GS SCORE

An Institute for Civil Services

PIB FORTNIGHTLY COMPILATION

1st - 15th OCTOBER, 2020

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An Institute for Civil Services

IAS MAINS 2020
PROGRAMMES

01	**POLITICAL SCIENCE ADVANCE** 2020 BY: Dr. PIYUSH CHAUBEY	STARTS	12 OCTOBER
02	**GS MAINS QIP 2020** (QUALITY IMPROVEMENT PROGRAMME)	STARTS	14 OCTOBER
03	**ETHICS & ESSAY** TEST SERIES 2020 BY: MANOJ K. JHA	STARTS	17 OCTOBER
04	**POLITICAL SCIENCE** TEST SERIES 2020 BY: Dr. PIYUSH CHAUBEY	STARTS	24 OCTOBER
05	**HISTORY** TEST SERIES 2020 BY: PIYUSH KUMAR	STARTS	18 OCTOBER
06	**GEOGRAPHY** TEST SERIES 2020 BY: PRINCE MISHRA	STARTS	17 OCTOBER
07	**GS MAINS** TEST SERIES 2020 (SECTIONAL + MOCK)	STARTS	18 OCTOBER
08	**GS MAINS MOCK** TEST SERIES 2020 (TOTAL 20 TESTS)	STARTS	01 NOVEMBER

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1 VAIBHAV Summit

CONTEXT:

Prime Minister inaugurated **Vaishvik Bhartiya Vaigyanik (VAIBHAV) Summit** via video conferencing.

ABOUT:

- The VAIBHAV Summit is a global virtual summit of overseas and resident Indian Researchers and Academicians.
- It is being organized from 2nd October to 31st October 2020.
- **Aim:** The aim of the summit is to bring Indian origin luminaries in academic institutes and R&D organizations across the world and resident counterparts on a single platform to debate upon collaboration mechanisms to strengthen academic and S&T base in India for global development.
- The inauguration was followed by online deliberation sessions. The initiative involves multiple levels of interactions among overseas experts and Indian counterparts over a month-long series of webinars, video conferences etc.
- More than 3000 overseas Indian origin academicians and scientists from 55 countries and more than 10,000 resident academicians and scientists took part in the summit.

2 OECD

CONTEXT:

India designated Vice-Chair of OECD Working Group on **Good Laboratory Practice (GLP)**

ABOUT:

- Good Laboratory Practice (GLP) is a quality system, which has been evolved by Organisation for Economic Co-operation and Development (OECD) to ensure that safety data generated on various chemicals like industrial chemicals, pharmaceuticals (Human and Veterinary), agrochemicals, cosmetic products, food/ feed additives, and medical devices, etc., can be relied upon by regulatory authorities.
- The Department of Science and Technology (DST), Government of India, established the **National GLP Compliance Monitoring Authority (NGCMA)** in 2002.
  - NGCMA is the **National body** which **grants GLP certification to test facilities (TFs)** conducting safety studies on new chemicals of the above-mentioned categories in accordance with OECD Principles of GLP and OECD Council norms.
- The non-hazardous nature of chemicals needs to be established through studies and data, which is examined by the regulators of the concerned countries to certify that the use of these chemicals does not pose any hazards to human health and the environment.
- On March 3, 2011, India became full adherent to the **Mutual Acceptance of Data (MAD)** in the OECD, which was a historical event.
- The MAD status has given global recognition to India's non-clinical safety data by tremendously augmenting its credibility and acceptability across the globe.

Organisation for Economic Co-operation and Development (OECD):

- The Organisation for Economic Co-operation and Development (OECD) was established on December 14, 1960, by 18 European nations, plus the United States and Canada.
- It is a group of 37 member countries that discuss and develop economic and social policy.
- Members of OECD are typically democratic countries that support free-market economies.

3 India-Mexico Bilateral High Level Group on Trade, Investment and Cooperation

CONTEXT:

The fifth meeting of the India-Mexico Bilateral High Level Group on Trade, Investment and Cooperation (BHLG) was held through video conference.

Key-highlights of the meet

- The two sides appreciated the progress made in the bilateral trade and commercial relations between India and Mexico in the recent years.
- Both sides discussed a number of bilateral ongoing and outstanding issues, ranging from Audio-visual Co-production, Bilateral Investment Treaty, market access for agricultural products, a cooperation framework on Sanitary and Phytosanitary (SPS) & Technical Barriers to Trade (TBT) measures between the two countries, co-operation in the Intellectual Property Rights, and exploring ways to promote tourism and people-to-people contact between India and Mexico.
- In the meeting, two business to business MoUs were signed, to foster the cooperation in the respective domains:
  - A Memorandum of Understanding between the Electronics & Computer Software Export Promotion Council (ESC) of India and the Mexican Chamber of Electronics, Telecommunications and Information Technologies (CANIETI)
  - A Memorandum of Understanding between the Federation of Indian Chambers of Commerce and Industry (FICCI) and the Mexican Business Council of Foreign Trade, Investment and Technology (COMCE) for promoting the development of business relations between India and Mexico
- They also agreed to expand and diversify the bilateral trade relationship to tap the potential of the complementarities between India and Mexico through enhanced cooperation in pharmaceuticals, medical equipment, healthcare, agro-products, fisheries, food processing and aerospace industry etc.
- A 'Joint Statement' after the successful conclusion of the meeting was issued.

4 Governing Structure of India Energy Modelling Forum

CONTEXT:

Further to the constitution of the India Energy Modelling Forum (IEMF)—jointly launched by NITI Aayog and United States Agency for International Development (USAID) under the US–India Strategic Energy Partnership, NITI Aayog announced its governing structure.

