

# My Notes....

## NATIONAL

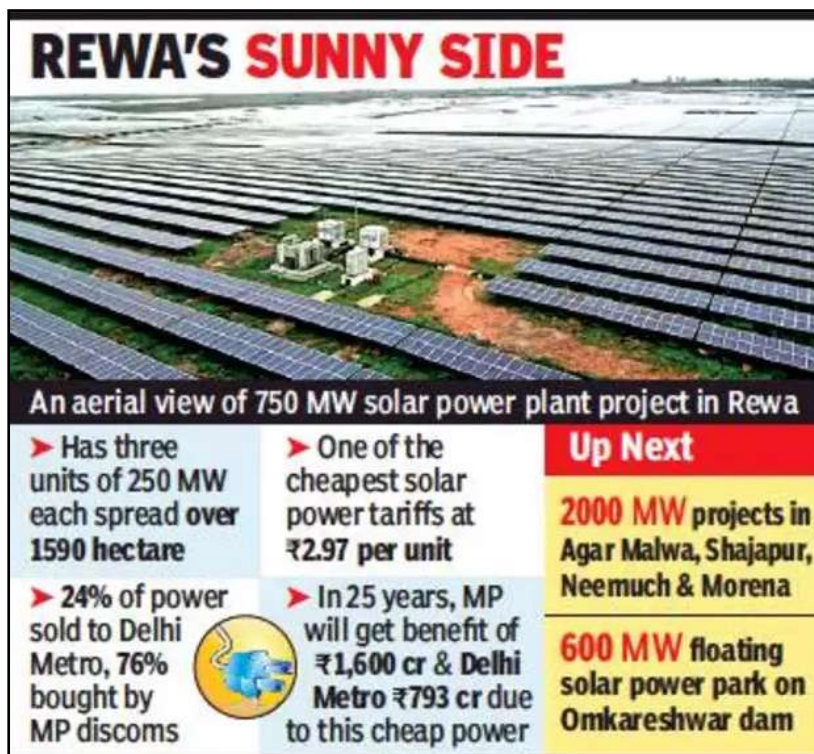
### ASIA'S LARGEST SOLAR PROJECT

Prime Minister on 10 July 2020 inaugurated **Asia's largest 750 MW solar power project** at **Rewa in Madhya Pradesh**, saying the plant will help the state's poor. **This mega solar power project** comprises **three solar generating units of 250 MW** each located on a **500-hectare plot of land** situated inside a solar park. Central financial assistance of Rs 138 crore has been provided to **Rewa Ultra Mega Solar Limited (RUMSL)** for the development of the solar park.

#### What

1. With **this solar plant at Rewa**, the industries here will not only get electricity, but even **Delhi Metro will get its benefits**. Apart from Rewa, work is underway on solar power plants in **Shajapur, Neemuch and Chhatarpur**.
2. The project is **aimed at reducing carbon emission equivalent to approximately 15 lakh tonnes of CO2 per year**, according to a PMO (Prime Minister's office) statement.

3. **It is the first renewable energy project to supply institutional customers outside the state**, including Delhi Metro, which will get 24 per cent of energy from the project. The remaining **76 per cent is being supplied to the state distribution companies** of Madhya Pradesh.



**REWA'S SUNNY SIDE**

An aerial view of 750 MW solar power plant project in Rewa

<ul style="list-style-type: none"> <li>➤ Has three units of 250 MW each spread over 1590 hectare</li> <li>➤ 24% of power sold to Delhi Metro, 76% bought by MP discoms</li> </ul>	<ul style="list-style-type: none"> <li>➤ One of the cheapest solar power tariffs at ₹2.97 per unit</li> <li>➤ In 25 years, MP will get benefit of ₹1,600 cr &amp; Delhi Metro ₹793 cr due to this cheap power</li> </ul>	<p><b>Up Next</b></p> <ul style="list-style-type: none"> <li><b>2000 MW</b> projects in Agar Malwa, Shajapur, Neemuch &amp; Morena</li> <li><b>600 MW</b> floating solar power park on Omkareshwar dam</li> </ul>
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4. It also exemplifies India's commitment to attaining the **target of gigawatt (GW) of installed renewable energy capacity by the year 2022**, including **100 GW of solar installed capacity**, the PMO statement noted.
5. This is apparently the first solar project in the country to break the "**grid parity barrier**".
6. **The solar park was developed by the Rewa Ultra Mega Solar Ltd (RUMSL)**, a joint venture of **Madhya Pradesh Urja Vikas Nigam Ltd** and Solar Energy Corporation of India, a central undertaking.
7. After the park was developed, **Mahindra Renewables Private Ltd, ACME Jaipur**

- Solar Power Pvt Ltd**, and **Arinsun Clean Energy Pvt Ltd** were selected by **RUMSL** through reverse auction for developing three solar generating units of 250 MW each inside the solar park.
- For its innovation and excellence, the Rewa Solar Power project has received the **World Bank Group President's Award**.
  - The project was also included in the PM's "**A Book of Innovation: New Beginnings**".

## PADMANABHASWAMY TEMPLE VERDICT

The **Supreme Court** on 13 July 2020 **upheld the rights of the Travancore royal family** in the **administration of the historic Sree Padmanabhaswamy Temple in Kerala**, setting aside the **2011 verdict of the Kerala High Court** which had directed the state government to set up a trust to take control of management and assets of the temple deemed as richest temple in the world. A bench **headed by Justice UU Lalit** said that as an interim measure, **the District Judge of Thiruvananthapuram will head an administrative committee to manage the affairs of the temple**.

### What

- The top court delivered the verdict on a batch of appeals**, including the one filed by the legal representatives of the Travancore royal family, **challenging the January 31, 2011 verdict of the high court** in the matter.
- The SC bench had heard final arguments for nearly three months before reserving the verdict on April 10 last year.
- In 2011, the SC had stayed the HC direction to the state government to take over the assets and management of the temple** from the royal family-governed trust.
- On that day **nine years ago**, the SC had also directed preparation of an inventory of articles/valuables/ornaments/precious stones in **kallara (vault) A to F**, but had later clarified that **kallara B would not be opened without express orders of the apex court**.
- For the past nine years, the administrative committee headed by the District Judge had been managing the affairs of the temple on Supreme Court orders and will continue it as an interim measure, as per apex court's verdict on 13 July 2020.
- The sprawling temple, an architectural splendour in granite, was **rebuilt in its present form in the 18th century by the Travancore Royal House** which had ruled southern Kerala and some adjoining parts of Tamil Nadu before integration of the princely state with the Indian Union in 1947.

