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Daily News Juice

1. Centre imposes a 20% export duty on par-boiled rice till October 15
2. Govt brings changes to the process for the sale of SIM cards
- 3 Scientists found LK-99 to be probably not a superconductor

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Centre imposes a 20% export duty on par-boiled rice till October 15



Relevance: Prelims & Mains Paper III; Economics

Why in news?

- In a move to check domestic rice prices and ensure domestic food security, the Indian govt has prohibited the export of white rice.
- It has also levied a 20% export duty on par-boiled rice till October 15, and permitted the export of Basmati rice for contracts with value of \$1,200 a tonne or above.
- The export of broken rice has been prohibited since last September. However, it is allowed on the basis of permission granted by the govt to other countries to meet their food security needs and based on the request of their govt.

Production Estimates

- As per estimates, during the Rabi season 2022-2023, rice production was 13.8% less, at 158.95 lakh tonnes against 184.71 lakh tonnes during Rabi 2021-2022.
- Kharif sowing data show that rice is sown on 384.05 lakh hectares this year as on August 25 compared with 367.83 lakh hectares during the same period last year.
- But, in States such as Tamil Nadu where the Samba crop sowing starts usually in August, a section of farmers says there will be delayed sowing due to a shortfall in the south west monsoon.
- Trade and rice millers say that new season crop arrivals will start after the first week of September and that El Nino effects are likely to impact arrivals to some extent.

Export figures

- India is the largest rice exporter globally with a 45% share in the world rice market. Overall rice exports in April-May of 2023 were 21.1% higher compared with the same period last financial year.
- In May alone, export of Basmati rice was 10.86% higher than its exports in May 2022. Non-Basmati rice shipments were 7.5% more, despite the govt introducing a 20% export duty on white rice and prohibiting the export of broken rice last September.
- The shipment of non-Basmati rice has been on the rise for the last three years and the export of Basmati rice in 2022-2023 was higher than the previous year.
- Till August 17 this year, total rice exports (except broken rice) were 15% more at 7.3 million tonnes as against the 6.3 million tonnes during the corresponding period last year.

Likely future scenario

- The govt has increased the Minimum Support Price (MSP) for rice, and the paddy procured now by rice millers are at a price higher than the MSP.
- The prices will not decline for farmers. The restrictions on exports will ensure that there is no steep climb in rice prices in the market.
- When the benchmark price set by the govt is high, the farmers will realise better prices, say trade sources. For domestic consumers, though there is a slight increase in rice prices at present, in the long run, availability is secured and prices are not expected to spiral.
- As per exporters, the prices of Indian par-boiled rice in the international market is competitive even with the levy of a 20% duty.
- Countries such as Indonesia, which are rice exporters, are looking at imports (raw rice) now.

Govt brings changes to the process for the sale of SIM cards



Relevance: Prelims & Mains Paper III; Internal Security

Why in news?

- In a bid to further tackle the menace of cybercrimes and financial fraud, the Govt. has introduced two reforms. These entail a revision of norms for bulk procurement of SIM cards and registering the final point of sale (PoS) by the licensees (or providers).
- The reforms are meant to strengthen the citizen-centric portal Sanchar Saathi that was launched in May this year with the same objective.

What is Sanchar Saathi?

- Broadly, the citizen-centric portal allows citizens to check the connections registered against their names, block mobile phones which are stolen or lost, report fraudulent or unrequired connections and verify the genuineness of a device (before a purchase) using the IMEI (International Mobile Equipment Identity).
- Sanchar Saathi has, till date, analysed 114 crore active mobile connections. Of these, 66 lakh connections were flagged as suspicious, and 52 lakh connections were disconnected because they failed re-verification.
- Other than this, 66,000 WhatsApp accounts have been blocked and eight lakh bank/wallet accounts were frozen. Furthermore, more than 300 FIRs have been filed against more than 1,700 dealers.

The reform on PoS

- From now on, it will be mandatory for franchisee, agents and distributors of SIM cards — all PoS — to be registered with the licensees or the telecom network operator.
- The onus would be on the operator to carry out an “indisputable” verification of the PoS. Importantly, police verification (of the dealer) is mandatory. Existing SIM card providers have been given 12 months to comply with the registration requirements.
- If the PoS is found to be involved in any illegal activity, the agreement would be terminated with the entity being blacklisted for three years. It would also draw a penalty of ₹10 lakh.

The reform on bulk SIM cards

- Broadly, the latest provisions would replace the system of ‘bulk procurement’ of SIM cards (by businesses, corporates or those meant for specific events) with a system of entailing ‘business’ connections — sizeable procurement by a registered business entity or enterprise.
- As per the govt, 20% of bulk-procured SIMs were misused. In the guise of bulk connections, a lot of SIMs would be procured and then they would make automated calls using a SIM-box.
- Also, a certain number of SIMs from the bulk procurement were being used to make a certain number of calls, destroying them and then using another batch.
- The latest reforms aim to address these issues. The new norms maintain that though businesses can procure any number of connections, it would be subject to completing KYC requirements for all end-users. In other words, the final user— the executive who would be holding the connection — would have to undergo the KYC procedure.
- In order to prevent the misuse of printed Aadhaar, the provisions mandate that demographic details would be required by scanning the QR code of the printed Aadhaar. Subscribers would also have to undergo the entire KYC procedure for replacing their SIM; for a period of 24 hours, all outgoing and incoming SMS facilities would be barred.

