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1. NATIONAL AND INTERNATIONAL ISSUES

1.1 Social development

Periodic Labour Force Survey
The latest edition of Periodic Labour Force Survey (PLFS) has been released.

Key Findings:

- The unemployment rate (UR) in both rural and urban India is at its highest since 1972.
- In urban areas, the UR among men is more than twice and has increased twice among women since 2011-12.
- The unemployment rates in urban areas are higher than those in rural areas.
- The overall unemployment rate is 6.1 per cent in India.
- In urban areas, the unemployment rates for females are higher than those for males.
- The unemployment rate among youth between 15 and 29 years has risen sharply since 2011-12.
- The UR has also sharply increased among those who are more educated.
- The unemployment among rural not-literate females has reduced.
Swachh Survekshan 2020 league

- The Ministry of Housing and Urban Affairs (MoHUA) will be launching Swachh Survekshan 2020 League as a quarterly cleanliness assessment of cities and towns in India and will be integrated with Swachh Survekshan 2020 under the aegis of Swachh Bharat Mission-Urban (SBM-U).

Key facts:
- Swachh Survekshan League 2020 will be conducted in 3 quarters, i.e. April-June, July-September and October-December 2019 and will have a weightage of 2000 marks for each quarter to be evaluated on the basis of monthly updation of SBM-U online MIS by cities along with citizen’s validation on the 12 service level progress indicators through outbound calls.
- These two parameters will together determine the quarterly ranking of cities. Ranks will be assigned in two categories, namely, cities with population of one lakh and above and cities with population of less than 1 lakh.
- The performance of cities in SS League 2020 will be crucial to their ranking in Swachh Survekshan 2020 due to the 25% weightage of the quarterly assessments to be included in the annual survey in January 2020.
- The objective is to encourage large scale citizen participation, ensure sustainability of initiatives taken towards garbage free and open defecation free cities, provide credible outcomes validated by third party certification, institutionalize existing systems through online processes and create awareness amongst all sections of society about the importance of working together towards making towns and cities a better place to live in.
- To foster a spirit of healthy competition among towns and cities to improve their service delivery to citizens, towards creating cleaner cities.

Integration of Rural Development & Agriculture Ministry

The Government of India has decided to integrate the Ministry of Agriculture and Rural Development.

The need:
- The success in the rural sector through schemes like “Swachh Bharat” has not been seen vis-a-vis agriculture.
- The flagship rural development schemes have been well-funded. They have been target-oriented with clear deadlines and dashboards tracking implementation on a near real-time basis. The same sense of purpose and scale has been missing in agriculture-specific programmes.
- The inability to make any tangible impact on the ground by schemes of agriculture ministry like e-Nam, soil health cards, Paramparagat Krishi Vikas Yojana, Rashtriya Gokul Mission.

Potential benefits
- Agriculture and rural coming under a single minister is a good thing as it will help bring in synergies.
- The benefits of rural development can be more targeted towards farmers’ welfare.
- It will streamline the decision making process and negate bureaucratic hindrances among different ministries.
Draft of National Education Policy

The Ministry of Human Resources and Development (MHRD) has released the draft of the National Education Policy 2019. The drafting committee, set up in 2017, was led by the Chairman and eminent scientist K Kasturirangan.

Key recommendations:
- The committee has proposed to rename HRD as Ministry of Education (MOE).
- One of the objectives of the draft policy is to achieve foundational literacy in grade 5th and beyond by 2025

School Education
1) The committee proposes a major reconfiguration of curricular and pedagogical structure with Early Childhood Care and Education (ECCE) as an integral part of school education.
2) The Committee also recommends the extension of Right to Education Act 2009 to cover children of ages 3 to 18.
3) It also seeks to reduce the content load in the school education curriculum.
4) There will be no hard separation of learning areas in terms of curricular, co-curricular or extra-curricular areas and all subjects, including arts, music, crafts, sports, yoga, community service, etc., will be curricular, it says.
5) It also proposes an expansion in the midday meal programme which would include a nutritious breakfast and a midday meal for pre-primary and primary school students.
6) The Committee has also recommended teaching of Hindi, English and one regional language in the non-Hindi states. For Hindi-speaking states, the committee has recommended teaching of Hindi, English and one of the modern Indian languages from other parts of the country.

Teacher Education
1) The massive transformation in teacher education by shutting down sub-standard teacher education institutions and moving all teacher preparation or education programmes into large multidisciplinary universities/colleges.
2) The four-year integrated stage-specific BEd programme will eventually be the minimum degree qualification for teachers.

Higher Education
1) A restructuring of higher education institutions with three types of higher education institutions is proposed: focused on world-class research and high-quality teaching, focused on high-quality teaching across disciplines with significant contribution to research, and high-quality teaching focused on undergraduate education. This will be driven by two missions - Mission Nalanda and Mission Takshashila.
- A new apex body, Rashtriya Shiksha Ayog, is proposed to enable a holistic and integrated implementation of all educational initiatives and programmatic interventions and to coordinate efforts between the Centre and the states.
- The National Research Foundation, an apex body is proposed for creating a strong research culture and building research capacity across higher education.
The report proposes the formation of National Higher Education Regulatory Authority (NHERA) as the sole regulator for higher education, including professional education.

It also seeks to transform the UGC to Higher Education Grants Council (HEGC) for disbursing developmental grants and fellowships across the entire higher education sector including professional education.

The private and public institutions will be treated on par and education will remain a 'not for profit' activity.

Several new policy initiatives— for promoting internationalization of higher education, improvising the quality of open and distance learning, to enhance participation of underrepresented groups, and eliminate gender, social category, and regional gaps in education outcomes.

It has also recommended setting up three new national institutes for Pali, Persian, and Prakrit and an Indian Institute of Translation and Interpretation (IITI).

World Population Prospects 2019

The World Population Prospects 2019 has been released by the Population Division of the UN Department of Economic and Social Affairs.

Key Findings:

- India will overtake China as the most populous country by around 2027.
- The global population is projected to increase by another 2 billion people by 2050, from 7.7 billion in 2019.
- Between now and 2050, 55 countries are estimated to see their populations shrink by at least one per cent.
- Overall, the world’s population is ageing, with the age group of 65 and above growing at such a fast rate that by 2050.
- Although overall life expectancy will increase (from 64.2 years in 1990 to 77.1 years in 2050), life expectancy in poorer countries is projected to continue to lag behind.
- Males are projected to continue to outnumber females until the end of the century, but the gap will close.

DNA Technology (Use and Application) Regulation Bill

Highlights of the Bill:

- As per the Bill, national and regional DNA data banks will be set up for maintaining a national database for identification of victims, suspects in cases, undertrials, missing persons and unidentified human remains.
- Those leaking the DNA profile information to people or entities who are not entitled to have it, will be punished with a jail term of up to three years and a fine of up to Rs. 1 lakh. Similar, punishment has also been provided for those who seek the information on DNA profiles illegally.
- As per the bill, all DNA data, including DNA profiles, DNA samples and records, will only be used for identification of the person and not for “any other purpose”.
The Bill establishes a DNA Regulatory Board to accredit the DNA laboratories that analyses DNA samples.

**Significance of the Bill:**
- DNA analysis is an extremely useful and accurate technology in ascertaining the identity of a person from his/her DNA sample, or establishing biological relationships between individuals.
- As a result, DNA technology is being increasingly relied upon in investigations of crime, identification of unidentified bodies, or in determining parentage.
- It is expected that the expanded use of DNA technology would result not only in speedier justice delivery but also in increased conviction rates.

### 1.2 Industrial Development

**Draft Copyright (Amendment Rules), 2019**

Recently, Draft Copyright (Amendment Rules), 2019 was released by the Department for Promotion of Industry and Internal Trade (DPIIT).
- The amendments are being brought in to bring the Copyright Act on par with other relevant legislations and to ensure it is in sync with the technological advancements in the current digital era.
- The copyright regime in India is governed by the Copyright Act, 1957 and the Copyright Rules, 2013.
- The Copyright Rules, 2013 were last amended in 2016 through the Copyright Amendment Rules, 2016.