### CHRONOLOGY OF EVENTS

- 2009: PIL in HC seeking transfer of control of temple to the State
- 2011: HC orders State to take over the temple's control
- 2012: SC appoints Senior Advocate Gopal Subramaniam as an amicus curiae. He submits report
- 2014: Royal family questions report, files objections before SC
- 2020: SC reserves verdict on pleas challenging judgement of the Kerala HC and upholds decision on July 13

### What is the case?

- The central legal question was whether **Utradam Thirunal Marthanda Varma**, the **younger brother of Chithira Thirunal Balarama Varma**, the **last Ruler of**

- Travancore**, could claim to be the “**Ruler of Travancore**” after the **death of the ruler in 1991**.
2. The court examined this claim within the limited meaning of that term according to the **Travancore-Cochin Hindu Religious Institutions Act, 1950** to claim ownership, control and management of the ancient **Sree Padmanabha Swamy Temple**.
  3. All the temples which were under the control and management of the **erstwhile Princely States of Travancore and Cochin** were under the **control of the Travancore and Cochin Devaswom Boards before 1947**.
  4. However, as per the **Instrument of Accession** signed between the princely states and the Government of India, since 1949, the administration of the Padmanabhaswamy Temple was “**vested in trust**” in the Ruler of Travancore.
  5. The **state of Kerala was carved out in 1956** but the temple continued to be managed by the erstwhile royals.
  6. **In 1971, privy purses to the former royals were abolished** through a constitutional amendment stripping their entitlements and privileges.
  7. **The move was upheld in court in 1993** and the last ruler of Travancore who died during the pendency of this case continued to manage the affairs of the temple till then.
  8. **In 1991**, when the last ruler’s brother took over the temple management, it created a furore among devotees who moved the courts leading to a long-drawn legal battle.
  9. The government joined in; supporting the claims of the petitioner that **Marthanda Varma had no legal right to claim the control or management of the temple**.

## 'PRAGYATA' ANNOUNCED

The **HRD ministry** on 14 July 2020 announced **guidelines for online classes by schools** and **recommended a cap on duration and the number of sessions** in a day for students. The **guidelines have been framed by the ministry**, following concerns raised by parents about schools conducting online classes like regular schools, which has increased children's screen time after the COVID-19 pandemic mandated a shift from classroom teaching to online learning as schools continue to remain shut for over four months.

### What

1. In the guideline called “**Pragyata**”, the Ministry of Human Resource Development (MHRD) has recommended that the **duration for online classes for pre-primary students should not be for more than 30 minutes**.
2. **For classes 1 to 8**, the HRD ministry has recommended **two online sessions of up to 45 minutes** each while **for classes to 9 to 12, four sessions of 30-45 minutes** duration have been recommended.
3. The COVID-19 pandemic has led to closure of schools and has impacted over 240 million children of the country who are enrolled in schools. Extended school closures may cause loss of learning.
4. To mitigate the impact of the pandemic, **schools will not only have to remodel and reimagine the way teaching and learning have happened so far**, but will also need to introduce a suitable method of delivering quality education through a healthy mix of schooling at home and schooling at school, HRD minister said.

5. The guidelines have been developed from the perspective of learners, with a **focus on online, blended, digital education for students** who are presently at home due to the lockdown.
6. These guidelines on digital education **provide a roadmap or pointers for carrying forward online education** to enhance the quality of education.
7. Universities and schools across the country have been shut since March 16, when the Centre announced a countrywide classroom shutdown as part of measures to contain the COVID-19 outbreak.
8. A nationwide lockdown was announced on March 24, which came into effect the next day. While the government has largely eased restrictions, schools and colleges continue to remain closed.

Class	Recommendation
Pre Primary	On a given day for interacting with parents and guiding them, not more than 30 minutes.
Classes 1 to 12	Recommended to adopt/adapt the alternative academic calendar of NCERT at <a href="http://ncert.nic.in/aac.html">http://ncert.nic.in/aac.html</a>
Classes 1 to 8	Online synchronous learning may be undertaken for not more than two sessions of 30-45 minutes each on the days the States/UTs decide to have online classes for primary sections
Classes 9 to 12	Online synchronous learning may be undertaken for not more than four sessions of 30-45 minutes on each of the days as decided by States/UTs.

## FIRST STATE TO START E-LOK ADALATS

**Chhattisgarh High Court and Legal services Authority pioneered e-Lok Adalats** in the state during the lockdown time and through video conferencing facilities amicably settled over 2,200 cases many of which were **more than five years**. Chief Justice P R Rajendra Menon and State Legal services Authority chairman Justice Prashant K Mishra said **this was an attempt to reach the judges and justice delivery system to the doorsteps of litigants**, who could not approach the court because of the pandemic caused lockdown.

### What

- In an unique attempt, **litigants were connected from their homes to concerned district and tehsil courts** as well as to the High Court which took up 156 cases and settled 155 of them.
- All courts in 23 districts, from Bastar and Dantewada to Raipur**, were connected through video conferencing systems to litigants.
- Raipur saw the highest 515 of 848 cases getting settled. It was followed by Durg where 293 cases of 300 got settled. But, **Dantewada was the only district where none of the 12 cases listed could be resolved**.
- Justice Mishra, the brain behind the e-Lok Adalat**, said he had received guidance from **National Legal Services Authority chairman Justice N V Ramana** and put the proposal of virtual Lok Adalats during the lockdown period before Justice Menon.
- We decided to take the court to the doorsteps of litigants who were eager to settle their disputes. The HC's computer committee and other Judges as well as all district judges

- cooperated to make the pioneering effort of **e-Lok Adalat a success**.
6. There will be **live streaming of an e-Lok Adalat** to be inaugurated by the high court Chief Justice P R Ramchandra Menon.
  7. In the wake of the financial crisis faced by the people and the lawyers owing to the coronavirus pandemic, the high court and Chhattisgarh State Legal Services Authority decided to organise e-Lok Adalat for resolving the pending cases.

#### Flashback

1. **National Legal Services Authority (NALSA)** along with other Legal Services Institutions conducts **Lok Adalats**.
2. **Lok Adalat is one of the alternative dispute redressal mechanisms**, it is a forum where disputes/cases pending in the court of law or at pre-litigation stage are settled/ compromised amicably.
3. Lok Adalats have been given statutory status under the **Legal Services Authorities Act, 1987**.
4. Under the said Act, **the award (decision) made by the Lok Adalats is deemed to be a decree of a civil court and is final** and binding on all parties and no appeal against such an award lies before any court of law.
5. If the parties are not satisfied with the award of the Lok Adalat though **there is no provision for an appeal against such an award**, but they are free to initiate litigation by approaching the court of appropriate jurisdiction by filing a case by following the required procedure, in exercise of their right to litigate.

## MASKS & HAND SANITIZER OUT OF ESSENTIAL COMMODITIES LIST

The **Essential Commodities Act**, which empowers the government to fix price and cap on stock of essential consumer items, is **no more applicable on masks and hand sanitisers**. The consumer affairs ministry has not extended the applicability of the law to these two items. The **notification ended on June 30**. This has been done considering **there is surplus supply of these items** and the government has also allowed their exports.

#### What

1. In March the government had included these **two items under the EC Act till June 30** and the pharmaceutical pricing regulator had asked states to ensure there was no black marketing or hoarding of such products.
2. This was done amid reports of the two commodities flying off the shelf and the prices were also exorbitant in several cases.
3. The notification as essential commodities will **ensure crackdown on selling of any of the listed items above the maximum retail price (MRP)** or hoarding them.
4. The Centre has power to include or delete any item from the essential commodities list.
5. There is no specific definition of **essential commodities in The EC Act**.