Scientists found LK-99 to be probably not a superconductor



Relevance: Prelims & Mains Paper III; Science & Technology

Why in news?

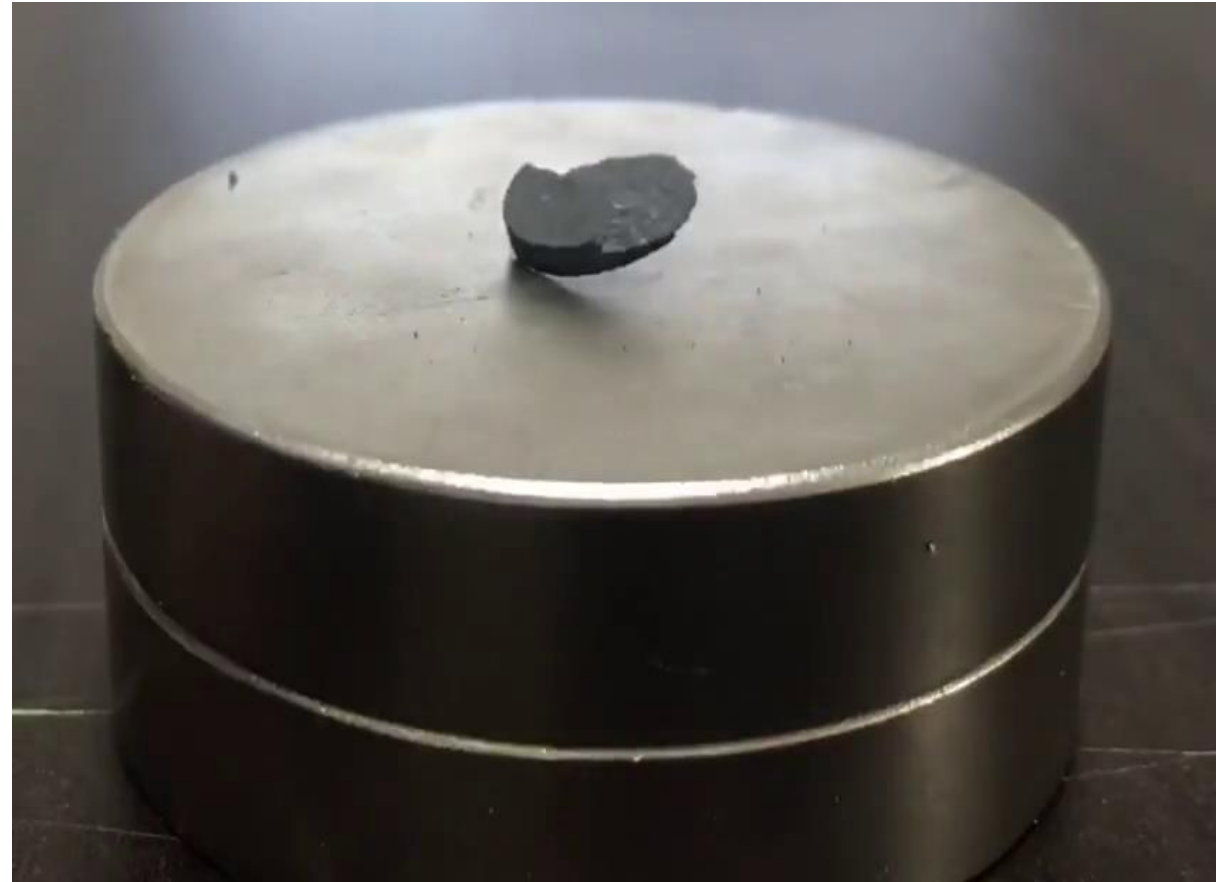
- Most electrical conductors resist the flow of electric current, converting some of the electrical energy into heat. With a heater, we use this effect to generate the warmth that we feel.
- While this property of conductors allows us to stay warm in the winter, in most instances, it is undesirable. For e.g, a substantial amount of electricity generated is lost while being transmitted between power plants and our factories and households as heat.
- Tiny wires inside computers and cellphones dissipate heat, draining the batteries in the process. So it is natural that scientists are looking for materials that can conduct electricity without resistance, especially for applications where heat loss is a deal-breaker.

An elusive material!

- More than a century ago, scientists discovered that many metals become superconductors – i.e. allow current to flow with zero resistance – if cooled to below -250°C . To know the reason behind it, scientists developed a theory of superconductivity.
- With this theory, they found that superconductors aren't just materials with zero resistance: they have a remarkable new quantum state in which the electrons in the material work together.
- Several fantastic properties of superconductors then came to light, opening the door to new technologies – including advanced medical imaging, 'maglev' trains, and quantum computers.
- However, superconductivity also remained an extremely-low temperature-phenomenon for a long time. It was only in the mid-1980s that scientists discovered copper-oxide superconductors, whose transition temperature was higher than -200°C .
- But to this day, scientists haven't made significant progress to elevate this figure to at or near ambient conditions.