ABOUT:

- Part of the Sustainable Growth pillar of the US–India Strategic Energy Partnership (SEP), IEMF aims to engage Indian researchers, knowledge partners, think tanks and national and international government agencies and departments for modelling and long-term energy planning.
- The governing structure of IEMF will consist of-
  - an inter-ministerial committee
  - a steering committee
- **Inter-ministerial committee**
  - The **inter-ministerial committee** will be convened by NITI Aayog and headed by its CEO, and comprise senior officials from the ministries of petroleum and natural gas; power; new and renewable energy; coal; environment, forest and climate change; and department of science and technology.
  - **Functions:** This committee will review the studies/modelling activitiesand provide directions and new areas of research.
- **Steering committee**
  - The **steering committee** will comprise representatives of the:
    - Government(ministries of environment, forestandclimate change; new and renewable energy; statistics and programme implementation; Technology Information Forecasting and Assessment Council; Coal Controller's Organization; Petroleum Planning and Analysis Cell; Central Electricity Authority; and NITI Aayog)
    - Industry Associations(FICCI and CII)
    - Academia(IIT Bombay, Ahmedabad, and Delhi)
    - Policyresearch organizations, think tanks and funding agencies(Prayas Energy Group; Shakti Sustainable Energy Foundation, CEEW, CSTEP, IRADe, TERI, GIZ, DFID, WRI, PNNL, IIASA).
  - **Functions:** This committee will shortlist policy issues to be taken up for study and might form various taskforces depending on the specific studies/modelling exercises to be carried out.

India and US's collaboration on Energy

- India and the US have a long-standing collaboration on energy.
- The Sustainable Growth pillar, one of the four of the US–India SEP, is being chaired by NITI Aayog and USAID.
- This pillar brings together Indian and USresearchers and decision-makers to collaborate in three focal areas:
  - energy data management
  - energy modelling
  - promotion of low carbon technologies
- IEMF was launched under the area of energy modelling.
- Through collaborations with global energy modelling forums, such as Stanford Energy Modelling Forum and Energy Modelling Platform for Europe,IEMFhopes to share and learn from best practices.

5 Regional Raw Drug Repository

CONTEXT:

Ministry of Ayush inaugurated the Regional Raw Drug Repository (RRDR) for ASU&H Medicine (Southern Plateau Region).

ABOUT:

- RRDRs are important components of the Centrally Sponsored Scheme of National **AYUSH Mission**, which plays an important role in medicinal plants cultivation.
- As a step in this direction, Ministry of AYUSH, through the National Medicinal Plants Board, initiated establishment of National Raw Drug Repository and Regional Raw Drug Repositories.
- This RRDR would play a stellar role in collection, documentation, and authentication of raw drugs collected from the agro-climatic region, that is, the Southern Plateau Region.
- There is a global resurgence in the traditional and alternative health care system. We in India are fortunate to have systems of medicine which date back to more than 3000 years and have deep rooted societal acceptance.
- Ayurveda, Siddha, Unani and systems of medicine are accessible to large segment of our population including those living in remote and interior areas.
- This RRDR will not only act as collection centers of raw drugs available and used in southern region but also as an accredited reference library for authentication of raw drugs and establish standard protocols and keys for authentication of raw drug used in the herbal industries.

AYUSH:

- AYUSH is the acronym of the medical systems that are being practiced in India such as Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homeopathy.
- These systems are based on definite medical philosophies and represent a way of healthy living with established concepts on prevention of diseases and promotion of health.
- The basic approach of all these systems on health, disease and treatment are holistic. Because of this, there is a resurgence of interest on AYUSH systems.
- Yoga has now become the icon of global health and many countries have started integrating it in their health care delivery system.
- Similarly there is great curiosity to understand the principles and practice of Ayurveda, Homeopathy, Siddha and Unani especially due to growing challenges in medicine in Non Communicable Diseases (NCDs), Life style disorders, long term diseases, multi drug resistant diseases, emergence of new diseases etc.
- In 1995, with the objective of optimal and focused development of these systems, the Department of Indian Medicine and Homeopathy (ISM & H) was created in the Union Ministry of Health and Family Welfare. In 2003, this Department was re named as Department of AYUSH.

6 Project STARS

CONTEXT:

Cabinet approves Rs. 5718 crore World Bank aided project STARS.

The Union Cabinet has approved the following:

- Implementation of the **Strengthening Teaching-Learning and Results for States** (STARS) project with a total project cost of Rs 5718 crore with the financial support of World Bank amounting to US $ 500 million .
- STARS project would be implemented as a new Centrally Sponsored Scheme under **Department of School Education and Literacy, Ministry of Education. (MOE)**

- Setting up and support to the National Assessment Centre, PARAKH as an independent and autonomous institution under Department of School Education and Literacy, MOE.
- The STARS project seeks to support the states in developing, implementing, evaluating and improving interventions with direct linkages to improved education outcomes and school to work transition strategies for improved labour market outcomes.
- The overall focus and components of the STARS project are aligned with the objectives of National Education Policy (NEP) 2020 of Quality Based Learning Outcomes.
- The Project envisions improving the overall monitoring and measurement activities in the Indian School Education System through interventions in selected states.
- The project shifts focus from the provision of inputs and maintaining of outputs to actual outcomes by linking the receipt and disbursement of funds to these outcomes.

The STARS Project has two major components:

- **At the national level, the project envisages the following interventions which will benefit all states and UTs:**
  - To strengthen MOE's national data systems to capture robust and authentic data on retention, transition and completion rates of students.
  - To support MOE in improving states PGI scores by incentivizing states governance reform agenda through SIG (State Incentive Grants).
  - To support the strengthening of learning assessment systems.
  - To support MOE's efforts to establish a National Assessment Center (PARAKH).
- **At the State level, the project envisages:**
  - Strengthening Early Childhood Education and Foundational Learning
  - Improving Learning Assessment Systems
  - Strengthening classroom instruction and remediation through teacher development and school leadership
  - Governance and Decentralized Management for Improved Service Delivery.
  - Strengthening Vocational education in schools through mainstreaming, career guidance and counselling, internships and coverage of out of school children

7 Laser Guided ATGM]

CONTEXT:

The indigenously developed **Laser Guided Anti Tank Guided Missile (ATGM)** was successfully test fired defeating a target located at longer range.