6. **Section 2(A)** of the act states that an “**essential commodity**” means a commodity specified in the “**Schedule**” of this Act.

7. The Act gives powers to the central government to add or remove a commodity in the “Schedule.”

8. The Centre, if it is satisfied that it is necessary to do so in public interest, can notify an item as essential, in consultation with state governments.

At present: Only 7 broad categories

- Drugs;
- Fertilizer, inorganic, organic or mixed;
- Foodstuffs, including edible oilseeds and oils;
- Hank yarn made wholly from cotton;
- Petroleum and petroleum products;
- Raw jute and jute textile;
- Seeds:
  - (i) seeds of food-crops and seeds of fruits and vegetables;
  - (ii) seeds of cattle fodder; and
  - (iii) jute seeds. Recently cotton seed was also included in the list

## OPERATION SAMUDRA SETU COMPLETED

The **Operation Samudra Setu**, which was launched by **the Indian Navy** on May 5 as part of the national effort to repatriate Indian citizens from overseas by sea during the Covid-19 pandemic has been completed. **3,992 Indian citizens have been brought back to their homeland by sea**. Indian Naval Ships **Jalashwa** (Landing Platform Dock), **Airavat, Shardul and Magar** (Landing Ship Tanks) have participated in the operation which lasted over 55 days traversing more than 23,000 kilometers.

### What

1. The **Covid-19 pandemic** has had a significant impact on ships and seafarers due to the compact environment and forced ventilation systems onboard ships.
2. It was in these **trying times and difficult conditions** that the Indian Navy took up the challenge to evacuate our distressed citizens from overseas.
3. The Navy has previously undertaken similar evacuation operations as part of **Operation Sukoon in 2006 (Beirut)** and **Operation Rahat in 2015 (Yemen)**.
4. The greatest challenge for the Indian Navy was to avoid any incident of outbreak of infection onboard the ships during the evacuation operation.
5. **Rigorous measures were planned and medical/ safety protocols** unique to the operating environment of ships were implemented.
6. These were strictly followed onboard the ships undertaking **Op Samudra Setu** resulting in the safe return of 3,992 of our citizens to their homeland.
7. Ships used for the operation were specially provisioned and the Sick Bay or the clinic onboard was especially equipped with **Covid-19 related equipment and facilities**.
8. Women Officers and military nursing staff were also embarked for the women passengers. Basic amenities and medical facilities were provided to all evacuees during sea passage on these ships.

## DRAFT WAGE RULES NOTIFIED

The labour ministry has notified **the draft wage rules under the Labour Code on Wages**, paving way for an **eight hour working day in factories and establishments**, conflicting the recent move by at least a dozen state governments to enhance the work hours in factories to either 10 or 12 hours. While the draft rules have left it to the **technical committee to determine minimum wages in the country**, there is **no clarity on the criteria for determining the national floor level statutory minimum wage** for the country.

### What

1. The normal working day under clause (a) of sub-section (1) of section 13 shall be **comprised of eight hours of work and one or more intervals of rest** which in total shall not exceed one hour, labour ministry has said in the draft rules called **the Code on Wages (Central) Rules, 2020**.
2. Nearly 12 states including **Gujarat, Madhya Pradesh, Uttar Pradesh, Rajasthan, Himachal Pradesh, Karnataka and Punjab** among others have raised the work hours for labourers to address the issue of labour shortage and ensure social distancing at the work site through notifications under the Factories Act, which is being proposed to be subsumed under the code on occupational safety.
3. The draft rules have also proposed the country be divided into **three geographic categories – metropolitan area with a population of 40 lakh or more, non-metropolitan area with a population of 10-40 lakh and rural areas** – to set the minimum wage.
4. Besides, it has classified expenditure limits across different heads based on which the minimum wage will be calculated.
5. For instance, **10% of minimum wage has to be spent on house rent** while the expenditure on fuel, electricity and miscellaneous items will constitute 20% of the minimum wage and that on education, health and other contingencies would constitute 25% of the minimum wage.
6. While calculating the wage, an intake of 2,700 calories per day and 66 metres of clothing per annum for a standard family will be taken into account.
7. It is absolutely disappointing that the Rules have failed to describe the exact criteria for determining the national floor level minimum wage, which is very critical for workers.
8. An internal panel of the labour ministry had said in its report last year that **“the single value of the national minimum wage for India should be set at Rs 375 per day** as of July 2018.
9. In addition to **the minimum monthly wage of Rs 9,750**, the seven-member panel had also suggested that a **housing allowance of Rs 1,430** should be provided for city-based workers.

## DRAFT AIDS TO NAVIGATION BILL 2020

To replace an over nine decades old law governing lighthouses, the shipping ministry has **issued a draft Aids to Navigation Bill, 2020** seeking suggestions from stakeholders and general public, an official statement said on 10 July 2020. The draft bill **aims at repealing the colonial Lighthouse Act, 1927**, and provides for **empowering**

**the Directorate General of Lighthouses and Lightships (DGLL) with additional power and functions.** In accordance with Prime Minister Narendra Modi's vision for augmenting people's participation and transparency in the governance, the "Ministry of Shipping has issued the **draft of Aids to Navigation Bill, 2020** for suggestions from the stakeholders and general public, the ministry said in the statement.

#### What

1. The draft bill proposes **to incorporate the global best practices**, technological developments and **India's international obligations in the field of marine navigation.**
2. This initiative is **part of the proactive approach adopted by the Ministry of Shipping by repealing archaic colonial laws** and replacing them with modern and contemporary needs of the maritime industry.
3. The bill aims **to regulate state-of-the-art technologies of marine navigation**, which earlier used to get tangled up in statutory provisions of the **Lighthouse Act, 1927.**
4. The draft bill **provides for empowering the DGLL with additional power and functions** such as vessel traffic service, wreck flagging, training and certification, implementation of other obligations under international conventions where India is a signatory.
5. It also **provides for identification and development of heritage lighthouses.**
6. The draft bill **comprises a new schedule of offences, along with commensurate penalties** for obstructing and damaging the aids to navigation, and non-compliance with directives issued by the central government and other bodies under the draft bill.
7. With the advent of modern technologically improved aids to maritime navigation, the role of authorities regulating and operating maritime navigation has changed drastically. The new law encompasses a major shift from lighthouses to modern aids of navigation.

## INTERNATIONAL

### IRAN DROPPED INDIA FROM CHABAHAR PORT RAIL PROJECT

The **Iranian government had decided to drop India from the project to construct a rail line from Chabahar port** to Zahaden along the border with Afghanistan, and proceed on its own, citing delays from the Indian side in funding and starting the project. "**Iranian Railways will proceed without India's assistance**, using approximately \$400 million from the Iranian National Development Fund," said the report. The Indian government has, however, denied the report.