**Proposals in Draft Rules**
- Setting up an Appellate Board to replace the Copyright Board.
- The Chairman and other members of the Board will be appointed as per the provisions of the Trade Marks Act, 1999.
- It also proposes to amend the manner in which copyright societies fix their tariff schemes.
- A copyright Society is a legal body which protects or safeguards the interest of owners of the work by giving assurance to the creative authors of the commercial management of their works.
- DPIIT has proposed in the amendments that when fixing its tariff the copyright society may consider, “cross-sectional tariff comparisons, economic research, the nature and scope of the use of the work, the commercial value of the rights in use and the benefits to licensees”.
- The amendments propose to make it mandatory for copyright societies to publish “the annual transparency” report for each financial year on its Website.

**Consumer Confidence Survey**

The Reserve Bank of India (RBI) has released the Consumer Confidence Survey for the month of May 2019.

**About the survey:**
- The CCS is conducted in 13 Indian cities.
The RBI’s latest round of CCS shows that depression has gripped urban India as far as economic sentiments are concerned.

The net share of respondents who think they will spend more, either now or a year from now, on non-essential items has fallen to an all-time low since September 2015.

Private Final Consumption Expenditure (PFCE) has had an average share of 56% in India’s GDP between 2014-15 and 2018-19.

A decline in discretionary spending, such as on consumer durables, travel, or even eating out, is leading to a decline in PFCE’s contribution to overall economic growth.

**Private Final Consumption Expenditure (PFCE)**

It is defined as the expenditure incurred on the final consumption of goods and services by the resident households and non-profit institutions serving households.

**National Project Management Policy Framework**

NITI Aayog has suggested the development of a National Project Management Policy Framework for the effective execution of public sector and public-private partnership infrastructure projects.

**Key facts:**

- It has also recommended the setting up of a nodal body for the certification of chartered project management professionals to create world-class infrastructure.
- The project management, with a view to deliver on time and within budget, is a learnable capability that can be institutionalised as demonstrated by the experiences of the U.S., the U.K., the UAE and China.

**World Food Safety Day**

The first-ever World Food Safety Day was celebrated on June 7.

**About the day:**

- It was adopted by the United Nations General Assembly in December 2018 in collaboration with the Food and Agriculture Organization.
- The theme for 2019 is ‘Food safety, everyone’s business’.

- The day aims to create awareness about the importance of maintaining safe food standards and also reduce the burden of deaths due to foodborne diseases.
- The United Nations has designated two of its agencies — the Food and Agriculture Organization (FAO) and the World Health Organization (WHO) — to lead efforts in promoting food safety around the world.
- The UN has developed a guide to discuss why food safety is necessary and how it could be achieved. The guide has five key points:
  1. Governments must ensure safe and nutritious food for all.
  2. Agriculture and food producers need to adopt good
practices.
3. Business operators must make sure food is safe.
4. All consumers have a right to safe, healthy and nutritious food.
5. Food safety is a shared responsibility.

**Defence Space Research Agency (DSRA)**
The Cabinet Committee on Security chaired by the Prime Minister has cleared the setting up of the Defence Space Research Agency (DSRA) which has been entrusted with the task of creating space warfare weapon systems and technologies.

**About the agency:**
- The agency would be provided with a team of scientists and would be working in close coordination with the tri-services integrated defence staff officers.
- It would provide the research and development support to the Defence Space Agency (DSA) which comprises members of the three services (Army, Naval and Air Force).
- The DSA has been created to help the country fight wars in outer space.
- The DSA has been set up in Bengaluru under an Air Vice Marshal-rank officer and will gradually take over the space-related capabilities of the three forces.

**Namma Kolhapuri chappal**
Namma Kolhapuri chappal gets GI boost.
- The approval for GI tag was jointly received by Karnataka and Maharashtra recently for making these chappals.
- These leather chappals are hand-crafted and tanned using vegetable dyes. The art of making them is passed down from one generation to another.

**About GI tag:**
- A GI is primarily an agricultural, natural or a manufactured product (handicrafts and industrial goods) originating from a definite geographical territory.
- Typically, such a name conveys an assurance of quality and distinctiveness which is essentially attributable to the place of its origin.
- Once the GI protection is granted, no other producer can misuse the name to market similar products. It also provides comfort to customers about the authenticity of that product.
- GI is covered as element of intellectual property rights (IPRs) under Paris Convention for the Protection of Industrial Property.
- GI is governed by WTO’s Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS). In India, Geographical Indications of Goods (Registration and Protection Act), 1999 governs it.

**Kaleshwaram Project**
The world’s largest irrigation and drinking water system—Kaleshwaram Multipurpose Lift Irrigation Project—was recently inaugurated in Telangana state.

**About the Project:**
● The Kaleshwaram project aimed to make Telangana drought proof by harnessing the flood waters of the Godavari. The project is an under-construction multi-purpose irrigation project on the Godavari River in Kaleshwaram, Bhoopalpally, Telangana.
● The project starts at the confluence point of Pranahita River and Godavari River.
● Waters of the Godavari will be tapped by reverse pumping and storage, thereby facilitating agriculture on over 38 lakh acres, helping rejuvenate thousands of tanks, providing water for industries, and supplying drinking water to Hyderabad and Secunderabad by creating a series of storage tanks and a network of pipelines.
● The Kaleshwaram project will support Mission Kakatiya and Mission Bhagiratha schemes designed to provide drinking water to many villages and improve the capacities of tanks.

About Lift Irrigation:
Lift irrigation is a method of irrigation in which water instead of being transported by natural flow (as in gravity-fed canal systems) requires external energy through animal, fuel based or electric power using pumps or other mechanical means.

About Mission Bhagiratha
● It is a project for safe drinking water for every village and city household in Telangana State.
● It aims is to provide piped water to 2.32 crore people in 20 lakh households in urban and 60 lakhs in rural areas of Telangana.
● The ambitious project will supply clean drinking water to all households in the state through water sourced from River Godavari and River Krishna.

About Mission Kakatiya
● It is a flagship programme launched by the Government of Telangana.
● It aims at rejuvenation of water tanks and other water storage structures to provide assistance and help to the small and marginal farmers of the state.

The National Accreditation Board for Certification Bodies (NABCB)
The National Accreditation Board for Certification Bodies (NABCB), India’s national accreditation body, secured international equivalence for its accreditation programme for personnel certification.

Significance:
● With the above recognition, NABCB hopes to facilitate export of Indian services and skills into the world market by attesting that persons are certified following international standards by the certifying bodies.
● Personnel Certification would support many professionals in India, especially those who do not have formal education or certificate programme.
● Any person carrying ISO/IEC 17024 certificate with NABCB logo will be recognized internationally.
● It can also be used by regulators for establishing confidence in certified personnel for different activities.
● This signifies that the accreditation of personnel certification bodies by NABCB is now accepted as equivalent at international level.
About NABCB:
- NABCB, a constituent Board of Quality Council of India, an autonomous body attached to the Ministry of Commerce and Industry
- It is responsible for accreditation of certification/inspection bodies as per applicable international standards under an international system of equivalence.
- Accreditation reduces risk for business and its customers by assuring that accredited Conformity Assessment Bodies (CABs) are competent to carry out the work they undertake within their scope of accreditation.

1.3 Economic Development

Digital payments ecosystem in India

RBI appointed committee on digital payments, headed by Nandan Nilekani, has made recommendations for strengthening digital payments ecosystem in India.

