging, import, export, transport, possession for sale or use of ammonium nitrate is covered under The Ammonium Nitrate Rules, 2012.** The rules also make storage of ammonium nitrate in large quantities in populated areas illegal in India.
8. For the manufacture of ammonium nitrate, an Industrial licence is required under the **Industrial Development and Regulation Act, 1951.**
9. A license under the **Ammonium Nitrate Rules, 2012** is also required for any activity related to ammonium nitrate.

A MASSIVE SUNSPOT

There is a **massive sunspot** on the **Sun** that **will be turning towards our planet** which **could result in major strong flares**. According to a report by spaceweather.com, the **sunspot AR2770**, which was deducted earlier this week, is **expected to grow in size**. Few minor space flares have been emitted by this particular sunspot already which has not caused anything major other than “**minor waves of ionization to ripple through Earth’s upper atmosphere**”.

What

1. However, **this sunspot which can be up to 50,000 kilometers in diameter** may release a **huge amount of energy** which in turn will lead to **solar flares**.
2. These eruptions may lead to **solar flares and storms**. This phenomenon is called **Coronal Mass Ejections (CME)**.
3. These flares can have a **major effect on radio communications, Global Positioning Systems (GPS) connectivity, power grids, and satellites**.
4. According to the **National Oceanic and Atmospheric Administration (NOAA)**, the **CMEs can result in “fluctuations of electrical currents in space and energize electrons and protons trapped in Earth’s varying magnetic field”**. Solar flares caused by these CMEs can also trigger intense light in the sky, called **auroras**.

What is a solar flare?

1. **Solar flares are the result of changes in magnetic fields on the sunspots** that cause a **huge explosion**.
2. These **solar flares are often released into space** and its radiation can **disrupt earth's radio communications**.
3. The **solar flare explosion’s energy can be equivalent to a trillion ‘Little boy’ atomic bombs** that was dropped on Hiroshima and Nagasaki in 1945.
4. Recently, scientists developed a new model that can successfully predict **seven of the Sun’s biggest flares from the last solar cycle**, out of a set of nine with the help of **NASA’s Solar Dynamics Observatory**.

What is a sunspot?

1. A **sunspot is a dark area on the sun** that appears dark on the surface and **relatively cooler than the other parts**.
2. These sunspots have **electrically charged gases** that generate areas of powerful magnetic forces.
3. The **gases on our sun are constantly moving** which causes irregularities in this ‘**magnetic field**’.
4. These activities are also called ‘**solar activity**’. The levels of solar activity don’t remain the same and differ from **one solar cycle to another**.

CHANDRAYAAN-2 CAPTURES SARABHAI CRATER

Chandryaan-2 has captured images of the Moon and one of the craters has been **named after Vikram Sarabhai**, the **father of the Indian space programme**, a statement said. Minister of State in the Prime Minister’s Office Jitendra Singh said that as

Sarabhai's birth centenary year completed on August 12, this is a thanksgiving tribute to the scientist. The **recent achievements of ISRO**, which have **placed India as a frontline nation of the world**, is a vindication of Sarabhai's visionary dream. The Department of Space directly comes under the Prime Minister's Office.

What

1. The **Indian Space Research Organization (ISRO)** has sought to pay tribute to him in a special way by announcing that **Chandrayaan-2 Orbiter** has captured the Moon images of '**Sarabhai Crater**',".
2. The **Sarabhai Crater is around 250 to 300 kilometres east of the crater** where the **Apollo 17 and Luna 21 Missions had landed**.
3. The Sarabhai Crater, captured in 3D images, shows that **it has a depth of around 1.7 kilometres** taken from its raised rim and the slope of crater walls is between 25 to 35 degrees. These findings will help space scientists understand further the process on the lunar region filled with lava.
4. **Chandrayaan-2 continues to perform** as per design and provides valuable scientific data. The public release of scientific data from Chandrayaan-2 for global use will begin in October 2020.
5. Planned to land on the South Pole of the Moon, **Chandrayaan-2 was launched on July 22**. However, **the lander Vikram hard-landed on September 7**, crashing India's dream to become the first nation to successfully land on the lunar surface in its maiden attempt.
6. The **orbiter of the mission is working fine and has been sending data**.

MISCELLANEOUS

SPACE BUTTERFLY

The **European Southern Observatory (ESO)** announced in a statement that its **Very Large Telescope (VLT)** had **captured a stunning and rare celestial event**. In the statement, the ESO said that **its VLT captured a gas bubble**, known as the **NGC 2899**, which resembled a **flying butterfly** with its **symmetrical structure, stunning colours and intricate patterns**. According to the ESO, the **NGC 2899** has never been clicked in such detail ever before, since this time, even **faint outer edges of the nebula seemed to be glowing against a backdrop of stars**.