#### What is this project?

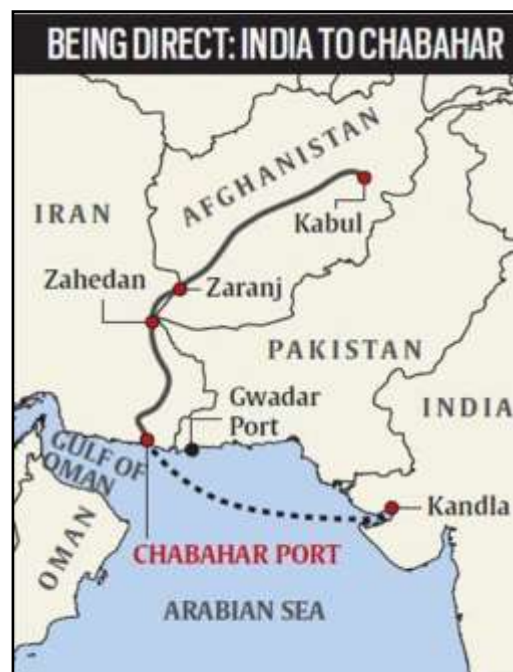
1. **India had signed an agreement with Iran to construct a rail line from Chabahar port to Zahedan**, along the border with Afghanistan, **four years ago.**
2. The **Chabahar port -- being jointly developed by India, Iran and Afghanistan.** The three countries consider the port, located on the Indian Ocean in the **Sistan and Baluchistan province of Iran**, a gateway to opportunities for trade with central Asian nations.
3. Easily accessible from India's western coast, the **Chabahar port is increasingly seen as a counter to Pakistan's Gwadar Port**, which is being developed with Chinese



investment.

### Trilateral agreement

1. The **railway project**, which was being discussed between the **Iranian Railways and the state-owned Indian Railways Construction Ltd (IRCON)**, was meant to be part of India's commitment to the **trilateral agreement** between India, Iran and Afghanistan to build an **alternate trade route to Afghanistan and Central Asia**.
2. **In May 2016**, during Prime Minister Narendra Modi's visit to Tehran to **sign the Chabahar agreement** with Iranian President Rouhani and Afghanistan President Ghani, IRCON had signed an MoU with the Iranian Rail Ministry.
3. The MoU was to construct the **Chabahar-Zahedan railway** as "part of transit and transportation corridor in trilateral agreement between India, Iran and Afghanistan". IRCON had promised to provide all services, superstructure work and financing for the project (around \$1.6 billion).
4. However, despite several site visits by IRCON engineers, and preparations by Iranian railways, India never began the work, ostensibly due to worries that these could attract U.S. sanctions.
5. **The U.S. had provided a sanctions waiver for the Chabahar port and the rail line to Zahedan**, but it has been difficult to find equipment suppliers and partners due to worries they could be targeted by the U.S. India has already "zeroed out" its oil imports from Iran due to U.S. sanctions.



### HAGIA SOPHIA RETURN AS MOSQUE

**Turkey's highest administrative court** issued a ruling on 10 July 2020 that **paves the way for the government to convert Istanbul's iconic Hagia Sophia** – a former cathedral-turned-mosque that now serves as a museum – **back into a Muslim house of worship**. The Council of State threw its weight behind a petition brought by a religious group and **annulled a 1934 cabinet decision** that changed the 6th century building into a museum. The **ruling allows the government to restore the Hagia Sophia's previous status as a mosque**.

#### What

1. The decision was in line with the Turkish president's calls to turn the **hugely symbolic world heritage site** into a mosque despite widespread international criticism, including from the United States and Orthodox Christian leaders.
2. The decision could deepen tensions with neighbouring Greece, which also called on Turkey to maintain the structure's status as a museum.
3. The religious group had contested the legality of the **1934 decision** by the modern Turkish republic's secular government ministers and argued that the building was the

personal property of Ottoman Sultan Mehmet II, who conquered Istanbul in 1453.

### What is the Hagia Sophia?

1. The construction of this **iconic structure in Istanbul started in 532 AD during the reign of Justinian I**, the ruler of the Byzantine Empire, when the city was known as **Constantinople**.
2. The structure was **originally built to become the seat of the Patriarch of the Eastern Orthodox Church** and remained so for approximately 900 years.
3. In 1453, when Constantinople fell to **Sultan Mehmet II's Ottoman forces**, the Hagia Sophia was ransacked by the invading forces and turned into a mosque shortly after.
4. The structure of the monument was then subjected to several interior and exterior changes where **Orthodox symbols** were removed or plastered upon and minarets were added to the exterior of the structure. For a long time, **the Hagia Sophia was Istanbul's most important mosque**.
5. In 1934, Ataturk ordered that the **Hagia Sophia be converted into a museum**. It opened to the public in 1935.

## INDIA-EUROPE SUMMIT

**A high-level ministerial dialogue** to boost **trade and investment relations**, commitment to remove trade hurdles and expand market access, and beef up security cooperation are part of the new broad-based strategic partnership **adopted between India and the European Union (EU)** on 15 July 2020. The **regular dialogue on trade** is expected to pave the way for '**balanced, ambitious and mutually-beneficial trade and investment agreements**', going forward. Both sides also adopted a **policy to enhance bilateral market access**. The summit also saw the two sides agreeing to optimally use the **Investment Facilitation Mechanism (IFM) established in 2017** to promote inbound investments from the EU.

### What

1. The **Strategic Partnership objectives are set to guide ties between India and the bloc over the next 5 years** and formed a key part of the announcements at the **15th India-EU Summit**.
2. Calling the EU a natural partner for India, Prime Minister Narendra Modi has said that a partnership between the two nations was required for maintaining global peace and stability.
3. In the wake of the Covid-19 pandemic, **new economic challenges have emerged on a global scale** and more cooperation between democratic nations was the need of the hour.
4. Pressures on the rules based international order can also be relieved through economic and human-centric development brought forward by the partnership.
5. **Both sides also committed to continuing the regulatory dialogue on pharmaceuticals** and medical devices that will align products with international standards and remove the quality barriers to export of pharmaceutical active ingredients and medicine exports, a key Indian demand.
6. **Obstacles related to sanitary and phytosanitary (SPS) measures and technical barriers to trade (TBT)** will also be regularly flagged and reduced, both governments

said.

7. This was accompanied by a series of other commitments to speed up cooperation on agricultural and marine trade, reduce customs hassles, protect intellectual property and geographical indicators, and foster cooperation between small businesses and startups.
8. In the **security space, closer military ties** have been pushed with a focus on establishing regular security consultations that will exchange information on strategic priorities, security issues, crisis management and peacekeeping.
9. Early conclusion and implementation of a working arrangement between Europol and the **Central Bureau of Investigation (CBI)** has also been agreed upon.
10. Significantly, both sides have pushed for more convergence between the regulatory frameworks governing cross border data flows and privacy issues.
11. Also, both have pushed to 'make utmost efforts towards reaching an agreement on taxation of the digital economy,' with widespread consequences for internet giants like Google.