Recommendations:
- Removal of transaction charges: There should be no convenience fee on consumers for digital payments made to state run entities and central departments.
- Merchant Discount Rates (MDR) pricing structure: 15 basis points (100 bps = 1% point) cut on the interchange rate on card payments which is borne by the merchants.
- Removal of existing 18% import duty on POS (point of sale) machines for a period of three years.
- Reduce the goods and services tax (GST) on digital transactions so that the acceptance of digital payments can be improved among the customers.
- Digital financial inclusion index so that progress in an area can be measured along a common scale, indicating the evolution of the users and steps taken for correcting the imbalance.
- Reduce the overall cost to the consumers such as KYC (Know your customer) process at multiple stages of the transaction and service charges for digital payments.
- Protection from fraud and risk: payment systems must rely on machine-driven, online dispute resolution systems to handle complaints.
- Setting up an Acceptance development fund: This will be used for developing new merchants in poorly served areas.
- Reduce gap between “digital credits” and “digital debits”: There is a need for improvement on demand or acceptance side of the ecosystem as, high-cost structures, including interchange fees, as well as limited financial service offerings, impede merchants from accepting digital payments.
- Target for additional growth of volume of digital payments by 10 times in three years and the growth will be driven by a shift from high-value, low-volume, high-cost transactions to low-value, high-volume, low-cost transactions.
Inflation in India
Recently, Consumer Price Index: Industrial Labour (CPI:IW) was released by the Ministry of Labour & Employment.

**Measurement of Inflation in India**
1. Wholesale Price Index WPI
   - Published by the Office of Economic Adviser, Ministry of Commerce and Industry.
   - All transactions at the first point of bulk sale in the domestic market are included.
   - It is the most widely used inflation indicator in India.
   - Major criticism for this index is that the general public does not buy products at wholesale price.

Consumer Price Index CPI:
- It measures changes over time in the level of retail prices of selected goods and services on which consumers of a defined group spend their incomes.
- It measures price changes from the perspective of a retail buyer.
- Four types of CPI are as follows:
  1) CPI for Industrial Workers (IW)- compiled by the Labour Bureau in the Ministry of Labour and Employment.
  2) CPI for Agricultural Labourer (AL)- compiled by the Labour Bureau in the Ministry of Labour and Employment
  3) CPI for Rural Labourer (RL)- compiled by the Labour Bureau in the Ministry of Labour and Employment

**Economic Census 2019**
Economic Census is the complete count of all establishment located within the geographical boundary of India.

**Highlights:**
- The Census provides disaggregated information on various operational and structural variables of all establishments of the country.
- Provides valuable insight into geographical spread/clusters of economic activities, ownership pattern, persons engaged, etc. of all economic establishments in the country.
- The information collected during Economic Census are useful for socio-economic developmental planning at state and district levels.
- It provides an updated sampling frame for follow-up enterprise surveys undertaken for detailed and comprehensive analysis of all establishments in the country.

The Seventh Economic Census (7th EC) is being conducted by Ministry of Statistics and Programme Implementation (MoSPI) in 2019.
RBI Monetary Policy

The Reserve Bank of India's (RBI) Monetary Policy Committee (MPC) cut interest rates by 25 basis points. This is the third time successively that the six-member MPC has decided on a 25-basis points rate cut. The last time the RBI had to cut rates three times in a row was in 2013.

About MPC:

- The Monetary Policy Committee of India is responsible for fixing the benchmark interest rate in India.
- The meetings of the Monetary Policy Committee are held at least 4 times a year and it publishes its decisions after each such meeting.
- The committee comprises six members - three officials of the Reserve Bank of India and three external members nominated by the Government of India.
- Decisions are taken by majority with the Governor having the casting vote in case of a tie.
- The members need to observe a "silent period" seven days before and after the rate decision for "utmost confidentiality".

US terminated India’s designation for Generalized System of Preference

US terminated India’s designation as a beneficiary developing nation under the key GSP trade programme after determining that it has not assured the US that it will provide “equitable and reasonable access to its markets”.

About GSP:

- The Generalized System of Preference (GSP) is the largest and oldest US trade preference programme.
- It is designed to promote economic development by allowing duty-free entry for thousands of products from designated beneficiary countries.
- Under the GSP programme, nearly 2,000 products including auto components and textile materials can enter the US.
- India was the largest beneficiary of the programme in 2017 with $5.7 billion in imports to the US given duty-free status.

RBI’s Debt Resolution Norms

The Reserve Bank of India has released fresh guidelines to deal with bad loans.

Revised norms:

- Under the new norms, defaults are to be recognized within 30 days. During this review period of 30 days, lenders may decide on the resolution strategy, including the nature of the resolution plan (RP) and the approach for implementation of the RP.
- The RBI has asked banks to make additional provisions in case of failure to implement a resolution plan within given timelines.
- Resolution plan involving restructuring/change in ownership of accounts where the aggregate exposure of lenders is Rs 100 crore and above, will require independent credit evaluation (ICE) of the residual debt by credit rating agencies (CRAs) specifically authorised by the Reserve Bank for this purpose.
● Accounts with aggregate exposure of Rs 500 crore and above shall require two such ICEs, others shall require one ICE.
● Lenders will have to submit a weekly report to the RBI on defaults by borrowers with exposure of ₹5 crore and above.
● On accounts with aggregate exposure above a threshold with lenders, resolution plan is to be implemented within 180 days from review period and lenders shall undertake a review of the borrower account within thirty days from default.
● Any action by lenders with intent to hide the actual status of accounts or evergreen the stressed accounts, will be subjected to stringent supervisory or enforcement actions, including higher provisioning on such accounts and monetary penalties.
● In order to implement resolution plan, lenders will have to sign inter creditor agreement (ICA), within the review period, (ICA will provide ground rules for finalization and implementation of the resolution plan.)

About Non-Performing Assets:
● A nonperforming asset (NPA) refers to a classification for loans or advances that are in default or are in arrears on scheduled payments of principal or interest.
● In most cases, debt is classified as nonperforming when loan payments have not been made for a period of 90 days.
● While 90 days of nonpayment is the standard, the amount of elapsed time may be shorter or longer depending on the terms and conditions of each loan.

Fund Transfer Systems in India
The Reserve Bank of India has removed charges on fund transfers through RTGS (Real Time Gross Settlement System) and NEFT (National Electronic Funds Transfer) in order to boost digital transactions and asked banks to pass on the benefits to customers.

National Electronic Funds Transfer (NEFT):
● National Electronic Funds Transfer is a nation-wide payment system facilitating one-to-one funds transfer.
● Under this Scheme, individuals, firms and corporates can electronically transfer funds from any bank branch to any individual, firm or corporate having an account with any other bank branch in the country participating in the Scheme.
● The NEFT transactions can be carried out in bulk and repetitively, there is no minimum or maximum cap for NEFT transactions.
● Thought it is one-to-one scheme amount is not dispatched to the beneficiary immediately instead on a batch specified by bank within the NEFT business hour.
● The service is available both in online and offline mode.

Real Time Gross Settlement (RTGS):
● Real Time Gross Settlement is a financial transaction system, where there is continuous and real-time settlement of fund transfers.
● RTGS transactions are processed immediately on a transaction by transaction basis throughout the RTGS business hours.
● RTGS has a minimum limit of 2 lakh rupees with no maximum limit.
● The service is available both in online and offline mode.

**Immediate Mobile Payment Service (IMPS):**
● Immediate Mobile Payment Services is an instant inter-bank funds transfer system.
● This funds transfer method is more customer-centric than the other two as it allows the remitter to transfer funds using their smartphones (only available in online mode).
● Unlike the other two services there is no transaction time for using this fund transfer service (IMPS is 24/7 service) but there is a cap on maximum transaction which is up to 2 Lakhs.
● While NEFT and RTGS was introduced by RBI (Reserve Bank of India), IMPS was introduced by National Payments Corporation of India (NPCI).

**Kimberley Process**

Intersessional meeting of the Kimberley Process (KP) was hosted by India in Mumbai.
● India is currently the Chair of Kimberley Process Certification Scheme (KPCS)

**About Kimberley Process:**
● The Kimberley Process is an international certification scheme that regulates trade in rough diamonds. It aims to prevent the flow of conflict diamonds, while helping to protect legitimate trade in rough diamonds.
● The Kimberley Process Certification Scheme (KPCS) outlines the rules that govern the trade in rough diamonds.
● The KP is not, strictly speaking, an international organisation: it has no permanent offices or permanent staff. It relies on the contributions – under the principle of ‘burden-sharing’ – of participants, supported by industry and civil society observers. Neither can the KP be considered as an international agreement from a legal perspective, as it is implemented through the national legislations of its participants.

