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1st - 15th MARCH, 2020

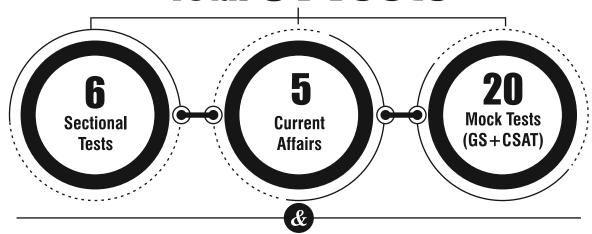
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1 RAIDER-X

- RaIDer-X, a new explosive detection device, was unveiled at the National Workshop on Explosive Detection (NWED-2020) in Pune.
- RaIDer-X has been co-developed by High Energy Materials Research Laboratory (HEMRL) Pune and Indian Institute of Science, Bangalore.

Key-features:

- RaIDer-X has the capability to detect explosives from a stand-off distance.
- The data library can be built in the system to expand its capability to detect a number of explosives in pure form as well as with the contaminants.
- Bulk explosive in a concealed condition can also be detected by the device.

2 44th CIVIL ACCOUNTS DAY

The 44th Civil Accounts Day (CAD-2020) was celebrated by **Indian Civil Accounts Service (ICAS)** on March 1 in New Delhi to mark the 44th anniversary of the beginning of the ICAS on this day in 1976.

Historical background:

- The Union Government initiated a major reform in Public Financial Management in 1976.
- The Audit and Accounts functions were separated by relieving the Comptroller and Auditor General of his responsibility of preparation of Union Government accounts.
- The accounting function was brought directly under the control of the Executive. Consequently, the Indian Civil Accounts Service (ICAS) was established.
- The ICAS was carved out from the Indian Audit & Accounts Service (IA & AS), initially through the promulgation of an Ordinance amending the C & AG's (Duties, Powers and Conditions of Service) Amendment Act, 1976.
- Later on, the Departmentalization of Union Accounts (Transfer of Personnel) Act, 1976 was enacted by Parliament and assented to by Hon'ble President of India on 8th April 1976.
- The Act was deemed to have come into force with effect from 1st March 1976. Accordingly, the ICAS is celebrating March 1 every year as the "Civil Accounts Day".

ANNUAL LALIT KALA AKADEMI AWARDS

- The President of India, Shri Ram Nath Kovind, conferred the 61st annual Lalit Kala Akademi Awards on 15 meritorious artists at a function held at Rashtrapati Bhavan today (March 4, 2020).
- Lalit Kala Akademi organises art exhibitions and award ceremonies every year to promote art as well as to honour talents.
- The exhibition brings together the works of brilliance from across the country and also encourages budding art talents to learn new tendencies and mediums in the world of painting, sculpture, graphics, photography, drawing, installation and multimedia etc.

4

SCIENTISTS IDENTIFY BACTERIA THAT CAN REPLACE FERTILIZERS & FUNGICIDES IN TEA PLANTS

- Tightening norms on pesticide use in many countries have often harmed team export. Now Indian scientists have come up with a solution to reduce the use of such chemicals in team plantations.
- Researchers at Institute of Advanced Study in Science and Technology (IASST) Guwahati, have found significant plant-growth-promoting and antifungal activities of endophyticactino bacteria associated with Tea plant and related genera, Eurya to find potent plant growth-promoting strains.

ABOUT THE BACTERIA:

- Application of endophytic Actinobacteria could reduce chemical inputs in Tea plantation.
- Most of the endophyticactino bacteria isolate having antifungal activity showed presence of chitinase, NRPS (Nonribosomal peptides synthetase) or PKS-1 (Polyketide Synthase) gene, suggesting the presence of distinctive mechanisms to inhibit the growth of pathogenic plant fungi.
- Actinobacterial strain SA1, T1LA3, and SA14 were further tested for their efficacy in promoting the growth of commercial tea clones namely, TV1, TV9, TV18, and TV22 in nursery conditions.
- All the endophytic isolates tested showed significant differences in terms of plant growth-promoting parameters in the treated plants compared to untreated control.

5

NEW TEST WITH QUANTUM COINS & COMPUTERS FOR QUANTUM SENSING

Researchers from Raman Research Institute (RRI), have devised a new test for fairness of quantum coin or 'qubit' (the basic unit of information in a quantum computer) using entanglement theory.

What is Entanglement?

- The new test uses entanglement to test the fairness of the quantum coin.
- Entanglement is a special type of correlation that exists in the quantum world with no classical counterpart. The researchers from RRI made use of this quantum resource to arrive at a test for fairness of a quantum coin (a qubit).

SIGNIFICANCE:

- This is a significant contribution to quantum state discrimination, an essential aspect of quantum information science which is expected to influence quantum sensing.
- Their strategy, which makes use of entanglement, enables better discrimination between quantum states. Such an advantage is valuable in quantum sensors.

6

DECCAN QUEEN EXPRESS

Indian Railways' one of the most iconic train which has got a great historic value is finally ready for a major facelift.

ABOUT DECCAN QUEEN:

• Indian Railways' Deccan Queen, which has been running between Mumbai and Pune since 1930, is the country's first superfast train

- Deccan Queen is the first long-distance electric-hauled train, first vestibuled train, the first train to have a 'ladies only' car and the first train to feature a dining car
- The 90-year-old Train will finally be upgraded to German design Linke Hofmann Busch (LHB) coaches.
- The train currently runs on ICF coaches with a unique existing livery of blue and white colour with a red band.