#### Key announcements

1. **Defence** : Establishing maritime security dialogue, deeper cooperation between both navies
2. **Economic diplomacy** : Engaging jointly in defending multilateralism at WTO
3. **Climate change** : More focus on fast reducing greenhouse gas emissions
4. **Energy** : Cooperation on integrating renewable energy through smart grids, more adoption of smart vehicles

## ECONOMY

### MORATORIUM ON DUTIES ON E-COMMERCE

India has asked the WTO members to "urgently" reconsider the continuation of the moratorium on customs duties on e-commerce trade as the coronavirus pandemic has demonstrated the importance of retaining the flexibility to regulate such imports. The e-commerce moratorium is nothing **short of duty-free, quota-free' access** to digital products of the **digitally industrialized members by the rest of the membership**, according to the statements delivered by Ambassador and Permanent Representative of India to the WTO at informal open-ended meeting of the General Council on Work Programme of Electronic Commerce held on 14 July 2020.

#### What

1. In short, the **Covid-19 pandemic has demonstrated the importance of retaining** the flexibility to regulate imports of electronic transmissions and levy customs duties on their imports by the governments. Therefore, the continuation of the moratorium must be urgently reconsidered by the membership.
2. **India is witnessing an exponential rise in imports of electronic transmissions**, mainly of items like **movies, music, video games and printed matter** some of which could fall within the scope of the moratorium.
3. While the profits and revenues of digital players are rising steadily, **the ability of the governments to check these imports and generate additional tariff revenues** is

- being severely limited because of the moratorium on e-commerce.
4. According to **industry experts, India wants an end to the moratorium and imposition of import duties** to protect domestic industry and revenue.
  5. **Since 1998, the moratorium has been extended time and again for two years.** It was last extended by the General Council held in December 2019 until the 12th Ministerial Conference, the highest decision making body of the WTO.
  6. It also said that if the scope of the moratorium **includes digitised and digitizable goods**, its implications are "**very serious**" as technological developments have resulted in a rapid rise in the growth of online trade of digitized goods.
  7. **Non-availability of the use of tariffs for digitized goods** as a result of the moratorium therefore poses very profound challenges for developing countries.
  8. **Allowing the moratorium to lapse is important for developing countries** to preserve policy space for their digital advancement and provide a level playing field to budding domestic producers of intangible goods, which is extremely critical for employment generation and income creation.
  9. It also said that **the requirement of new sources of revenue to save lives** and livelihood during the ongoing Covid 19 pandemic especially in developing countries including LDCs, when millions of their citizens are being pushed into extreme poverty, also underlines the need for ending the e-commerce moratorium.
  10. To the contrary, the unbridled and unchecked imports via electronic transmissions are increasing due to the existing moratorium due to the extended lockdowns as fallout of the pandemic, resulting in imbalances in importing Members' current accounts.

## SCIENCE AND TECHNOLOGY

### INDIGENOUSLY DEVELOPED COVID-19 VACCINE

India's top drug regulator, the **Central Drugs Standard Control Organisation**, has allowed **Bharat Biotech India (BBIL)** to conduct human clinical trials for '**Covaxin**', making it the **first indigenously developed Covid-19 vaccine** candidate to receive this approval, the firm said. **These trials are scheduled to start across India in July. Covaxin is a vaccine candidate developed by BBIL** against the **novel coronavirus (Covid-19)** in collaboration with the **Indian Council of Medical Research's National Institute of Virology (NIV)**.

#### What

1. As part of this collaboration, **NIV isolated a strain of the virus from an asymptomatic Covid-19 patient and transferred it to BBIL early in May.**
2. The firm then used it to work on developing an "**inactivated**" vaccine—a vaccine that uses the dead virus—at its high containment facility in Hyderabad.
3. **Once the vaccine is injected into a human**, it has no potential to infect or replicate, since it is a killed virus.
4. **It just serves the immune system as a dead virus and mounts an antibody response towards the virus**, said the company, adding that inactivated vaccines usually have a better safety record.

5. BBIL's Covaxin then underwent pre-clinical testing, which is when the vaccine is tested on animals like **guinea pigs and mice** to see if it is safe, before the firm approached CDSCO for approvals to move on to the next stage of testing–human trials.
6. The **Drug Controller General of India**, who heads CDSCO, has given **Bharat Biotech approvals** to begin testing its vaccines on humans through **phase I and II clinical trials**.
7. This brings India a step closer to finalising a domestically developed Covid-19 vaccine for its population—a positive sign at a time when the country's cases continue to surge, especially in the national capital.
8. The **first phase, usually conducted on a small group of individuals**, tries to find what dosage of the vaccine is safe for use, whether it is effective in building their immunity to the virus and whether there are any side effects.
9. The **second phase is conducted on a larger group comprising hundreds of persons** fitting the description of those for whom the vaccine is intended using characteristics like age and sex. This phase tests how effective the vaccine is on the population group being studied.

## FIRST INDIGENOUS PNEUMONIA VACCINE

**India has got its first locally developed pneumonia vaccine**, reducing its dependence on imports for immunization against a disease that contributes to most deaths in children under five years of age. The **Drugs Controller General of India (DCGI)** on 14 July 2020 approved **Pneumococcal Polysaccharide Conjugate Vaccine developed by Serum Institute of India**. The Pune based company can now manufacture the vaccine in India for use.

### What

1. **This vaccine is used for active immunization against invasive disease** and pneumonia caused by "**Streptococcus pneumonia**" in infants.
2. India accounted for the **second highest number of deaths in under-five children in 2018 because of pneumonia**. According to Unicef, **India reported 1,27,000 under five deaths due to pneumonia in 2018**.
3. Earlier, the demand of this vaccine was met substantially by licensed importers in the country since the manufacturers were all vaccine companies based outside India.
4. The **regulatory approval is based on clinical evidence** secured by the company after conducting **Phase I, Phase II and Phase III clinical trials** of the vaccine.
5. Serum Institute has conducted these trials in **India as well as in Gambia**.
6. While immunization against the disease has improved in India led by government initiatives and awareness programmes, many children – mainly female children - are still left out of the coverage.
7. Experts say a locally made vaccine is likely to make the vaccine more accessible and affordable.

### Flashback

1. **Pneumonia is an infection in one or both lungs. Bacteria, viruses, and fungi** cause it.
2. The infection causes inflammation in the **air sacs in your lungs**, which are called **alveoli**. The alveoli fill with fluid or pus, making it difficult to breathe.
3. The germs that cause pneumonia are **contagious**. This means they can spread from person to person.
4. Both **viral and bacterial pneumonia can spread to others through inhalation of airborne droplets** from a sneeze or cough.
5. **Bacterial pneumonia** - The most common cause of bacterial pneumonia is **Streptococcus pneumoniae**. Other causes include: **Mycoplasma pneumoniae, Haemophilus, influenzae** and **Legionella pneumophila**
6. **Viral pneumonia** - Respiratory viruses are often the cause of pneumonia. Some examples include: **influenza (flu), respiratory syncytial virus (RSV)** and **rhinoviruses (common cold)**.
7. **Fungal pneumonia** - Fungi from soil or bird droppings can cause pneumonia. They most often cause pneumonia in people with weakened immune systems. Examples of fungi that can cause pneumonia include: **Pneumocystis jirovecii, Cryptococcus species** and **Histoplasmosis species**.