**About Kimberley Process Certification Scheme:**
● The Kimberley Process Certification Scheme (KPCS) imposes extensive requirements on its members to enable them to certify shipments of rough diamonds as ‘conflict-free’ and prevent conflict diamonds from entering the legitimate trade.
● Under the terms of the KPCS, participating states must put in place national legislation and institutions; export, import and internal controls; and also commit to transparency and the exchange of statistical data.
● Participants can only legally trade with other participants who have also met the minimum requirements of the scheme, and international shipments of rough diamonds must be accompanied by a KP certificate guaranteeing that they are conflict-free.

**Basel III Norms**

According to a report by the Basel Committee on Bank Supervision (BCBS), the Reserve Bank of India has fallen short of meeting tougher requirements set by the Basel III norms.
Key Facts:
- The report looked at adoption status of Basel III standards by 30 global systemically important banks (G-Sibs) as of end-May 2019.
- The RBI is yet to publish the securitisation framework and rules on Total Loss-Absorbing Capacity (TLAC) requirements. Securitisation framework includes credit enhancement facility, liquidity facility, underwriting facility, interest rate or currency swaps and cash collateral accounts. TLAC requirements ensures that G-Sibs have adequate loss absorbing and recapitalisation capacity so that critical functions can be continued without taxpayers’ funds or financial stability being put at risk.

About Basel III Norms

### Basel III’s 3-Pillar Framework

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- Basel III is an internationally agreed set of measures developed by the Basel Committee on Bank Supervision (BCBS) in response to the financial crisis of 2007-09. The measures aim to strengthen the regulation, supervision and risk management of banks.
- BCBS members are committed to implementing and applying standards in their jurisdictions within the time frame established by the Committee.
- Basel 3 measures are based on three pillars:
  1. Pillar 1: Improve the banking sector's ability to absorb ups and downs arising from financial and economic instability
  2. Pillar 2: Improve risk management ability and governance of banking sector
3. Pillar 3: Strengthen banks' transparency and disclosures

**Basel Committee on Bank Supervision (BCBS)**

- Basel Committee on Bank Supervision (BCBS) is a committee under the Bank For International Settlements.
- Established in 1930, the BIS is owned by 60 central banks, representing countries from around the world that together account for about 95% of world GDP.
- It is the primary global standard setter for the prudential regulation of banks and provides a forum for regular cooperation on banking supervisory matters.
- The Committee identifies global systemically important banks (G-SIBs)
- A global systemically important bank is a bank whose systemic risk profile is deemed to be of such importance that the bank’s failure would trigger a wider financial crisis and threaten the global economy.

**National Anti-Profiteering Authority**

The tenure of National Anti-Profiteering Authority has been extended by 2 years.

**About NAA:**

- The National Anti-Profiteering Authority (NAA) has been constituted under Section 171 of the Central Goods and Services Tax Act, 2017.
- It is to ensure the reduction in rate of tax or the benefit of input tax credit is passed on to the recipient by way of commensurate reduction in prices.
- The Authority’s core function is to ensure that the benefits of the reduction is GST rates on goods and services made by GST Council and proportional change in the Input tax credit passed on to the ultimate consumers and recipient respectively by way of reduction in the prices by the suppliers.
- It shall be headed by a senior officer of the level of a Secretary to the Government of India and shall have four technical members from the Centre and/or the States.

**Functions of Authority:**

- It confirms the necessity of applying anti-profiteering measures, it has the power to order the business concerned to reduce its prices or return the undue benefit availed along with interest to the recipient of the goods or services.
- If the undue benefit cannot be passed on to the recipient, it can be ordered to be deposited in the Consumer Welfare Fund.
- In extreme cases the National Anti-profiteering Authority can impose a penalty on the defaulting business entity and even order the cancellation of its registration under GST.

**Storage of Payment System Data**

The Reserve Bank of India in its directive on 'Storage of Payment System Data' has made it clear that entire payment data shall be stored in systems located only in India.

**Key Facts:**

- All system providers need to ensure that within a period of six months, the entire data relating to payment systems operated by them is stored in a system only in India.
Data stored in India should include end-to-end transaction details and info about payment transactions. The data could be pertaining to:
1) Customer data like name, mobile number, Aadhaar number, PAN.
2) Payment-sensitive data like customer and beneficiary account details.
3) Payment credentials like OTP, PIN.
4) Transaction data such as originating and destination system information amount.

- All data related to payments must be stored only in India and data processed (in case the processing is done abroad) will have to be brought back to the country within 24 hours.
- There is no bar on the processing of payment transactions outside India if so desired by the Payment System Operators (PSO).
- Data stored in India can be accessed or fetched whenever required for handling customer disputes as well as for any other related processing activity, such as chargeback. The data may be shared with the overseas regulator, if so required, depending upon the nature/origin of a transaction with prior approval of the RBI.
- For cross border transaction data, (consisting of a foreign component and a domestic component) a copy of the domestic component may also be stored abroad.

**Funds for Startups (FFS)**

Government of India has established a Fund of Funds for Startups (FFS) with corpus of Rs. 10,000 crore.

**Key Facts:**
- It aims to meet the funding needs of startups.
- Department for Promotion of Industry and Internal Trade (DPIIT) is the monitoring agency and Small Industries Development Bank of India (SIDBI) is the operating agency for FFS.
- The monitoring and review of performance of startups would be linked to the implementation of the action plan to enable execution as per timelines and milestones.
- It would provide a predictable and stable source of funding for the start-up enterprises and thereby facilitate large scale job creation.
- The FFS will play an important role in accelerating innovation driven entrepreneurship and business creation through Start-ups which is crucial for large-scale employment generation in the country to tap the demographic dividend.
- Also known as ‘Funds of Funds for Startups’, it had a disbursal target of Rs 3,300-3,500 crore to venture capital (VC) firms at the end of the financial year ending March 2019.
- It was launched in the year 2016 with the corpus of Rs.10,000 crore, to be built over 14th and 15th Finance Commission cycles. SIDBI manages the fund.
- The government launched this fund to help startups get funding in early stages.
- The fund does not directly invest in startups, instead, it allocates money to VC funds, which are required to invest at least twice the amount of contributions received from the government. A venture capital (VC) fund is a sum of money that investors commit for investment in early-stage companies.
About Start Up India scheme:

- It is a flagship initiative of the Government of India, intended to catalyse startup culture and build a strong and inclusive ecosystem for innovation and entrepreneurship in India.
- Startup India has rolled out several programs with the objective of supporting entrepreneurs, and transforming India into a country of job creators instead of job seekers.
- A startup is an enterprise that is initiated by its founders around an idea or a problem with a potential for significant business opportunity and impact.

Features Of the Scheme:

1. New-entrants are granted a tax-holiday for three years.
2. The government has provided a fund of Rs.2500 crore for startups, as well as a credit guarantee fund of Rs.500 crore rupees.

About SIDBI:

- Small Industries Development Bank of India (SIDBI), set up on 2nd April 1990, under an Act of Indian Parliament, acts as the principal financial institution for promotion, financing and development of the Micro, Small and Medium Enterprise (MSME) sector as well as for coordination of functions of institutions engaged in similar activities.
2. ENERGY AND ENVIRONMENT

2.1 Environment

World Environment Day
On the eve of World Environment Day, Union Environment Ministry has launched a people’s campaign called #SelfieWithSapling, urging people to advocate the cause on social media.