Surprise and scepticism

- In July 2023, a group of scientists in South Korea claimed that a lead apatite material was an ambient condition superconductor. Apatites are materials that have a regular arrangement of tetrahedrally shaped phosphate ions (i.e. one phosphorus atom and four oxygen atoms).
- While apatites have been well-studied, no one had anticipated that they could be superconductors – let alone one in ambient conditions.
- The novelty of the South Korean group's work was to replace 10% of the lead ions in lead apatite with copper, to produce the supposed wonder material that they had named LK-99 (after their own last names).



Independent verification



- In their papers, the group described **subjecting their LK-99 samples to a variety of tests. They measured the material's electric resistance, which seemed to drop below a certain temperature.**
- They showed that the **low resistance state vanished when a sufficiently strong magnetic field was applied. They also showed that the resistive state was restored if a sufficiently large amount of current was passed through the sample. They even included an image of the sample partially levitating over a magnet in their second paper – a famous test for superconductivity.**
- But while all of these data suggested superconductivity, the group **also missed several crucial tests, including some to confirm the quantum nature of the microscopic state of the system.**
- Since the South Korean team had **provided instructions to synthesise LK-99, researchers in Australia, China, India, the U.S., and several European countries tried to replicate their findings – but no one found conclusive evidence of superconductivity in their samples. In fact, the Indian group, from the CSIR-National Physical Laboratory, New Delhi, was one of the first to report that it didn't find any signs of superconductivity in LK-99.**
- At least one group was able to make **a highly pure crystal that was also transparent, which was unusual for a superconductor. More remarkably, this single crystal behaved like an insulator, showing no signs of superconductivity from low temperatures up to 800° C. It was also ferromagnetic – i.e. it could be magnetised by, say, rubbing a magnet on it. Superconductors cannot have this property.**

The wait continues...

- The South Korean LK-99 samples had shown **a jump in resistance at almost the same temperature**, meaning that the exciting graphs in their papers were **due to copper sulphide** rather than **LK-99**.
- **The current evidence suggests that LK-99 is not a superconductor.** Thus, it can be safely said that **we are yet to find an ambient-condition superconductor.**

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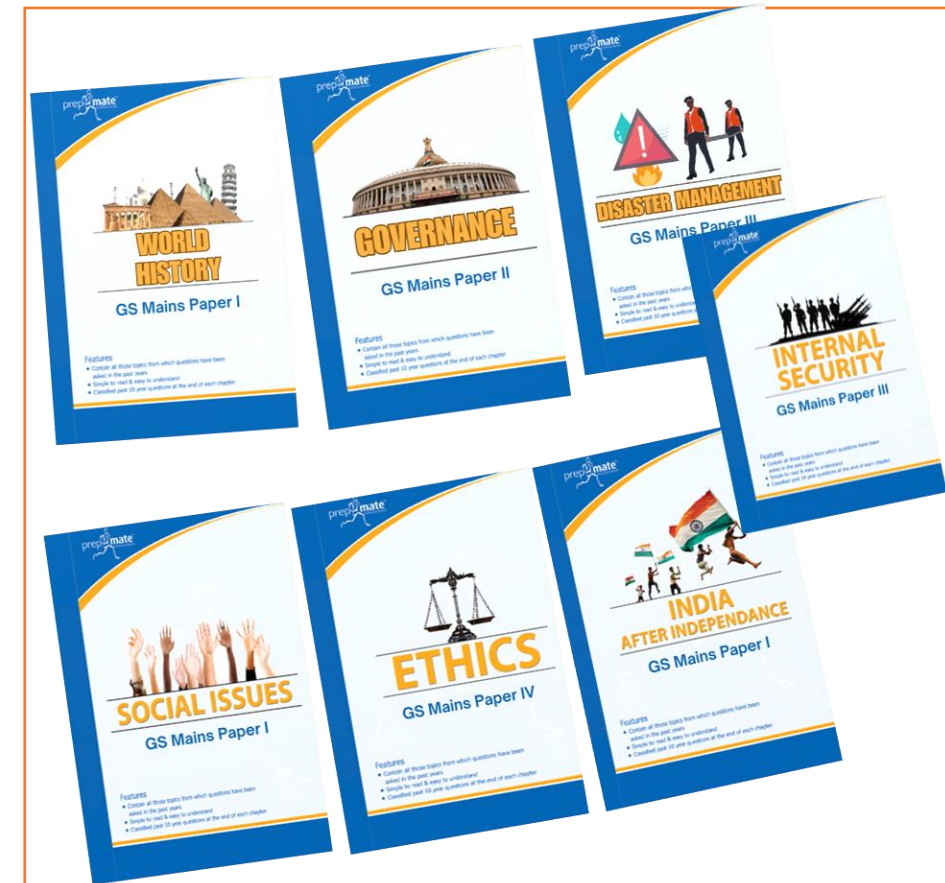
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