## ISRO'S MOM CAPTURES PHOBOS

The **Mars Colour Camera (MCC)** onboard **ISRO's Mars Orbiter Mission** has captured the **image of Phobos**, the closest and biggest moon of Mars. The image was taken on July 1 when **MOM was about 7,200 km from Mars and 4,200 km from Phobos. Spatial resolution of the image is 210 m**. This is a composite image generated from 6 MCC frames and has been color corrected, ISRO said. **Phobos is largely believed to be made up of carbonaceous chondrites.**

### What

1. According to ISRO, "**the violent phase that Phobos has encountered is seen in the large section gouged out from a past collision** (Stickney crater) and bouncing ejecta."
2. **Stickney, the largest crater on Phobos** along with the other craters (**Shklovsky, Roche & Grildrig**) are also seen in this image.
3. The mission also known as **Mangalyaan** was initially meant to last six months, but subsequently ISRO had said it had enough fuel for it to last "**many years.**"
4. The **country had on September 24, 2014 successfully placed the Mars Orbiter Mission spacecraft in orbit** around the **red planet**, in its very first attempt, thus breaking into an elite club.
5. ISRO had launched the spacecraft on its **nine-month- long odyssey on a homegrown PSLV rocket** from Sriharikota in Andhra Pradesh on **November 5, 2013**.
6. It had **escaped the earth's gravitational field on December 1, 2013**.
7. The Rs 450-crore MOM mission **aims at studying the Martian surface and mineral composition** as well as scans its atmosphere for methane (an indicator of life on

- Mars).
8. The Mars Orbiter has five scientific instruments - **Lyman Alpha Photometer (LAP), Methane Sensor for Mars (MSM), Mars Exospheric Neutral Composition Analyser (MENCA), Mars Colour Camera (MCC) and Thermal Infrared Imaging Spectrometer (TIS).**
  9. Mars Orbiter Mission is **India's first interplanetary mission to planet Mars** with an orbiter craft designed to orbit Mars in an elliptical orbit.
  10. The Mission is primarily a technological mission considering the critical mission operations and stringent requirements on propulsion and other bus systems of spacecraft.
  11. It has been configured to carry out observation of the **physical features of mars.**

## WHO DISCONTINUES HYDROXYCHLOROQUINE TRIAL

**WHO accepted the recommendation** from the **Solidarity Trial's International Steering Committee to discontinue the trial's hydroxychloroquine and lopinavir/ritonavir arms.** The **Solidarity Trial was established by WHO** to find an effective COVID-19 treatment for hospitalized patients. The **International Steering Committee** formulated the recommendation in light of the evidence for hydroxychloroquine vs standard-of-care and for lopinavir/ritonavir vs standard-of-care from the Solidarity trial interim results, and from a review of the evidence from all trials presented at the 1-2 July **WHO Summit on COVID-19 research and innovation.**

### What

1. These interim trial results show that **hydroxychloroquine and lopinavir/ritonavir** produce little or no reduction in the mortality of hospitalized COVID-19 patients when compared to standard of care. Solidarity trial investigators will interrupt the trials with immediate effect.
2. For each of the drugs, the **interim results do not provide solid evidence of increased mortality.**
3. There were, however, some associated safety signals in the clinical laboratory findings of the add-on Discovery trial, a participant in the Solidarity trial. These will also be reported in the peer-reviewed publication.
4. **This decision applies only to the conduct of the Solidarity trial in hospitalized patients** and does not affect the possible evaluation in **other studies of hydroxychloroquine or lopinavir/ritonavir in non-hospitalized patients** or as pre- or post-

#### Ritonavir + lopinavir

1. These **antivirals are commonly used to treat HIV patients.**
2. They are being investigated in the Solidarity Trial.
3. Some studies suggest they **reduce mortality risk in Covid-19 patients;** others have found no major improvement.
4. Over a dozen manufacturers supply **ritonavir and lopinavir in India.**
5. Doctors sometimes use the combination for severely ill patients.
6. Several doctors found **no remarkable impact on the recovery of patients.**

exposure **prophylaxis for COVID-19.**

5. The interim Solidarity results are now being readied for peer-reviewed publication.

### Hydroxychloroquine

1. **This antimalarial drug** is a subject of debate over its efficacy against Covid.
2. The **WHO halted its HCQ arm in the Solidarity Trial** following a study in The Lancet, and then reinstated it after a retraction by the authors.
3. **India is the largest producer of this drug.** Doctors use HCQ use in Covid patients with symptoms as mild as headache, fever, body pain, and even in critically ill patients. ICMR guidelines recommend low doses for nine days.

## INDIA'S COVID-19 FATALITY RATE LOWEST IN WORLD

**India's total number of coronavirus cases and fatalities per million populations is one of the lowest in the world**, the Union health ministry said on 7 July 2020 even as the **country's infection tally went past the 7 lakh-mark** and the death toll rose to 20,160. Referring to the '**WHO Situation Report-168**' dated July 6, the ministry said India's COVID-19 cases per million population is 505.37 as against the global average of 1,453.25. **Chile has witnessed 15,459.8 COVID-19 cases per million population**, while **Peru has 9,070.8 cases per million people**. The US, Brazil, Spain, Russia, the UK, Italy and Mexico have 8,560.5, 7,419.1, 5,358.7, 4,713.5, 4,204.4, 3,996.1 and 1,955.8 cases per million, respectively, according to the WHO report.

### What

1. **The WHO Situation Report** also shows that **India has one of the lowest deaths** (due to COVID-19) per million populations. **India's cases of death per million population is 14.27** while the **global average is more than its four times, at 68.29.**
2. **The United Kingdom has 651.4 COVID-19 related deaths per million populations**, while the metric for Spain, Italy, France, the USA, Peru, Brazil and Mexico is 607.1, 576.6, 456.7, 391.0, 315.8, 302.3 and 235.5 deaths, respectively, the WHO report said.
3. India has ramped up its hospital infrastructure to adequately and effectively manage coronavirus cases.
4. The preparedness includes arrangement of oxygen support, ICU and ventilator facilities. As on July 7, **there are 1,201 dedicated COVID hospitals**, 2,611 COVID healthcare centres and 9,909 COVID care centres to look after patients with 'very severe' to '**very mild**' coronavirus symptoms.
5. **With 793 labs in the government sector and 322 private labs**, there are as many as **1,115 labs in the country.**

### Flashback

1. The **fatality rate is the number of deaths divided by the total number of confirmed cases.**
2. Eventually, scientists hope to have a more comprehensive number called the **infection fatality rate**, which includes everyone who was infected with the virus.
3. The WHO estimates the **fatality rate of the new coronavirus to be about 3%**, based on current data, but experts suggest **1% is more realistic.**



## RGSSH GETS ICMR NOD TO CONDUCT PLASMA THERAPY

Delhi government-run **Rajiv Gandhi Super Speciality Hospital (RGSSH)**, a **dedicated COVID-19 facility**, has **received nod from the ICMR** to conduct **plasma therapy** on 200 coronavirus patients, senior officials said on 7 July 2020.