● The theme for 45th World Environment Day is Beat Air Pollution. It is the call for action to combat the global crisis for ‘fresh air’.
● Every June 5th is celebrated as World Environment Day.
● On this day, communities and individuals around the world work to increase awareness of the importance of conserving the environment, the positive global impact of environmental regulations and controls and engage in activities that serve to educate and improve their environment locally.
● The World Environment Day is a part of the United Nations Environmental Program (UNEP) for creating awareness and action worldwide for the environment. The first World Environment Day was celebrated in 1973.

India backs Dhanauri for Ramsar Site Tag
The Ministry of Environment Forest and Climate change has asked Uttar Pradesh forest department, to propose Dhanauri in Greater Noida as a wetland of international importance under Ramsar convention.

Dhanauri as Ramsar site:

● Dhanauri supports a large population of the vulnerable Sarus cranes.
● The wetland meets two criteria (out of nine) to be declared a Ramsar site:
  - The area supports congregation of more than 20,000 waterfowl and other species.
● Once approved, it will be the 28th wetland in India, and the second from UP (after the Upper Ganga river), to be declared a Ramsar site.

About Ramsar Site

● The Convention on Wetlands, called the Ramsar Convention, is the intergovernmental treaty that provides the framework for the conservation and wise use of wetlands and their resources.
● The Convention was adopted in the Iranian city of Ramsar in 1971 and came into force in 1975. Since then, almost 90% of UN member states, from all the world’s geographic regions, have acceded to become “Contracting Parties”.
● The Convention’s mission is “the conservation and wise use of all wetlands through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world”.
● The Convention uses a broad definition of wetlands. It includes all lakes and rivers, underground aquifers, swamps and marshes, wet grasslands, peatlands, oases, estuaries,
deltas and tidal flats, mangroves and other coastal areas, coral reefs, and all human-made sites such as fish ponds, rice paddies, reservoirs and salt pans.

- Under the “three pillars” of the Convention, the Contracting Parties commit to:
  1) work towards the wise use of all their wetlands;
  2) designate suitable wetlands for the list of Wetlands of International Importance (the “Ramsar List”) and ensure their effective management;
  3) cooperate internationally on transboundary wetlands, shared wetland systems and shared species.

**India launches emissions trading programme to reduce air pollution**
In a bid to reduce air pollution and facilitate robust economic growth, the government has launched a emissions trading programme. The pilot programme, the first of its kind in the world, has been initially launched in Gujarat.

**Key Facts:**
- The programme is a market-based system where the government sets a cap on emissions and allows industries to buy and sell permits to stay below the cap.
- It is expected to drastically reduce air pollution at a low cost to both the government and the industry and provide best practices for replicating trading schemes for other emissions.
- The emissions trading programme builds on another early innovation by the Gujarat Pollution Control Board (GPCB), the use of continuous emissions monitoring systems to track industry emissions in real time.
- Globally, cap-and-trade systems have been used to reduce other forms of pollution, such as programmes that have successfully reduced sulfur dioxide (SO2) and nitrogen oxides (NOx) in the US. But the Gujarat programme is the first in the world to regulate particulate air pollution, the single-largest threat to human health globally.

**About Emission Cap and Trade System:**
- Under this, the regulator first defines the total mass of pollution that can be put into the air over a defined period by all factories put together.
- Then, a set of permits is created, each of which allows a certain amount of pollution, and the total is equal to the cap.
- These permits are the quantity that is bought and sold. Each factory is allocated a share of these permits (this could be equal or based on size or some other rule).
- After this, plants can trade permits with each other, just like any other commodity on the National Commodity and Derivatives Exchange Limited (NCDEX).
- Whatever the final allocation, the total number of permits does not change so the total pollution is still equal to the predefined cap.

**River Linking Project**
The National Green Tribunal has stayed the Andhra Pradesh government’s Godavari-Penna interlinking projects due to lack of environmental clearance.

**About the project:**
This project is part of the Godavari-Krishna linkage project and it is to be completed in five phases.

**About Interlinking of River (ILR) programme:**
- Interlinking of River (ILR) programme is of national importance and has been taken up on high priority.
- The mission of this programme is to ensure greater equity in the distribution of water by enhancing the availability of water in drought prone and rain-fed area.
- Under the National Perspective Plan (NPP) prepared by Ministry of Water Resources, NWDA has already identified 14 links under Himalayan Rivers Component and 16 links under Peninsular Rivers Component for inter basin transfer of water based on field surveys and investigation and detailed studies.

**Bharat Stage - VI**

International Centre for Automotive Technology (ICAT) released India’s first Type Approval Certificate (TAC) for Bharat Stage - VI (BS – VI) norms for the two-wheeler segment.

**Key facts:**
- Bharat stage norms are the emission norms which the automotive manufacturers have to comply to sell their vehicles in India. These norms are applicable to all two wheelers, three wheelers, four wheelers, and construction equipment vehicles.
- To curb the growing menace of air pollution through the vehicle's emission, the Government of India has decided to leapfrog from the existing BS – IV norms to the BS- VI, thereby skipping the BS – V norms, and to implement the BS – VI norms with effect from 1st April 2020.
- From 1st April 2020, only those vehicles will be sold and registered in India which complies with these norms.
- The norms are stringent and at par with global standards.

**Difference between BS-IV and the new BS-VI:**
- The major difference in standards between the existing BS-IV and the new BS-VI auto fuel norms is the presence of sulphur.
- The newly introduced fuel is estimated to reduce the amount of sulphur released by 80%, from 50 parts per million to 10 ppm.
- As per the analysts, the emission of NOx (nitrogen oxides) from diesel cars is also expected to reduce by nearly 70% and 25% from cars with petrol engines.

**About International Centre for Automotive Technology (ICAT)**
- ICAT is the premier testing and certification agency authorized by the Ministry of Road Transport and Highways for providing testing and certification services to the vehicle and component manufacturers in India and abroad.
- It has the latest equipment, facilities, and capabilities to develop, validate, test and certify the engines and vehicles for the latest norms in the field of emission and many other facilities like crash lab, NVH lab, EMC lab and test tracks.
The World Day to Combat Desertification and Drought
The World Day to Combat Desertification and Drought is observed every year on 17th June. India for the first time will host the 14th session of the Conference of Parties (COP-14) of the United Nations Convention to Combat Desertification (UNCCD) in September, 2019.

About the day:
- The World Day to Combat Desertification and Drought is observed every year to promote public awareness of international efforts to combat desertification.
- The day is a unique moment to remind everyone that land degradation neutrality is achievable through problem-solving, strong community involvement and cooperation at all levels.
- The Theme of 2019 is “Let’s Grow the Future Together”

About UNCCD
- United Nations Convention to Combat Desertification (UNCCD) was established in 1994, the sole legally binding international agreement linking environment and development to sustainable land management.
- The Convention addresses specifically the arid, semi-arid and dry sub-humid areas, known as the drylands, where some of the most vulnerable ecosystems and peoples can be found.
- UNCCD 2018-2030 Strategic Framework is the most comprehensive global commitment to achieve Land Degradation Neutrality (LDN) in order to restore the productivity of vast expanses of degraded land, improve the livelihoods of more than 1.3 billion people, and reduce the impacts of drought on vulnerable populations to build.
- The Convention’s 197 parties work together to improve the living conditions for people in drylands, to maintain and restore land and soil productivity, and to mitigate the effects of drought.
- The UNCCD is particularly committed to a bottom-up approach, encouraging the participation of local people in combating desertification and land degradation.
- The UNCCD secretariat facilitates cooperation between developed and developing countries, particularly around knowledge and technology transfer for sustainable land management.
- The UNCCD collaborates closely with the other two Rio Conventions:
  1. The Convention on Biological Diversity (CBD).
  2. The United Nations Framework Convention on Climate Change (UNFCCC).

UNCCD Estimate of Desertification
- By 2025, 1.8 billion people will experience absolute water scarcity, and 2/3 of the world’s will be living under water-stressed conditions.
● A complex and slowly encroaching natural hazard with significant and pervasive socio-economic and environmental impacts to cause more deaths and displace more people than any other natural disaster.
● By 2045 some 135 million people may be displaced as a result of desertification.
● Restoring the soils of degraded ecosystems has the potential to store up to 3 billion tons of carbon annually.