7

INTERNATIONAL CONFERENCE ON NANO SCIENCE AND NANO TECHNOLOGY (ICONSAT)

 The International Conference on Nano Science and Nano Technology (ICONSAT) under the aegis of Nano Mission, Department of Science and Technology (DST), conducted in Kolkata focusing on the recent advances in this frontier research field.

WHAT IS NANO MISSION?

- The Government of India launched a Mission on Nano Science and Technology (Nano Mission) in May 2007.
- This 'nano-mission' has been working to help scientists, institutions and the industry in terms
 of promoting basic research, development of adequate manpower resources, international
 collaborations, augmentation the infrastructure for research and generation of socially useful
 products.
- Nano Technology is a 'knowledge-intensive & enabling technology' which is expected to influence
 a wide range of products and processes with far-reaching implications for the national economy
 and development.

8

POLYMER ELECTROLYTE MEMBRANE FUEL CELLS (PEMFC)

Scientists at International Advanced Research for Powder Metallurgy & New Materials (ARCI), Hyderabad, have developed **Polymer Electrolyte Membrane fuel cells (PEMFC).**

ABOUT THE CELL:

- PEMFC, in its entireness, have an advantage of operational capability at low-temperatures with applications in decentralised power generation systems.
- The fuel cell stack provides sustainable electricity using hydrogen gas without grid power). There is a wide range of applications for his innovation.
- Emergency operation centres backed with 10 kW system along with fuel cell stack, air moving subsystems, power control devices, and control and monitoring systems are being planned as natural disaster management measures.
- Natural Disasters & Tamil Nadu:
- Natural disasters are consequences of calamities like earthquake, landslide, cyclone, flood, tsunami, and so on that affects human activities.
- Tamil Nadu is generally affected by five to six cyclones every year, of which two to three are severe.
- There has been a paradigm shift in the focus of Disaster Management, from response-centric (rescue, relief, rehabilitation, and reconstruction) to laying greater emphasis on the other elements

of disaster management cycle (prevention, mitigation, and preparedness) as a means to avert the impact of future emergencies.

9

INDIA-EUROPEAN UNION FLAGSHIP CALL ON INTEGRATED LOCAL ENERGY SYSTEMS

- India-European Union Flagship Call on Integrated Local Energy Systems was announced at India Smart Utility Week 2020.
- This partnership between Indian and European Union will help in Clean Energy and Climate and this partnership will foresee strengthened cooperation in energy research and innovation, mainly in renewable energy and its integration in the energy system.
- The collaboration can make energy supply cleaner, more efficient and affordable to all.
- This Indo-EU flagship call is fully in line with both the European Union's and India's involvement in **Mission Innovation (MI)**, a global initiative of 24 countries and the European Commission (on behalf of the European Union), committed to reinvigorate and accelerate global clean energy innovation to make clean energy widely affordable.
- This Indo-EU Flagship call will give novel solutions encompassing local integration across various energy vectors and increase the share of renewables in the energy mix and high energy efficiency.

10

THE MINERAL LAWS (AMENDMENT) BILL, 2020

Parliament passed The Mineral Laws (Amendment) Bill, 2020 for amendments in Mines & Mineral (Development and Regulation) Act 1957 and The Coal Mines (Special Provisions) Act, 2015.

Key-highlights of the Bill:

 The Bill replaces the ordinance for amendment of the MMDR Act 1957 and CMSP Act which was promulgated on 11th January 2020.

Significance of the Bill:

- The Bill will open a new era in Indian coal & mining sector especially to promote Ease of Doing Business.
- Furthermore, it will transform the mining sector in the country boosting coal production and reducing dependence on imports.

11

SCHEME FOR REMISSION OF DUTIES AND TAXES ON EXPORTED PRODUCTS (RODTEP)

The Cabinet Committee has given its approval for introducing the Scheme for Remission of Duties and Taxes on Exported Products (RoDTEP) under which a mechanism would be created for reimbursement of taxes/ duties/ levies, at the central, state and local level, which are currently not being refunded under any other mechanism, but which are incurred in the process of manufacture and distribution of exported products.

ABOUT THE SCHEME:

- Under the Scheme, an inter-ministerial Committee will determine the rates and items for which the reimbursement of taxes and duties would be provided.
- In line with "Digital India", refund under the Scheme, in the form of transferable duty credit/electronic scrip will be issued to the exporters, which will be maintained in an electronic ledger.
- The Scheme will be implemented with end to end digitization.
- The refunds under the RoDTEP scheme would be a step towards "zero-rating" of exports, along with refunds such as Drawback and IGST.
- At present, GST taxes and import/customs duties for inputs required to manufacture exported products are either exempted or refunded.
- However, certain taxes/duties/levies are outside GST and are not refunded for exports, such as VAT on fuel used in transportation, Mandi tax, Duty on electricity used during manufacturing etc.
- These would be covered for reimbursement under the RoDTEP Scheme.

SIGNIFICANCE OF THE SCHEME:

- This scheme is going to give a boost to the domestic industry and Indian exports providing a level
 playing field for Indian producers in the International market so that domestic taxes/duties are not
 exported.
- This would lead to cost competitiveness of exported products in international markets and better employment opportunities in export-oriented manufacturing industries.

12 ROPAX SERVICE

- The government inaugurated ROPAX service from Bhaucha Dhakka, Mumbai to Mandwa, Alibag in Maharashtra.
- ROPAX service is a 'Water Transport Service Project', under Eastern Waterfront Development.
- The benefits of this service include a reduction in the travel time, vehicular emission and traffic on the road.
- The road distance from Mumbai to Mandwa is about 110 kilometres, and gruelling road journey takes three to four hours, whereas by waterway it is about 18 kilometre and journey of just an hour.