ABOUT:

- This ATGM — which is yet to receive an operational name — is designed to be fired from tanks.
- With its range limited to 1.5 to 5 kilometers, it locks and tracks the targets with the help of laser designation to ensure precision in striking the target.
- The missile uses a 'tandem' High Explosive Anti Tank (HEAT) warhead.
  - The term tandem refers to the missiles using more than one detonation in order to effectively penetrate the protective armours.
- This missile has the capacity of piercing armoured vehicles which use specially designed armour plates to counter the impact of such projectiles.

- It has been developed with multiple-platform launch capability and is currently undergoing technical evaluation trials from 120 mm rifled gun of MBT Arjun.

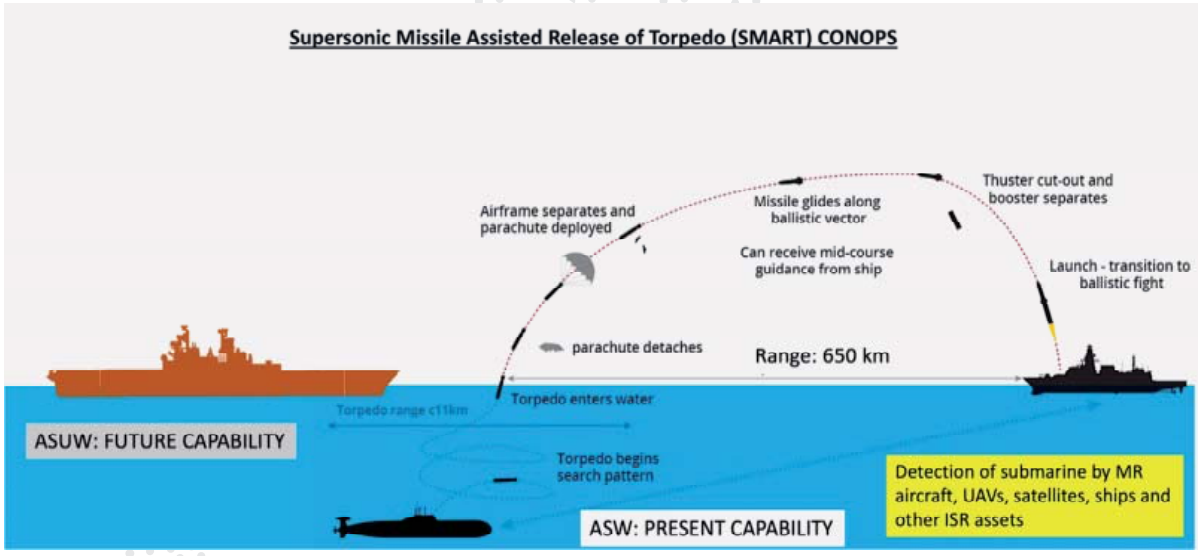
8 Supersonic Missile Assisted Release of Torpedo (SMART)

CONTEXT:

Supersonic Missile Assisted Release of Torpedo (SMART) has been successfully flight tested from Wheeler Island off the coast of Odisha.

ABOUT:

- SMART is a missile assisted release of lightweight Anti-Submarine Torpedo System for Anti-Submarine Warfare (ASW) operations far beyond Torpedo range.
- The SMART system combines a solid fuel rocket with a lightweight torpedo (LWT) as its warhead.
- It takes off like a regular supersonic missile when launched from a warship or a truck-based coastal battery.
- Most of its flight in the air is covered at lower altitudes with two-way data link from the warship or an airborne submarine target detection system.
- It is also provided the exact location of the hostile submarine to correct its flight path midway.
- When it approaches close to a submerged submarine, the missile would eject the torpedo system into the water and the torpedo will start moving towards its target to hit the submarine.



Key-highlights

- All the mission objectives including missile flight upto the range and altitude, separation of the nose cone, release of Torpedo and deployment of Velocity Reduction Mechanism (VRM) have been met perfectly.
- The tracking stations (Radars, Electro Optical Systems) along the coast and the telemetry stations including down range ships monitored all the events.
- This launch and demonstration is significant in establishing Anti-Submarine warfare capabilities.

9 New insights into LEDs emitting high-quality white light

CONTEXT:

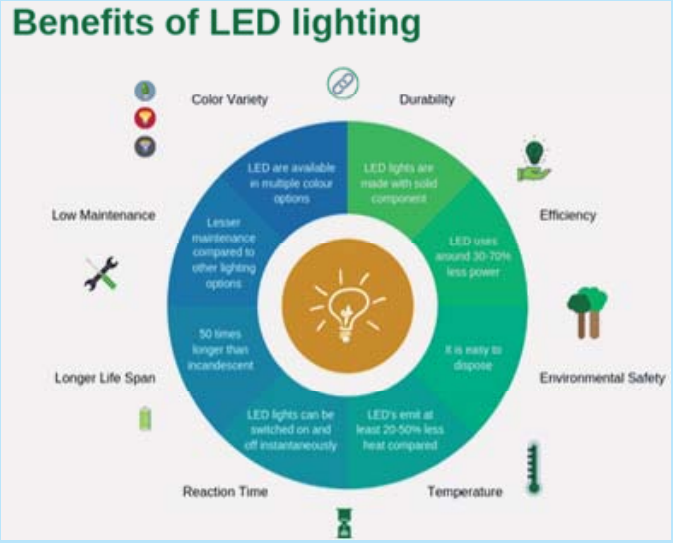
Scientists at CeNS found new insights into LEDs emitting high-quality white light.