Forest landscape restoration (FLR) and Bonn Challenge
The centre has launched a flagship project on enhancing capacity on forest landscape restoration (FLR) and Bonn Challenge in India.

About Bonn Challenge:
● The Bonn Challenge is a global effort to bring 150 million hectares of deforested and degraded land into restoration by 2020 and 350 million hectares by 2030.
● At the UNFCC Conference of the Parties (COP) 2015 in Paris, India also joined the voluntary Bonn Challenge pledge to bring into restoration 13 million hectares of degraded and deforested land by the year 2020, and an additional 8 million hectares by 2030. India’s pledge is one of the largest in Asia.
● The 2020 target was launched at a high level event in Bonn in 2011 organised by the Government of Germany and IUCN, and was later endorsed and extended to 2030 by the New York Declaration on Forests of the 2014 UN Climate Summit.
● Underlying the Bonn Challenge is the forest landscape restoration (FLR) approach, which aims to restore ecological integrity at the same time as improving human well-being through multifunctional landscapes.

About Forest landscape restoration (FLR):
● It is the on-going process of regaining ecological functionality and enhancing human well-being across deforested or degraded forest landscapes.
● FLR is more than just planting trees – it is restoring a whole landscape to meet present and future needs.
● It is long-term because it requires a multi-year vision of the ecological functions.
● The majority of restoration opportunities are found on or adjacent to agricultural or pastoral land. In these situations, restoration must complement and not displace existing land uses.

Jal Shakti Mantralaya
National River Conservation Directorate (NRCD) has been shifted from the Ministry of Environment and Forest and Climate Change to Jal shakti Ministry.
● Move aims at consolidating administration and bringing water-related issues like conservation, development, management, and abatement of pollution under a single ministry.
● National River Conservation Directorate (NRCD) is responsible for implementing the centrally sponsored national river conservation plan for all rivers across the country except river Ganga and its tributaries (as issues related to Ganga and its tributaries are taken up by National Mission for Clean Ganga).
About Jal Shakti Mantralaya
- The government has created a new Ministry called ‘Jal Shakti’ after merging Ministries of Water Resources, River Development & Ganga Rejuvenation along with Drinking Water and Sanitation.
- ‘Jal Shakti’ ministry will encompass issues ranging from providing clean drinking water, international and inter-states water disputes, to the Namami Gange project aimed at cleaning Ganga and its tributaries, and sub-tributaries.
- The ministry will roll out the government’s ambitious plan (‘Nal se Jal’ scheme under jal jivan plan) to provide piped water connection to every household in India by 2024.

Water Vulnerable Megacities in India
A study by the World Wildlife Fund (WWF) evaluated 400 cities globally in 2018 with focus on megacities facing high combined levels of water scarcity — recent and projected drought.

Key Facts:
- Four Indian cities, Chennai, Kolkata, Mumbai and Delhi have been ranked among the top 20 megacities in the world facing high levels of water scarcity.
- Chennai has emerged in top position as the city facing the most severe water scarcity and drought in the world. Kolkata has been ranked at number 2, Mumbai at 11 and Delhi at 15.
- Large cities, mostly located along the banks of large rivers, are vulnerable to water scarcity because of the vastly over-allocated and mismanaged river-systems.
- Frequent droughts and flooding due to climate change and depleting levels of water in the reservoirs are some of the reasons behind the water crisis in these megacities.
- Reports have noted that the world has lost 35% of its wetlands since 1970 and is losing them three times faster than forests.

About The World Wildlife Fund (WWF)
- The WWF was founded in September, 1961, at the International Union for the Conservation of Nature and Natural Resources (IUCN)’s headquarters in Morges, Switzerland.
- As an international fundraising organization it is working in collaboration with existing conservation groups and brings substantial financial support to the conservation movement on a worldwide scale.

Pollution by Cement Industry
The production of cement is a cause of 7 % of global carbon dioxide emissions.

Highlights:
- Cement’s contribution to emissions is especially immense because of the chemical process required to make it.
- A ton of cement yields at least half a ton of CO2.
- Many cement makers are working to cut the amount of clinker (a key raw ingredient) in their cement, while some others are looking at substitutes including fly-ash, which comes from the chimneys of plants that burn coal, or slag from steel-making blast furnaces.
The high cost of the greener forms of cement makes it difficult for consumers to use it as an alternative such as geopolymer cement. It can further make it difficult for policymakers to take greenhouse gases out of buildings, roads and bridges.

About Geopolymer Cement
- Geopolymer cement is made from aluminium and silicon.
- The sources of aluminium in nature are not present as carbonates and therefore, when made active for use as cement, do not release vast quantities of CO2.
- The most readily available raw materials containing aluminium and silicon are fly ash and slag.

About Fly Ash:
- Fly ash is a fine powder that is a byproduct of burning pulverized coal in electric generation power plants.
- Fly ash is a pozzolan, a substance containing aluminous and siliceous material that forms cement in the presence of water.
- When mixed with lime and water, fly ash forms a compound similar to Portland cement.

Ozone Pollution
Ozone levels in Delhi and the National Capital Region were beyond the prescribed limit in the last three years (2016-2018), Union Minister for Environment, Forest and Climate Change told the Lok Sabha on June 28.

About Ozone:
- Ozone (composed of three atoms of oxygen) occurs both in the Earth's upper atmosphere (stratosphere) and at ground level (troposphere). It can be good or bad, depending on where it is found.
- Good Ozone: Ozone occurs naturally in the Earth's upper atmosphere (Stratosphere) where it forms a protective layer that shields us from the sun's harmful ultraviolet rays. Ozone depleting gases like chlorofluorocarbons (CFCs), HCFCs, halons, destroy this protective shield and causes hole in the ozone. India had adopted the Kigali Amendment (aims to phase-down hydrofluorocarbons).
- Bad Ozone: In the Earth's lower atmosphere (troposphere) near ground level, ozone is formed when pollutants emitted by cars, power plants, industrial boilers, refineries, chemical plants, and
other sources react chemically in the presence of sunlight.

- Surface level Ozone is a harmful air pollutant.

**Impacts of Ozone Pollution**
- Surface level Ozone causes damage to crops and forests.
- Irritation can occur in the respiratory system giving rise to coughs and an uncomfortable sensation in the chest.
- Ozone worsens bronchitis, emphysema, asthma, etc. and increases the risk and susceptibility to pulmonary inflammation like Chronic Obstructive Pulmonary Disease (COPD).
- It may reduce lung function and make breathing difficult.

### 2.2 Energy

**IRENA report ‘Renewable Power Generation Costs in 2018’**

International Renewable Energy Agency (IRENA) has released a report titled ‘Renewable Power Generation Costs in 2018’.

**Key findings:**
- India is now the lowest-cost producer of solar power globally. Costs have dropped by 80 per cent in India.
- Renewable energy sources have witnessed cost decline globally.

**Reasons behind low costs:**
- India has high solar potential that leads to improved asset utilization.
- As the cost of land and labor is cheaper than the rest of the world, it also contributes to low-cost production of solar power in India.
- The country imports majority of hardware for installation from China which is cheaper and helps cut the cost by a huge margin.

**About IRENA:**
- It is an intergovernmental organisation mandated to facilitate cooperation, advance knowledge, and promote the adoption and sustainable use of renewable energy.
- It is the first international organisation to focus exclusively on renewable energy, addressing needs in both industrialized and developing countries.
- It is headquartered in Masdar City, Abu Dhabi.

**Pradhan Mantri Ujjwala Yojana**

7.23 Crore Connections released under Pradhan Mantri Ujjwala Yojana

The Salient features of the Scheme are:

1. LPG connection is released in the name of adult women of the poor family, subject to the condition that no LPG connection exists in the name of any family member of the household and fulfilling other terms and conditions.