What

1. **NGC 2899 is a nebula in which the gas is extending to a distance of maximum two light years** from its centre.
2. Its gas **reaches temperature upwards of 10,000 degrees**, due to the radiation from the planet star of the nebula.
3. This **large amount of radiation causes the nebula's oxygen gas to glow in a blue colour**, encased within a **reddish halo of the hydrogen gas**, all the while glowing brightly against a background of stars in the Milky Way galaxy.
4. **NGC 2899 is 3,000 to 6,500 light years away from the Earth** and is **located in the Southern constellation of Vela or The Sails**.
5. It has two central stars, which the astronomers believe is the reason for its almost symmetrical appearance.
6. The ESO stated that after one of the central stars ended, and gave way to the nebula's

outer layers, the remaining star was interfering with the flow of the gas, creating a two-lobed shape. As per ESO, **only about 10% to 20% of the nebulae has this kind of “bipolar” shape.**

FIVE BLOOD MOLECULES ARE IDENTIFIED

Scientists have found five medical indicators in the blood of Covid-19 patients which are **associated with higher odds of death** due to the disease, findings that can help physicians better predict clinical outcomes of those infected with the novel coronavirus. The study, published in the journal Future Medicine, **evaluated 299 patients diagnosed with Covid-19** admitted to the George Washington University (GW) Hospital between March 12 and May 9, 2020.

What

1. It revealed that 200 of the patients had all five biomarker molecules being evaluated -- **IL-6, D-dimer, CRP, LDH and ferritin.**
2. According to the researchers, including those from GW, elevated levels of these biomarkers were associated with inflammation and bleeding disorder, showing an independent increased risk for admission in the **Intensive Care Unit (ICU), invasive ventilatory support** and death.
3. They said the highest odds of death occurred when levels of the **molecule LDH** was greater than 1200 units per litre, and the **D-dimer level was greater than three micrograms per millilitre.**
4. Laboratory markers of inflammation and coagulopathy can help clinicians identify patients who are at high risk for clinical deterioration in Covid-19, the scientists concluded in the study.
5. Currently, the scientists said doctors determine risk for Covid-19 deterioration and death based on age and certain underlying medical conditions, like having a compromised immune system, obesity, and heart disease.
6. A simple blood test for patients admitted to the ICU, and also making decisions based on the biomarkers present, may further aid point-of-care clinical decision making.

HELIUM ENHANCED COOL BRIGHT STARS

Scientists at Indian Institute of Astrophysics (IIA) which is an autonomous institute of Department of Science & Technology (DST), have **studied stars of Omega Centauri globular cluster** and found some **Helium (He)-enhanced cool bright stars** that are present among the **metal-rich sample of the cluster.** According to the Ministry of Science and Technology, **this is the first time He abundance has been found in Omega Centauri** and the work has been published in 'The Astrophysical Journal'.

What

1. It is to note that the **globular clusters are stellar systems consisting of millions of stars** that are formed from a **gaseous cloud.**
2. This implies that **stars present in this cluster are homogeneous in their chemical composition of elemental form.** However, some clusters deviate from this norm. One of the examples is the largest and brightest globular cluster in the Milky Way is **Omega Centauri.**
3. The government report stated that the different stars of Omega Centauri are not made

- of the same metal content which is also an indicator of its age.
4. With the anomalous elemental abundances, the formation of these are at times different from normal. To be sure, the abundances are made on the back of an assumption that **“He is one-tenth of the H-abundance.”**
 5. Further, the ministry added that this is the **first spectroscopic determination of He-abundance in Omega Centauri.**
 6. According to the report, the study is important as it gives a **clue for He-enhanced population origin.** A team of scientists at IIA studied the spectrum by using low-resolution spectra which had been obtained from the **Optometric Medium Resolution Spectrograph (OMRS)** installed with the **Vainu Bappu Telescope**, Vainu Bappu Observatory, Kavalur, India and identified the **mild Helium and Helium enhanced stars.**
 7. Moreover, in order to measure the amount of He that is present in the identified bright/ cool stars of Omega Centauri, the scientists used a high-resolution spectra that has been obtained from the **Southern African Large Telescope (SALT).**

SPACE BRICKS

The **Indian Institute of Science (IISc)** on 14 August 2020 said that in what could be a significant **step forward in space exploration**, a team of its researchers and the **Indian Space Research Organisation (Isro)** has developed a sustainable process for making **brick-like structures on the Moon.** This project began as early as on January 30, 2020.

What

1. **It exploits lunar soil**, and **uses bacteria and guar beans to consolidate the soil into possible load-bearing structures.**
2. These **“space bricks”** could eventually be used to assemble structures for habitation on the moon’s surface, the researchers suggest.
3. It is really exciting because it brings **two different fields — biology and mechanical engineering —** together.
4. **Space exploration has grown exponentially in the last century.** With Earth's resources dwindling rapidly, scientists have only intensified their efforts to inhabit the moon and possibly other planets.
5. The cost of sending one pound of material to **outer space is about Rs 7.5 lakh.** The process developed by the IISc and Isro team uses urea — which can be **sourced from human urine —** and **lunar soil as raw materials for construction on the moon's surface.** This decreases the overall expenditure considerably.
6. The process also has a **lower carbon footprint** because it uses **guar gum instead of cement for support.** This could also be exploited to make sustainable bricks on Earth, IISc said in a statement.
7. Some microorganisms can produce minerals through metabolic pathways. One such bacterium, called **Sporosarcina pasteurii**, produces **calcium carbonate crystals** through a metabolic pathway called the **ureolytic cycle:** it uses urea and calcium to form these crystals as byproducts of the pathway.
8. Living organisms have been involved in such mineral precipitation since the dawn of the Cambrian period, and modern science has now found a use for them.