ABOUT:

- **What scientists have found?**
  - Scientists have unearthed crucial reaction insights that can help design white LEDs.
  - They found that though **nanocrystals** of inorganic chemicals **caesium lead halide** show the promise of white light emission, a very odd behaviour of the nanocrystals prevented them from keeping that promise.
  - The capability of white light emission rests in the fact that the emission from these crystals can be easily tuned over the entire visible spectrum by varying their halide compositions.
  - However, they failed to emit white light due to an **interparticle** mixing between the **nanocrystals** that resulted in a single emission.
  - White light needs the presence of red, green and blue spectra of light. So, once the crystals give a single emission, they miss the chance of creation of white light.

Light Emitting Diodes (LED):

- LEDs are among the most widely used of all the different types of semiconductor diodes available today and are commonly used in TV's and colour displays.
- They are the most visible type of diode that emit a fairly narrow bandwidth of either visible light at different coloured wavelengths, invisible infra-red light for remote controls or laser type light when a forward current is passed through them.



- Light emitting diodes are made from a very thin layer of fairly heavily doped semiconductor material and depending on the semiconductor material used and the amount of doping, when forward biased an LED will emit a coloured light at a particular spectral wavelength.
- When the diode is forward biased, electrons from the semiconductors conduction band recombine with holes from the valence band releasing sufficient energy to produce photons which emit a monochromatic (single colour) of light.
- Because of this thin layer a reasonable number of these photons can leave the junction and radiate away producing a coloured light output.

Significance of the findings

- The findings from the present work were **recently published in the journal '*Nanoscale*'**.
- The understanding of this reaction kinetics will help in developing strategies to prevent interparticle mixing, and the team is pursuing research to create LED that produce good quality white light

10 Map reconstructing solar magnetic field

CONTEXT:

Map reconstructing solar magnetic field from 1915 to 1965 can help predict Sun's future.

How can magnetic field map help?

- A magnetic field map corresponding to the first half of the last century has been developed recently that can immensely improve that understanding.
- Just like in case of climate studies, astronomers need information of the behaviour of the Sun in the past to predict how it will behave in the future.
- A critical parameter of the behaviour is the magnetic field which keeps varying and governs the long-time changes in the Sun.
- Technology today has enabled direct observations of magnetic field, but there are no direct observations of magnetic field recorded before 1960s.
- The map of this period corresponding to the solar cycles 15 -19 will help us understand the magnetic variability and predict changes in the Sun in the future.
- The map will also help study with precision polar reversal, a unique feature of the Sun, which occurs every 11 years and shows distinct pattern that repeats over time.

Solar magnetic field:

- Solar magnetic field can be described as it threads its way from the bottom of the convection zone, where it is built up by the solar dynamo, to the solar surface, where it manifests itself in the form of sunspots and faculae, and beyond into the outer solar atmosphere and, finally, into the heliosphere.
- On the way it, transports energy from the surface and the subsurface layers into the solar corona, where it heats the gas and accelerates the solar wind.

11 Radiation Missile (RUDRAM)

CONTEXT:

DRDO successfully flight tests Indigenously Developed **Anti Radiation Missile (RUDRAM).** The missile was launched from SU-30 MKI fighter aircraft.

ABOUT:

- The RUDRAM is first indigenous anti-radiation missile of the country for Indian Air Force (IAF).
- It is developed by **Defence Research and Development Organisation (DRDO).**
- The missile is integrated on SU-30 MKI fighter aircraft as the launch platform, having capability of varying ranges based on launch conditions.

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IAS 2021 TEST SERIES

MAINS & PRELIMS

BATCH 03 — MAINS TEST SERIES 2021
GS MAINS Q&A — 24 OCTOBER

BATCH 04 — **INTEGRATED TEST SERIES** *for* MAINS *cum* PRELIMS — 31 OCTOBER

BATCH 01 — **ETHICS & ESSAY TEST SERIES** *A Solution For 500 Marks* — 17 OCTOBER

BATCH 01 — **PRELIMS 2021 TEST SERIES** PRELIMS PRACTICE PROGRAMME (PPP) — 07 NOVEMBER

OPTIONAL TEST SERIES 2021

POLITICAL SCIENCE
TEST SERIES 2021
By: Dr. PIYUSH CHOUBEY
TEST STARTS 18 OCTOBER

HISTORY
TEST SERIES 2021
By: PIYUSH KUMAR
TEST STARTS 31 OCTOBER

GEOGRAPHY
TEST SERIES 2021
By: PRINCE MISHRA
TEST STARTS 01 NOVEMBER

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- It has **INS-GPS navigation** with **Passive Homing Head** for the final attack.
- The RUDRAM hit the radiation target with pin-point accuracy.
- The Passive Homing Head can detect, classify and engage targets over a wide band of frequencies as programmed.
- The missile is a potent weapon for IAF for Suppression of Enemy Air Defence effectively from large stand-off ranges.
- With this, the country has established indigenous capability to develop long range air launched anti-radiation missiles for neutralising enemy Radars, communication sites and other RF emitting targets.

12 Artificial Intelligence (AI) and Machine Learning (ML)

CONTEXT:

MSME Ministry introduced Artificial Intelligence (AI) and Machine Learning (ML) strengthening its Single Window System Portal 'Champions' to assist MSMEs of the country.

ABOUT:

- This multi-modal system has a portal at virtual level and technology equipped physical control rooms at around 69 locations of the country.
- It has emerged as one of the front runner platforms for the MSMEs in a very short span of time.