2. Initially, the beneficiaries under PMUY were identified either from SECC list or from seven other identified categories. Subsequently, the Government has extended the benefit to all left out poor families under PMUY subject to fulfilment of terms & conditions.
3. Under the Scheme, cash assistance upto Rs 1600/- for providing new LPG connection is provided by the Central Government.
4. The beneficiary bears the cost of stove and purchase of first refill. The beneficiary has the option to take stove or purchase first refill or both on loan basis from OMCs at zero interest and the same is recovered through subsidy.
5. Connection under PMUY is released to all eligible poor families and the scheme is under implementation across all the States/UTs and Districts.
6. The scheme being implemented by Ministry of Petroleum & Natural Gas

3. INFORMATION AND COMMUNICATION TECHNOLOGY

5G Technology
Global telecom industry body GSMA expects India to have 920 million unique mobile subscribers by 2025 which will include 88 million 5G connections.

About 5G Technologies:
- The term 5G is used to describe the next-generation of mobile networks beyond Long Term Evolution(LTE) mobile networks.
It is a mix of telecom technology delivering much higher data speeds on more extensive connectivity, using much lower power, with extended battery life, and emitting less radiation.

It is also designed to be the network for the Internet of Things (IoT).

Not only will people be connected to each other but also will utility machines, industrial equipment, automobiles, city infrastructure, public safety and more.

In order to support a huge number of devices, many of which require longer battery life, the 5G network will be building off of the LTE Advanced Pro platform.

It will use the enhanced machine-type communication (e-MTC) and narrowband IoT (NB-IoT), to scale down the device and network complexity to reach these support goals.

**About LTE:**

- It is an abbreviation for Long Term Evolution.
- LTE is a 4G wireless communications standard developed by the 3rd Generation Partnership Project (3GPP) that are designed to provide up to 10x the speeds of 3G networks for mobile devices such as smartphones, tablets, netbooks, notebooks and wireless hotspots.

**About VoLTE**

- It stands for voice over Long Term Evolution.
- Utilising IMS technology, it is a digital packet voice service that is delivered over IP via an LTE access network.
- Voice calls over LTE are recognised as the industry-agreed progression of voice services across mobile networks, deploying LTE radio access technology.

**About Latency:**

- It is a networking term to describe the total time it takes a data packet to travel from one node to another.
- Latency refers to time interval or delays when a system component is waiting for another system component to do something.

**About Internet of Things (IoT)**

- It is an ecosystem of connected physical objects that are accessible through the internet.
- The ‘thing’ in IoT could be a person with a heart monitor or an automobile with built-in-sensors, i.e. objects that have been assigned an IP address and have the ability to collect and transfer data over a network without manual assistance or intervention.
- The embedded technology in the objects helps them to interact with internal states or the external environment, which in turn affects the decisions taken.

**Hypersonic Technology Demonstrator Vehicle (HSTDV)**

The Defence Research and Development Organisation (DRDO) has conducted maiden test of an indigenously developed Hypersonic Technology Demonstrator Vehicle (HSTDV) along with several other technologies.

**Highlights:**

- Under this project, DRDO is developing a hypersonic vehicle that will be powered by a scramjet engine.
● This is dual-use technology, which when developed, will have multiple civilian applications.
● It can be used for launching satellites at low cost.
● It will also be available for long-range cruise missiles of the future
● It is an ambitious project of DRDO and is intended to serve multiple military and civil purposes.
● It is being developed by DRDO with assistance from Israel, UK and Russia.

India to Set Up its Own Space Station
India is planning to launch its own space station by 2030, joining the league of US, Russia, and China to an elite space club.

Indian Space Station
● The Indian space station will be much smaller (mass of 20 tonnes) than the International Space Station and will be used for carrying out microgravity experiments (not for space tourism).
● Preliminary plan for the space station is to accommodate astronauts for up to 20 days in space, and the project will be an extension of the Gaganyaan mission.
● It will orbit Earth at an altitude of around 400km.
● ISRO (Indian Space Research Organisation) is working on space docking experiment (Spadex), a technology that is crucial for making the space station functional.

About Space Station
● A space station is a habitable spacecraft capable of supporting human crewmembers and designed to remain in space.
● As of now, the International Space Station (ISS) is the only fully functioning space station and largest human-made body in low Earth orbit.

Significance of the Space Station:
● Space station is essential for collecting meaningful scientific data, especially for biological experiments.
● Provide platforms for greater number and length of scientific studies than available on other space vehicles. (as Gaganyaan will take humans and experiments in microgravity for few days only).
● Each crew member stays aboard the station for weeks or months, but rarely more than a year.
● Space stations are used to study the effects of long-term space flight on the human body.

ICANN and NASSCOM Collaboration
Global internet body Internet Corporation for Assigned Names and Numbers (ICANN) and Indian IT industry body NASSCOM to develop identifier technology that can be used for managing devices and infrastructure using the internet.

Key Facts:
● Both the bodies will first focus on updating the Internet of Things (IoT) devices using domain name system (DNS) even in the situation when the manufacturer or supplier has closed down the business.
● This collaboration provides a structure to jointly identify research projects, particularly in new technologies related to the Internet's system of unique identifiers.
The first research project focuses on testing the use of the DNS to update IoT firmware and studying how the proposed technology could scale outside a lab environment.

**About ICANN:**
- Internet Corporation for Assigned Names and Numbers (ICANN) is a non-profit body that administers domain names and Internet protocol addresses (IPs) globally.
- It also ensures that computers across the internet can find one another through defined unique pathways and identifiers.
- It is responsible for coordinating the maintenance and methodologies of several databases, with unique identifiers, related to the namespaces of the Internet – and thereby, ensuring the network’s stable and secure operations.

**About NASSCOM:**
- The National Association of Software and Services Companies (NASSCOM) is a not-for-profit industry association, is the apex body for the IT industry in India.
- NASSCOM role has primarily been to make sure that service quality and enforcement of Intellectual Property Rights have been properly implemented in the Indian software and BPO industry.

**About IoT:**
- The Internet of Things is made up of devices from simple sensors to smartphones and wearables connected together.
- IoT allows devices on closed private internet connections to communicate with others and the Internet of Things brings those networks together.
- It gives the opportunity for devices to communicate not only within close silos but across different networking types and creates a much more connected world.

**Flood Hazard Atlas**
Odisha has released a unique flood hazard atlas on the basis of historic flood inundation captured through satellite imagery over the period from 2001 to 2018.

**About Flood Hazard Atlas:**
- It is the mapping and zonation of an area prone to frequent flooding, the mapping is done on the basis of the data of the past few years.
- The National Remote Sensing Centre (NRSC) of the Indian Space Research Organisation (ISRO), Hyderabad does flood hazard zonation.

**Significance:**
- A more concise focus on the effects and impacts of the flooded area is possible during the early planning stages.
- Risk reduction or mitigation techniques can be recommended for the same portion of the study area.
- Location, severity, or frequency of hazard can be done more easily.
● A study area or a sub-area can be expanded, reduced, or deleted. Study areas can be divided into sub-areas requiring more information, additional assessments, or specific reduction techniques.
● A more realistic evaluation of risks to new development is possible. Appropriate hazard reduction techniques can be more easily developed to deal with an emergency situation.

4. MATERIAL SCIENCE

Ceramic Membrane to Clean Toxic Effluents
The scientists at Council of Scientific and Industrial Research- North East Institute of Science and Technology (CSIR-NEIST) have developed a ceramic membrane with the help of a mixture of potter’s clay, stone dust and tea waste which can clean toxic effluents.

Applications:
● These filters are especially useful in petrochemical processing, where it is not possible to use organic membranes.
● Ceramic filters and membranes are commonly used in several sectors like food and beverage, drugs and chemicals, waste recovery and recycling industries.

Properties of the membranes:
● Ceramic membranes can withstand frequent cleaning, harsh operating environments and situations that require continuous flows of material.
● They can also be regenerated over many cycles and used for separation of both aqueous and non-aqueous solutions.
● The newly developed membrane has good thermal and chemical stability.
● The used membrane could also be regenerated by heating at 400 degrees for 30 minutes, without much loss of efficiency.