9. To exploit this ability, Kumar and colleagues teamed up with Isro's Arjun Dey and I Venugopal. They **first mixed the bacteria with a simulant of lunar soil**, then **added urea and calcium sources along with gum extracted from locally-sourced guar beans**.
10. The guar gum was added to increase the strength of the material by serving as a scaffold for carbonate precipitation. The final product obtained after a few days of incubation was found to possess significant strength and machinability.
11. Our material could be fabricated into any freeform shape using a simple lathe. This is advantageous because this completely circumvents the need for specialised moulds – a common problem when trying to make a variety of shapes by casting.
12. This capability could also be exploited to make intricate interlocking structures for construction on the moon, without the need for additional fastening mechanisms.

MARS TEST ROCKET MAKES 1ST FLIGHT

SpaceX launched a prototype of its Mars rocketship hundreds of feet into the air, then **landed it upright in a successful test flight**. The flight lasted barely 45 seconds and reached just 500 feet (150 meters) on 4 August night at the **southeastern tip of Texas near Brownsville**, but was an important **first for SpaceX's Starship**. Some earlier tests ended in explosions on the pad.

What

1. The **private company plans to launch reusable Starships** atop still-in-the-works rockets, carrying cargo or crew not only to **low-Earth orbit but also the moon** and **Musk's most desirable destination, Mars**. The entire stack will stretch nearly 400 feet (120 meters).
2. **Starship designed by SpaceX**, it is a **spacecraft and super-heavy booster rocket** meant to act as a **reusable transportation system** for crew and cargo to the Earth's orbit, Moon and Mars.
3. **SpaceX has described Starship as "the world's most powerful launch vehicle"** with an ability to carry over 100 metric tonnes to the Earth's orbit.
4. **Starship has been under development since 2012** and is a **part of Space X's central mission to make interplanetary travel accessible and affordable** and to become the **first private company to do so**.
5. Therefore, the company is working on building a fleet of reusable launch vehicles, capable of carrying humans to Mars and other destinations in the solar system.
6. On August 4, **just two days after SpaceX's Crew Dragon capsule landed in the Gulf of Mexico**, a prototype of the company's uncrewed "Mars ship", a stainless steel test vehicle **called SN5**, and which is a part of the Starship spacecraft, successfully flew to an altitude of over 500 feet for a little less than 60 seconds.
7. The test flight was carried out at Boca Chica in Southern Texas, SpaceX's commercial launch site designed for orbital missions.

WEIRD SHAPE OF OUR SOLAR SYSTEM

National Aeronautics and Space Administration (NASA) scientists have developed a **new prediction about the shape of the bubble that surrounds our solar system**. This has been **made possible after the data collected from a model** that was **developed using**

various NASA missions. Earlier, scientists thought that the shape of our **heliosphere** that travels through space as it orbits around the centre of the galaxy is similar to that of a comet with a round leading edge with a **long tail trailing behind**. The scientists have not been **able to figure out the shape of our solar system's heliosphere** because its closest edge is more than ten billion miles from Earth. With the **help of two Voyager spacecraft**, they have been able to measure this region.

What

1. **To study our boundary to the interstellar space**, astronomers have been capturing and observing particles flying toward our planet.
2. **Galactic cosmic rays**, the charged particles that come from different parts of the galaxy along with existing ones help scientists study the boundary of our galaxy as they travel out towards the heliosphere and are bounced back by a series of electromagnetic processes.
3. Under **NASA's Interstellar Boundary Explorer (IBEX)**, scientists use these particles as radar to know our boundary to interstellar space.
4. There are **two fluids mixed together**. You have one component that is very cold and one component that is much hotter, the pick-up ions, said Opher, a professor of astronomy at Boston University.
5. **If you have some cold fluid and hot fluid**, and you put them in space, they won't mix — they will evolve mostly separately. What we did was separate these two components of the solar wind and model the resulting **3D shape of the heliosphere**.

What is heliosphere?

1. The **Heliosphere acts like a shield to our solar system** that **guards us against the rest of the galaxy** from particles shot after a **supernova** (a powerful and luminous stellar explosion). However, **it can't absorb all of the radiations** and lets a quarter of these galactic rays into our solar system.
2. The particles that break through our heliosphere are still dangerous but our planet is protected by its magnetic field and atmosphere.
3. That's why there is a need to understand our heliosphere which will be a major breakthrough in future space exploration.