Artificial intelligence (AI):

- Artificial intelligence (AI), is intelligence demonstrated by machines, unlike the natural intelligence displayed by humans and animals.
- Leading AI textbooks define the field as the study of "intelligent agents": any device that perceives its environment and takes actions that maximize its chance of successfully achieving its goals.
- Colloquially, the term "artificial intelligence" is often used to describe machines (or computers) that mimic "cognitive" functions that humans associate with the human mind, such as "learning" and "problem solving".
- Machine learning: It is an application of artificial intelligence (AI) that provides systems the ability to automatically learn and improve from experience without being explicitly programmed. Machine learning focuses on the development of computer programs that can access data and use it learn for themselves.

Artificial Intelligence	Machine Learning
AI is human intelligence demonstrated by machines to perform simple to complex tasks.	It provides machines the ability to lean and understand without being explicitly programmed.
The idea behind AI is to program machines to carry out tasks in more human ways or smart ways.	The key to teaching computers to think and understand like we do is machine learning.
It is based on characteristics of human intelligence.	It is based on the system of probability.

It is used in healthcare, finance, transportation, aviation, marketing, media, education, etc.	It is used for optical character recorginition, web security, imitation learning, etc.

13 Hydrogen Fuel Cell

CONTEXT:

Council of Scientific and Industrial Research (CSIR) and KPIT successfully ran trials of **India's first Hydrogen Fuel Cell (HFC) prototype car** running on an indigenously developed **fuel cell stack.**

ABOUT:

- The fuel cell is a low temperature **PEM (Proton Exchange Membrane)** type Fuel Cell that operates at 65-75 degree centigrade, which is suitable for vehicular applications.
- The heart of the PEM fuel cell technology includes the membrane electrode assembly, which is wholly a CSIR knowhow.
- The fuel cell stack uses extremely thin metal bipolar plates, thus reducing the stack weight by about two-thirds.
- The trials were run on a battery-electric passenger car platform retrofitted with the Fuel Cell Stack. **However, it is expected that the technology is more suited for commercial vehicles (CV) such as buses and trucks.**
- **Battery electric buses/ trucks require a large battery to achieve the desired operating range.**
- **In comparison, HFC technology requires a much smaller battery for a very large operating range. Hence, HFC technology offers more promise for the CV segment.**
- The FC vehicle is fitted with a Type III commercial hydrogen tank. Its capacity is around 1.75 Kgs of H2 stored at about 350 bar pressure, the FC vehicle should run for approximately 250 Km range under typical Indian road conditions at moderate speed of 60-65 Km/hr.

Hydrogen Fuel Cell (HFC):

- Hydrogen Fuel Cell (HFC) technology uses chemical reactions between hydrogen and oxygen (from air) to generate electrical energy, eliminating the use of fossil fuels.
- Further, the fuel cell technology emits only water, thus cutting down the emission of harmful greenhouse gases along with other air pollutants.
- The technology, with further adoption and use, is poised to make the world a cleaner place with reduced air pollution levels.

14 RAISE 2020

CONTEXT:

Ministry of Electronics and Information Technology (MeitY) and NITI Aayog organized a Global Virtual Summit on Artificial Intelligence (AI), ***RAISE 2020- 'Responsible AI for Social Empowerment 2020***.

ABOUT:

- RAISE 2020 had dedicated session on building inclusive AI that empowers one billion plus Indians.
- Home to the world's third largest startup ecosystem, elite science and technology institutions like the IITs, robust and ubiquitous digital infrastructure, and millions of newly-minted STEM graduates every year, India is well-positioned to become a global leader in the development of artificial intelligence.
- Industry analysts predict that AI could add up to USD 957 billion to India's economy by 2035.
- From agriculture to fin-tech and healthcare to infrastructure, artificial intelligence can be a truly transformative force. India is uniquely positioned to become the AI laboratory of the world and contribute to inclusive development and growth through empowerment.
- The RAISE 2020 Summit will serve as a platform for discussion and consensus building to help create a data-rich environment, which is a stepping stone to eventually transform lives globally.
- It will facilitate an exchange of ideas to create mass awareness about the need to ethically develop and practice AI.

RAISE 2020:

- RAISE 2020 is a first of its-kind, global meeting of minds on Artificial Intelligence to drive India's vision and roadmap for social transformation, inclusion and empowerment through responsible AI.
- Organized by Government of India along with Ministry of Electronics and Information Technology and NITI Aayog ,the event witnessed robust participation from global industry leaders, key opinion makers, Government representatives and academia.

15 International Solar Alliance (ISA)

CONTEXT:

India and France re-elected as President and Co- President of the International Solar Alliance (ISA) at the third assembly of the ISA.

Key-highlights of the Third Assembly of the ISA

- **Vice-Presidents:** Four new Vice-Presidents were chosen to represent the four regions of ISA. The representatives of-
  - Fiji & Nauru for **Asia Pacific Region**
  - Mauritius & Niger for **Africa Region**
  - UK & Netherlands for **Europe and others Region**
  - Cuba and Guyana for **Latin America and Caribbean Region**
- The Assembly also approved the initiatives of the ISA Secretariat in institutionalizing ISA's engagement with the private and public corporate sector through the **Coalition for Sustainable Climate Action (CSCA).**
- For the first time since the inception of the framework agreement of ISA, **Solar awards** were conferred on countries of the region as well as institutions working for solar.
- The assembly witnessed the conferment of the **Visvesvaraya award** which recognizes the countries with maximum floating solar capacity in each of the four regions of ISA.

- The awards went to Japan for the Asia Pacific region and the Netherlands for Europe and Others region.

- In the wake of the global pandemic, ISA responded by setting up **ISA CARES**
  - It is an initiative dedicated to deployment of solar energy in healthcare sector in LDC/SIDS ISA Member countries.
  - The initiative aims to solarize one primary health sector in each district of the target Member countries.
- Recognizing that there is a growing demand globally for cooling and heating utilities, the ISA Secretariat has launched launching a **Seventh Programme on Solarizing Heating and Cooling systems,** which significantly draws it energy from traditional power sources.