### What

1. A **convalescent plasma therapy facility** needs a lot of paraphernalia and trained staff. We are trying to augment our infrastructure as well as in the process of hiring required staff, after which we will begin the process, RGSSH said.
2. Recently, Kejriwal had inaugurated the **country's first 'plasma bank'** at the **Institute of Liver and Biliary Sciences (ILBS)**, run by the city government. On the first day, 10 people donated and on the second day, seven donors showed up at ILBS.
3. Recently, the city government-run **LNJP Hospital had resumed plasma therapy** at the facility after getting a fresh nod from the **Indian Council of Medical Research (ICMR)**, which gave it the permit to conduct the therapy on 200 patients.
4. Plasma therapy on a trial basis was permitted by the ICMR earlier but then it had put it on hold.
5. For donors, there are some strict criteria and counselling and screening is done before the donation process begins. So, about two to two-and-a-half hours is the total time per donor.

### What is convalescent plasma therapy?

1. **Convalescent plasma therapy** involves **transfusion of the blood plasma** of a recovered patient into another patient.
2. **Plasma is the matrix on which the blood cells float.** It also **houses crucial components of immunity known as antibodies.**
3. Antibodies are the immediate warriors who fight an invading pathogen – an **antigen** – to defeat it.
4. Once that is done, some blood cells function as memory cells so that they can identify and defeat the same enemy if and when it invades again by quickly producing the same antibodies.
5. **Convalescent plasma therapy banks on the age-old concept of passive immunity** when antibodies for some diseases, such as diphtheria, were developed in horses and injected into humans.
6. **Active immunity is what is achieved by introducing an attenuated pathogen** (such as the BCG vaccine) into the body to generate an immune response. The other kind of immunity is passive immunity.
7. According to the **Textbook of Medical Physiology by Guyton and Hall, Temporary immunity can be achieved in a person without injecting any antigen.**
8. This is done by **infusing antibodies, activated T cells** or both obtained from the blood of someone else or from some other animal that has been **actively immunised against these antigens.**
9. These antibodies last for two-three weeks and during that time, the person is protected against the invading disease.
10. **Activated T cells last for a few weeks if transfused from another person** and for a

few hours to a few days if transfused from an animal.

11. Such **transfusion of antibodies or lymphocytes** to confer immunity is called **passive immunity**.
12. **T-cells are blood cells that have a crucial role in immunity.**

## MISCELLANEOUS

### WORLD UFO DAY

The world is celebrating **Unidentified Flying Objects (UFO) Day** on 2 July 2020. **The day is celebrated across the world on two different dates**-some countries celebrate it on **24 June** while some others celebrate it on **2 July**. Since time immemorial, the world of fiction is replete with instances of aliens and supposedly people living on different planets in anecdotes, films, documentaries, books, novels and what not. Though **no evidence or scientific theory has been able to prove the existence of aliens or their flying spacecrafts so far**, the day is celebrated to keep the rigour of finding out the aliens intact.

#### What

1. **The day was first celebrated** by an organisation called **World UFO Day Organisation (WUFODO)** in the **year 2001**.
2. The **aim was to celebrate camaraderie and solidarity among people** who believed in the existence of another world of aliens and extraterrestrial beings.
3. The day was also formally celebrated to take stock of the evidence presented by the members of the group about the existence of aliens.
4. Probably the first instance that caught the imagination of the world towards the existence of aliens was an incident in **July 1947 called the Roswell incident**.

#### What is a UFO

1. **A UFO is an Unidentified Flying Object** that cannot immediately be identified or explained.
2. The term is widely used for making claims about sighting an **extraterrestrial spacecraft i.e. a spacecraft that does not belong to Earth and humans**.

### NEW FISH SPECIES DISCOVERED FROM WESTERN GHATS

A **team of scientists has discovered a new freshwater fish species** and genus, **Waikhomia Hira**, from rivers in regions along the **Western Ghats in north Karnataka**. The genus, **Waikhomia**, has been named for **Vishwanath Waikhom**, a **taxonomist from Manipur University who has discovered more than 100 freshwater fishes in India**. The research was jointly conducted by scientists at **Bombay Natural History Society (BNHS), Kerala University of Fisheries and Ocean Studies (KUFOS), Indian Institute of Science, Education and Research (IISER)** and the **Modern College of Arts, Science and Commerce in Pune**. **Waikhomia Hira** is more commonly found in northern upstreams of the Western Ghats.

#### What

1. **Since its discovery first in 1953 in Mahabaleshwar in Maharashtra**, the popularly known **Maharaja Barbs** was represented by a single species, **Puntius sahyadriensis**. Thereafter, 44 species of freshwater fish of **Puntius** genus were traced in the wetlands

- and rivers of South and Southeast Asia.
2. **Specimens of Wiakhomia** were collected mainly from the upper catchment of westward-flowing Kali River, located in the Uttara Kannada district of Karnataka.
  3. The team studied the anatomy and genetics of the specimen using an integrative approach and realised that it was no longer matching the **Puntius genus**.
  4. **Waikhomia Hira has distinctive diamond shaped spots** and blotches on its body. Its size ranges between **29 mm and 59 mm**.
  5. The **Western Ghats offers a unique habitat for freshwater fish** and conservation of forests will alone help such species survive.
  6. **Freshwater fish thrive in habitats** that offer clear water and dense forest surroundings. Any degradation to this habitat, due to human activity or otherwise, will endanger their existence.

## ISRO TO LAUNCH AMAZONIA-1 SATELLITE OF BRAZIL

The **Indian Space Research and Research Organisation (ISRO)** gets ready to launch **Brazil's Amazonia -1 satellite** next month **onboard PSLV**. This **Brazilian Satellite has been locally designed**, assembled and tested in Brazil and will be the **first satellite for Earth Observation**. It will be the primary payload and will not be a hitch-hiking satellite.

### India-Brazil Space Cooperation

1. At the **6th BRICS Summit in 2014**, the **two countries -India and Brazil had an agreement all signed** which talked about setting up a **Brazilian earth station** to receive data from the Indian satellites.
2. For operating the station and gathering data through remote sensing, the **Brazilian scientists have been getting training at the ISRO facility**.
3. **Space Cooperation between the two countries goes back to the early 2000s** when the two had an agreement in place at the Government to Government level, under which the South American nation started receiving data from **Resourcesat-1 satellite of India from October 2009 to September 2013**.
4. Since October 2014 has been receiving data from Resourcesat-2.
5. On a commercial basis, India gets tracking support from ground stations **located Alcantara and Cuiaba, in Brazil**. This tracking support is for Indian satellites and other space programmes including **Chandrayaan-I, Megha Tropiques, MOM, and ASTROSAT**.