International Solar Alliance (ISA):

- The ISA is an initiative that was launched by the Prime Minister of India and the President of France on 30 November 2015 at Paris, France on the side-lines of the COP-21.
- The overarching objective of the ISA is to collectively address key common challenges to the scaling up of solar energy in ISA member countries.
- It also aims to undertake joint efforts required to reduce the cost of finance and the cost of technology, mobilize investments needed for massive deployment of solar energy, and pave the way for future technologies adapted to the needs.
- ISA has been positioned to help create the conditions that would make funding, developing and deploying solar applications on a large scale a reality.
- ISA is perceived as a key organisation working towards achieving the 2030 Sustainable Development Goals and objectives of the Paris Agreement on Climate Change.
  - The **First Assembly of the ISA** was held from 2 to 5 October 2018 in Greater Noida, India and was inaugurated by Prime Minister of India and Mr. António Guterres, UN Secretary General.
  - The **Second Assembly of the ISA** was convened from 30 October to 1 November 2019 at New Delhi, India. 78 countries participated in this Assembly.
  - The **Third Assembly of the ISA** is being convened on 14 to 16 October 2020 in virtual mode.

16 Global climate events over last 3200 years

CONTEXT:

Global climate events over last 3200 years may have caused variations in Indian Summer Monsoon impacting landscape, vegetation and socio-economic growth: A recent study by Wadia Institute of Himalayan Geology (WIHG).

ABOUT:

- Global climatic events like the **Roman Warm Period, Medieval Climate Anomaly, and the Little Ice Age** may have had significant impacts on India's landscape, vegetation, and socio-economic growth, with abrupt shifts in the Indian Summer Monsoon (ISM) coinciding with these climatic events.
- The new study shows **wet monsoon conditions** in the **North-Western Himalaya** between 1200 and 550 BCE.

- This condition prevailed till 450 AD, coinciding with the Roman Warm Period (RWP).
- It was followed by reduced precipitation and a weak ISM till 950 AD and then strengthened during the Medieval Climate Anomaly (MCA) between 950 and 1350 AD.
- During the Little Ice Age, there was a pronounced reduction in monsoon precipitation

- The study carried out with lake sediments from Rewalsar Lake could resolve the long debate among scientists about whether such events were local or global.
  - Rewalsar Lake is a freshwater lake from Mandi district of Himachal Pradesh,
- Sediments from this lake preserve signature that can be used as proxies to understand monsoon variability in the past.
- In the recent study published in the journal 'Quaternary International', researchers obtained grain size data, stable isotope ratios of carbon and nitrogen, total organic carbon (TOC), and total nitrogen data from the sediments of the lake.
  - They retrieved a sediment core of 15-meter length from the center of the lake at a water depth of about 6.5 meters using piston corer, which was used as a sample.
- The chronology of Rewalsar Lake sediment was then established based on the Accelerator Mass Spectrometry (a form of mass spectrometry to separate a rare isotope from an abundant neighbouring mass) (AMS) 14C radiocarbon dates of fourteen samples and the age ranges from approximately 2950 years to 200 years ago.
- Calculation of Total organic carbon TOC, Total Nitrogen TN, and **depleted Carbon isotope ratio** values during the interval 1200 to 550 BCE indicated wet monsoon conditions in the North-Western Himalaya.
  - This condition prevailed till 450 AD, coinciding with the Roman Warm Period (RWP).
  - This was followed by reduced precipitation and a weak ISM till 950 AD.
  - The ISM became comparatively stronger during the Medieval Climate Anomaly (MCA) between 950 to 1350 AD.
  - During the Little Ice Age, there was a pronounced reduction in ISM precipitation, as indicated by relatively low C/N ratio and decreased TOC content.
- The findings pointed out to revival of wet climatic conditions with a strong ISM around 1600 AD following the Little Ice Age, which prevails in present times.
- The variability of ISM in historical past needs to be ascertained to understand present, and future behaviour of ISM as climate shifts and water supply has dictated flourish and demise of ancient civilizations.

The Little Ice Age (LIA):

- It was a period of cooling that occurred after the Medieval Warm Period. Although it was not a true ice age, the term was introduced into scientific literature by François E. Matthes in 1939.
- It has been conventionally defined as a period extending from the 16th to the 19th centuries, but some experts prefer an alternative time span from about 1300 to about 1850.
- The NASA Earth Observatory notes three particularly cold intervals: one beginning about 1650, another about 1770, and the last in 1850, all separated by intervals of slight warming.
- The Intergovernmental Panel on Climate Change Third Assessment Report considered the timing and areas affected by the Little Ice Age suggested largely independent regional climate changes rather than a globally synchronous increased glaciation. At most, there was modest cooling of the Northern Hemisphere during the period.

- Several causes have been proposed: cyclical lows in solar radiation, heightened volcanic activity, changes in the ocean circulation, variations in Earth's orbit and axial tilt (orbital forcing), inherent variability in global climate, and decreases in the human population (for example from the Black Death and the epidemics emerging in the Americas upon European contact.

17 Persistent Organic Pollutants

CONTEXT:

Cabinet approves Ratification of seven Persistent Organic Pollutants listed under Stockholm Convention and delegate its powers for future ratifications for streamlining the procedure.