### What is the purpose of Amazonia-1 which PSLV will launch?

1. Diplomatic sources have confirmed that **the images from the Brazilian satellite will help in observing and monitoring the deforestation of the Amazon Region**.
2. It now has a much more critical role to play after the **recent fires in the Amazon Region**. Also, the images will help in the agricultural and vegetation areas.

### Why ISRO for launching satellites?

1. **Several countries have been coming to ISRO** for launching their satellite purely because of commercial consideration.
2. A lot of South American countries have been reaching out to ISRO through the Indian

Missions looking for a commercially feasible launch.

3. **Post-MARS mission in 2014**, India's sophisticated and cost-effective programmes attracted big and small countries from across the globe.
4. Countries like **Mexico, Brazil, Argentina, Chile, Colombia, and Bolivia** are among some of the countries who have a Space Cooperation with ISRO at a different level.
5. Several others in the region who want to stay away from China have been reaching out for an understanding with ISRO.

## AIRBORNE TRANSMISSION OF CORONAVIRUS POSSIBLE

The **World Health Organization (WHO)** late on 9 July 2020 **admitted the possibility of airborne transmission of the novel coronavirus in closed, poorly ventilated, crowded places** such as during choir practice, in restaurants or in fitness classes. This comes a day after it acknowledged the emerging proof of **airborne spread of the virus** after an open letter by over 200 scientists outlined evidence that showed floating virus particles can infect people who breathe them in.

### What

1. The WHO has maintained that current evidence suggests that **transmission of SARS-CoV-2 occurs primarily between people through direct, indirect, or close contact** with infected people through **infected secretions such as saliva and respiratory secretions**, or through their **respiratory droplets**, which are expelled when an infected person **coughs, sneezes, talks or sings**.
2. Airborne transmission of the virus can occur in health care settings where specific medical procedures, called **aerosol generating procedures**, generate very small droplets called **aerosols**.
3. Some outbreak reports related to **indoor crowded spaces have suggested the possibility of aerosol transmission**, combined with droplet transmission, for example during choir practice, in restaurants or in fitness classes, said the WHO.
4. As **environmental contamination has been documented by many reports**, it is likely that people can also be infected by touching these surfaces and touching their eyes, nose or mouth before cleaning their hands.
5. The WHO also highlighted a **strong possibility of transmission of virus by asymptomatic patients** though evidence so far show that people with symptoms or developing symptoms to have primarily transmitted the disease.
6. The WHO called for an **urgent need of high-quality research to elucidate the relative importance of different transmission routes**; the role of airborne transmission in the absence of aerosol generating procedures; **the dose of virus required for transmission to occur**; the settings and risk factors for super-spreading events; and the **extent of asymptomatic and pre-symptomatic transmission**.

## NEOWISE TO BE VISIBLE IN INDIA

Known as one of the brightest comets to pass near the Earth in over two decades **comet C/2020 F3 or NEOWISE** will be **visible in the northern hemisphere** starting on 14 July 2020. **All stargazers can take a look** at it as it is likely to be visible to the naked eyes. News agency ANI citing deputy director of Odisha's **Pathani Samanta Planetarium** said that **the comet can be visible everyday for 20 days and for**

**20 minutes.** The comet had been **discovered by NASA's Near Earth Wide-field Infrared Survey Explorer (NEOWISE)** earlier this year. **Comet C/2020 F3 is expected to come closest to planet Earth on July 22 and July 23** and can be visible in the north-western sky.

#### What exactly is a comet?

1. A comet is a cosmic snowball made up of frozen gases, rocks and some dust, which orbits around in an elliptical manner.
2. When a comet reaches closer to the sun, its gases start to evaporate in a way that leaves a tail and a glowing head.
3. Since they do not have their light on their own, they mostly reflect the sun's light. In a dark sky, these comets can be easily viewed.
4. Since the comet is visible in the northern hemisphere, Indians can too experience passing of this comet. In the next 20 days, the comet will be visible in the evening sky.
5. The comet is likely to be visible in the northwestern horizon after the sunset going forward.

#### How to view NEOWISE?

1. Since the comet is expected to be the closest to Earth, it can be viewed by the naked eyes. But NASA believes that it will be easier to view from a small telescope or binoculars. There have been many reports where people have witnessed it with naked eyes only.
2. What's more interesting is that astronauts at the International Space Station (ISS) were able to take some pictures of the comet.
3. Bob Behnken, who is one of the astronauts who flew on SpaceX's Crew Dragon spacecraft on July 6 said that it looks like fireworks in the sky.

#### 'COROSURE' TEST KIT FOR COVID-19

A low-cost test kit for Covid-19 developed by the Indian Institute of Technology (IIT) Delhi was launched by Union Minister Ramesh Pokhriyal 'Nishank' on 15 July 2020. Claimed to be the "world's most affordable" diagnostic kit for coronavirus, the cost of the test will be upto Rs 650. IIT Delhi has named the test-kit as "Corosure" which will now be available for use at authorised testing labs. Referring to it as the world's most affordable Covid-19 diagnostic kit, the HRD minister said the innovation is a step towards "Make in India".

#### What

1. The probe-free, RT-PCR based Covid-19 diagnostic kit was developed by the researchers of IIT Delhi's Kusuma School of Biological Sciences.
2. According to the team at IIT Delhi, the current testing methods available are "probe-based", while the one developed by them is a "probe-free" method, which reduces the testing cost without compromising on accuracy.
3. Using comparative sequence analyses, the IIT Delhi team identified unique regions (short stretches of RNA sequences) in the Covid-19 and SARS COV-2 genome.
4. These unique regions are not present in other human coronaviruses providing an opportunity to specifically detect Covid-19, Professor Vivekanandan Perumal, lead

- member of the team, said.
5. Primer sets, **targeting unique regions in the spike protein of Covid-19**, were designed and tested using real-time polymerase chain reaction.
  6. The primers designed by the group specifically bind to regions conserved in over 200 fully sequenced Covid-19 genomes. The sensitivity of this in-house assay is comparable to that of commercially available kits.
  7. **RT-PCR (Reverse transcription polymerase chain reaction) test**, also known as the swab test is one of the most common (and reliable) tests to detect the presence of novel coronavirus.
  8. As of now, the average RT-PCR test costs anywhere around Rs 2,200 and Rs 3,000, which is precisely why the indigenous testing kit will prove to be a gamechanger in the fight against Covid-19?
  9. Since the aim was to make the kit extremely affordable, the managing director of Corosure, Jatin Goyal maintained that the final price of the probe-free testing kit for coronavirus will be around Rs 650.
  10. **IIT Delhi, which became the first academic institute to get ICMR nod for a Covid-19 testing method**, gave non-exclusive open licence to 10 companies for commercialising the test, but with a price rider of R 500 for the assay needed for testing.
  11. The kit Corosure has been commercialised by **Newtech Medical Devices**.