ABOUT:

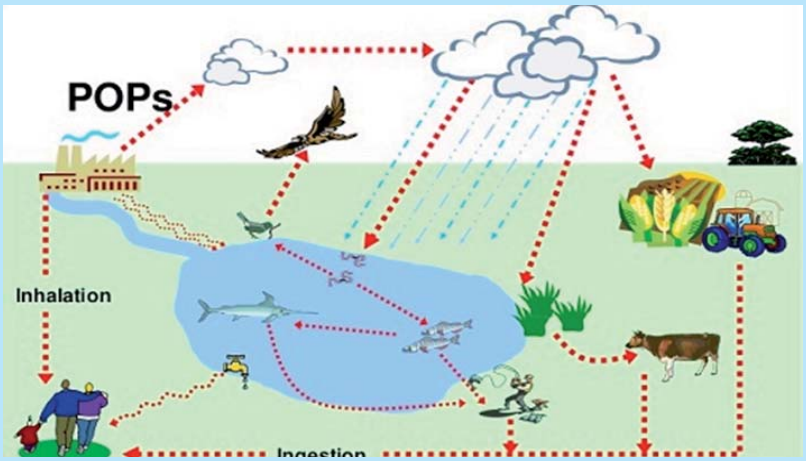
- The regulation *inter alia* prohibited the manufacture, trade, use, import and export seven chemicals namely-
  - Chlordecone
  - Hexabromobiphenyl
  - Hexabromodiphenyl ether and Heptabromodiphenylether (Commercial octa-BDE)
  - (Tetrabromodiphenyl ether and Pentabromodiphenyl ether (Commercial penta-BDE)
  - Pentachlorobenzene
  - Hexabromocyclododecane
  - Hexachlorobutadiene
- They were already listed as POPs under Stockholm Convention.

Significance of the decision

- The Cabinet's approval for ratification of POPs demonstrates India's commitment to meet its international obligations with regard to protection of environment and human health.
- It also indicates the resolve of the Government to take action on POPs by implementing control measures, develop and implement action plans for unintentionally produced chemicals, develop inventories of the chemicals' stockpiles and review as well as update its National Implementation Plan (NIP).
- The ratification process would enable India to access Global Environment Facility (GEF) financial resources in updating the NIP.

Persistent organic pollutants (POPs) :

- These are chemicals of global concern due to their potential for long-range transport, persistence in the environment, ability to bio-magnify and bio-accumulate in ecosystems, as well as their significant negative effects on human health and the environment.
- Humans are exposed to these chemicals in a variety of ways: mainly through the food we eat, but also through the air we breathe, in the outdoors, indoors and at the workplace.



- Many products used in our daily lives may contain POPs, which have been added to improve product characteristics, such as as flame retardants or surfactants. As a result, POPs can be found virtually everywhere on our planet in measurable concentrations.
- The most commonly encountered POPs are organochlorine pesticides, such as DDT, industrial chemicals, most notably polychlorinated biphenyls (PCB), as well as unintentional by-products of many industrial processes, especially polychlorinated dibenzo-p-dioxins (PCDD) and dibenzofurans (PCDF), commonly known as 'dioxins'.
- POPs bio-magnify throughout the food chain and bio-accumulate in organisms. The highest concentrations of POPs are thus found in organisms at the top of the food chain. Consequently, background levels of POPs can be found in the human body.
- Human exposure - for some compounds and scenarios, even to low levels of POPs - can lead, among others, to increased cancer risk, reproductive disorders, alteration of the immune system, neurobehavioural impairment, endocrine disruption, genotoxicity and increased birth defects.

The Stockholm Convention:

- The Stockholm Convention is a global treaty to protect human health and environment from POPs, which are identified chemical substances that persist in the environment, bio-accumulate in living organisms, adversely affect human health/ environment and have the property of long-range environmental transport (LRET).
- India had ratified the Stockholm Convention on January 13, 2006 as per Article 25(4), which enabled it to keep itself in a default "opt-out" position such that amendments in various Annexes of the convention cannot be enforced on it unless an instrument of ratification/ acceptance/ approval or accession is explicitly deposited with UN depositary.

18 Memorandum of Cooperation in the field of Cyber security between India and Japan

CONTEXT:

The Union Cabinet has given its approval for signing a Memorandum of Cooperation (MoC) in the field of cyber security between India and Japan.

ABOUT:

- The MoC will enhance cooperation in areas of mutual interest, which included-
  - capacity building in the area of cyberspace;
  - protection of critical infrastructure
  - cooperation in emerging technologies
  - sharing information on cyber security threats/incidents and malicious cyber activities, as well as best practices to counter them
  - Developing joint mechanisms for practical cooperation to mitigate cyber threats to the security of Information Communication Technology (ICT) infrastructure etc.
- India and Japan commit to an open, interoperable, free, fair, secure and reliable cyberspace environment and to promote the Internet as an engine of innovation, economic growth, and trade and commerce that would be consistent with their respective domestic laws and international obligations, and with their wide-ranging strategic partnership.
- Both sides, through the MoC, affirm cooperation in the international arena including in the United Nations;
  - Discussing and sharing strategies and best practices to promote the integrity of the supply chain of ICT products
  - Strengthening the security of ICT infrastructure through Government-to-Government and Business-to-Business cooperation
  - Continuing dialogue and engagement in Internet governance fora, and to support active participation by all the stakeholders of the two countries in these fora.

19 Memorandum of Cooperation in the field of Cyber security between India and Japan

CONTEXT:

The Cabinet Committee on Economic Affairs has approved 'Natural Gas Marketing Reforms', taking another significant step to move towards gas based economy.

OBJECTIVE:

- The objective of the policy is to prescribe standard procedure to discover market price of gas to be sold in the market by gas producers, through a transparent and competitive process, permit Affiliates to participate in bidding process for sale of gas and allow marketing freedom to certain Field Development Plans (FDPs) where Production Sharing Contracts already provide pricing freedom.
- The policy aims to provide standard procedure for sale of natural gas in a transparent and competitive manner to discover market price by issuing guidelines for sale by contractor through e-bidding.
- This will bring uniformity in the bidding process across the various contractual regimes and policies to avoid ambiguity and contribute towards ease of doing business.
- The policy has also permitted Affiliate companies to participate in the bidding process in view of the open, transparent and electronic bidding.
- This will facilitate and promote more competition in marketing of gas. However, rebidding will have to be done in case only affiliates participate, and there are no other bidders.
- The policy will also grant marketing freedom to the Field Development Plans (FDPs) of those Blocks in which Production Sharing Contracts already provide pricing freedom.

- These reforms will build on a series of transformative reforms rolled out by the Government in last several years.

These reforms in gas sector will further deepen and spur the economic activities in the following areas:

- The whole eco-system of policies relating to production, infrastructure and marketing of natural gas has been made more transparent with a focus on ease of doing business.
- These reforms will prove very significant for Atmanirbhar Bharat by encouraging investments in the domestic production of natural gas and reducing import dependence.
- These reforms will prove to be another milestone in moving towards a gas based economy by encouraging investments.
- The increased gas production consumption will help in improvement of environment.
- These reforms will also help in creating employment opportunities in the gas consuming sectors including MSMEs.
- The domestic production will further help in increasing investment in the downstream industries such as City Gas Distribution and related industries.

20 ADB, India sign $270 million loan to improve urban services

CONTEXT:

The Asian Development Bank (ADB) and the Government of India signed a $270 million loan to develop water supply and integrated storm water and sewage management infrastructure and strengthen capacities of urban local bodies (ULBs) for improved service delivery in the state of Madhya Pradesh.

ABOUT:

- This is an additional financing to scale up the scope of the ongoing Madhya Pradesh Urban Services Improvement Project, which was approved in 2017 with a $275 million loan.
- It will expand the outcome of the current project by covering additional 64 small cities benefiting 185,000 households consisting of about 1.3 million people.
- After signing the loan agreement, the project will improve livability in selected cities with provision of universal access to basic water and sanitation services for the residents.
- This is aligned to the vision of the Government of Madhya Pradesh to improve urban infrastructure services with universal coverage of piped water supply in all urban local bodies by 2025.
- The provision of inclusive water and sanitation services to the urban poor will help achieve Sustainable Development Goal 6 or access to clean water and sanitation for all.
- The project will receive support from the Bill & Melinda Gates Foundation, specifically for the integration of Citywide Inclusive Sanitation principles into the planning, design, implementation, operation, and maintenance of the sanitation subprojects.
- As in the previous loan, the project will support the continued institutional strengthening and capacity building of the Urban Development and Housing Department and Madhya Pradesh Urban Development Company Limited.
- The project will pilot an integrated urban development approach to improve urban service delivery and infrastructure of two urban local bodies.
- ADB's technical support will provide a significant model that can be used to replicate and scale up the enhancement of urban livability in other localities.

Asian Development Bank's (ADB) :

- Founded in 1966, the Asian Development Bank's (ADB) headquarters are in Manila, Philippines. The Asian Development Bank's primary mission is to foster growth and cooperation among countries in the Asia-Pacific Region.
- It has been responsible for a number of major projects in the region and raises capital through the international bond markets.
- The ADB also relies on member contributions, retained earnings from lending, and the repayment of loans for funding of the organization.

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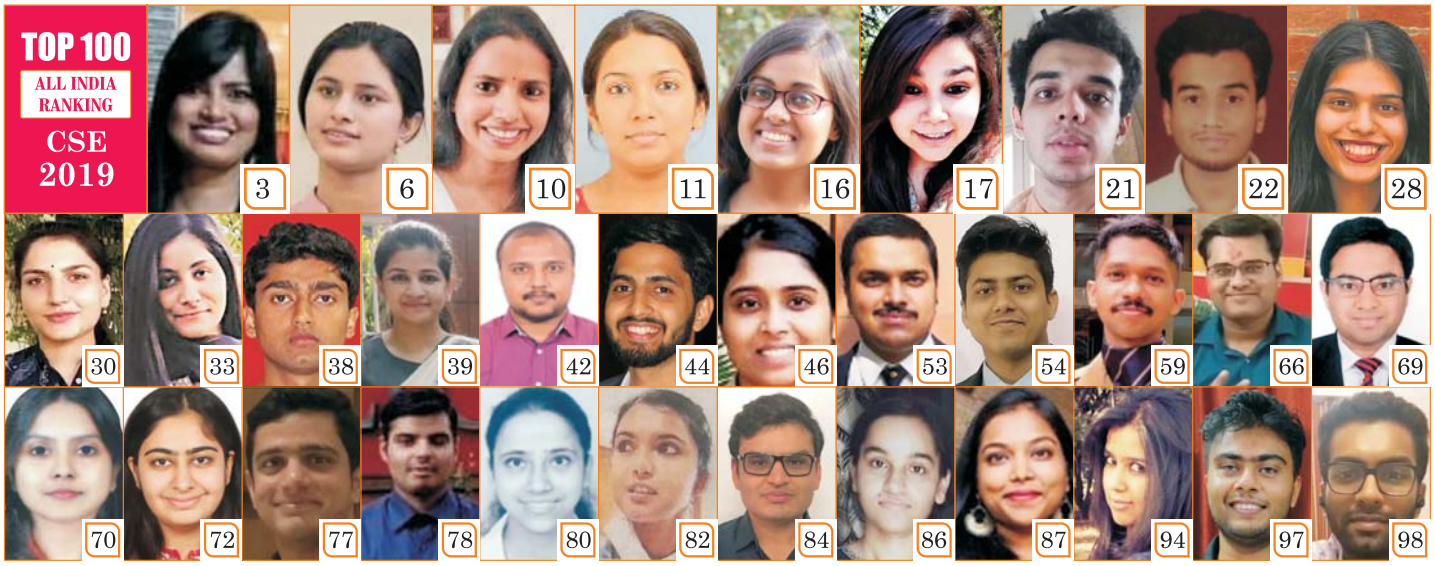

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