Carbon Quantum Dots (CQD)
A team of scientists in Council of Scientific & Industrial Research-North East Institute of Science and Technology (CSIR-NEIST), Assam has developed a chemical process that turns coal into a biomedical ‘dot’ to help detect cancer cells.

About Carbon Quantum Dots (CQD)
● CQDs are carbon-based nanomaterials whose size is less than 10 nm, or nanometre.
● Carbon-based nanomaterials are used as diagnostic tools for bio-imaging, especially in detecting cancer cells, for chemical sensing and in optoelectronics.
● CQDs are futuristic materials whose demand in India has been increasing leading to a considerable volume of import.
● The process is environment-friendly and consumes less water than methods elsewhere. The process can also be recycled with a manageable supply chain.
Superconductivity

IISc researchers have reported superconductivity at room temperature. Their findings, now under review, will be a breakthrough if verified.

About superconductivity:

- It is a state in which a material shows absolutely zero electrical resistance. While resistance is a property that restricts the flow of electricity, superconductivity allows unhindered flow.
- In a superconducting state, the material offers no resistance at all. All the electrons align themselves in a particular direction, and move without any obstruction in a “coherent” manner.
- Because of zero resistance, superconducting materials can save huge amounts of energy, and be used to make highly efficient electrical appliances.
- The fundamental properties of superconductors are:
  1) Zero resistance to electrical current.
  2) Diamagnetism- It is a property opposite to normal magnetism that we are used to. A diamagnetic substance repels an external magnetic field, in sharp contrast to normal magnetism, or ferromagnetism, under which a substance is attracted by an external magnetic field.
PRACTICE QUESTIONS

1. Social development

**Q.1** With reference to latest Periodic Labour Force Survey, consider the below statements:

1. The unemployment rates in urban areas are higher than those in rural areas
2. In urban areas, the unemployment rates for females are higher than those for males.
3. The unemployment rates has also sharply increased among those who are more educated.

Which of the above statements is/are correct?

a. 1, 2 and 3
b. 2 and 3
c. 1 and 3
d. 1 and 2

Answer: a)

**Q.2** The World Population Prospects 2019 is released by:

a. The World Bank
b. International Labour Organisation
c. UN Department of Economic and Social Affairs
d. Amnesty International

Answer: c)

**Q.3** With reference to National Accreditation Board for Certification Bodies, consider the following statements:

1. NABCB can certify professionals.
2. NABCB works under Quality Council of India.
3. Accreditation will help in export of Indian services and skills.

Which of the above statements is/are INCORRECT?

a. 1 Only
b. 2 Only
c. 1 and 2
d. 1, 2 & 3

Answer: d)

Explanation: NABCB, a constituent Board of Quality Council of India, an autonomous body attached to the Ministry of Commerce and Industry is responsible for accreditation of certification/inspection bodies as per applicable international standards under an international system of equivalence. It has secured international equivalence for its accreditation programme for personnel certification bodies. This will help professionals to get certified based on their competence in any required field. NABCB is already supporting Ministry of AYUSH and has accredited certification body for certification for Yoga professionals.
2. Industrial development

Q.4 With reference to Build-Operate-Transfer model, which of the following statements is/are correct?

1. Under the model, private partner is responsible to design, build, operate (during the contracted period) and transfer back the facility to the public sector.
2. Public sector partner has to bring the finance for the project.
3. The public sector will allow private sector partner to collect revenue from the users.

Which of the above statements is/are correct?

- a. 1,2 and 3
- b. 2 and 3
- c. 1 and 2
- d. 1 and 3

Answer: d)
Private sector partner has to bring the finance for the project and take the responsibility to execute the project.

Q.5 With reference to National Project Management Policy Framework, consider the following statements:

1. The Framework aims for the effective execution of public sector and public-private partnership infrastructure projects.
2. The framework is initiated by Ministry of Micro, Small and Medium Enterprises.

Which of the above statements is/are INCORRECT?

- a. 1 Only
- b. 2 Only
- c. Both 1 and 2
- d. Neither 1 nor 2

Answer: b)
Explanation: NITI Aayog has suggested the development of a National Project Management Policy Framework for the effective execution of public sector and public-private partnership infrastructure projects.

Q.6 The world's largest multi-stage lift irrigation project is in

- a. Kaleshwaram, Telangana
- b. Polavaram, Andrapradesh
- c. Pattiseema, Andrapradesh
- d. Srisailam, Telangana
Q.7 Consider the following statements with reference to GI tag:
1. It is covered as element of intellectual property rights (IPRs) under Paris Convention for the Protection of Industrial Property.
2. It provides protection so that no other producer can misuse the name to market similar products.
3. It is given only to manufactured products originating from a definite geographical territory
Which of the above statements is/are correct?
   a. 1 and 3
   b. 1,2 and 3
   c. 2 and 3
   d. 1 and 2

Answer: d)
Explanation: It is covered as element of intellectual property rights (IPRs) under Paris Convention for the Protection of Industrial Property under WIPO(World Intellectual Property Organisation), a specialised UN agency. A GI is primarily an agricultural, natural or manufactured (handicrafts and industrial goods) product originating from a definite geographical territory.

3. Economic development

Q.8 Which of the following are the objectives of Self Help Groups:
1. Empowering the marginalised sections of society.
2. It ensures gender equity, through women's participation in economic activity.
3. Improving the financial inclusion particularly in rural areas.
4. It acts as a pressure group in the society.
Select the correct answer code:
   a. 1,2 and 3
   b. 2,3 and 4
   c. 1,2 and 4
   d. 1,2 ,3 and 4

Answer: d)
Explanation: All are correct

Q.9 Consider the following statements with reference to Basel III Norms: Which one is correct?
   a. It is aimed to regulate the e-commerce
   b. It is the guidelines on prevention of transport of hazardous chemicals

Answer: a)
c. It is to regulate the banking operations

d. None of above

Answer: c)
Explanation: It aims to strengthen the regulation, supervision and risk management of banks, developed by the Basel Committee on Bank Supervision.

Q.10 Consider the following statements with reference to Merchant Discount Rate:
1. It is a charge to a merchant by a bank for accepting payments from his customers through the bank’s debit cards.
2. The amount paid back by banks to their customers when they use debit cards for financial transactions for purchasing goods or services.

Which of the above statements is/are correct?

a. 1 Only
b. 2 Only
c. Both 1 and 2
d. Neither 1 nor 2

Answer: a)
Explanation: Merchant Discount Rate is a fee charged from a merchant by a bank for accepting payments from customers through credit and debit cards in their establishments. It compensates the card issuing bank which puts the PoS terminal and payment gateways such as Mastercard or Visa for their services.

Q.11 ‘The Generalized System of Preferences to developing countries’ is in place in which of the following?

a. The USA
b. The UN
c. The WTO
d. The World Bank

Answer: a)
Explanation: Generalized System of Preferences is a programme that seeks to aid developing countries by giving some of their products non-reciprocal, duty free access to U.S. markets.

Q.12 Consider the following statements with reference to National Electronic Funds Transfer:
1. It is a nation-wide payment system facilitating one-to-one funds transfer.
2. The amount is transferred to the beneficiary immediately once the transaction is completed.
3. The service is available both in online and offline mode.

Which of the above statements is/are correct?
a. 1 and 2  
b. 2 and 3  
c. 1, 2 and 3  
d. 1 and 3  

Answer: d)
Explanation: The National Electronic Funds Transfer (NEFT) thought is one-to-one scheme amount is not dispatched to the beneficiary immediately instead on a batch specified by bank within the NEFT business hour.

Q.13 Consider the following statements with reference to Kimberley Process:
   1. It is an international certification scheme that regulates trade in rough diamonds.
   2. It ensures that the diamonds are not procured from illegal traders.
   3. India is a founding member of KPCS.
Which of the above statements is/are correct?

a. 1 and 2  
b. 1, 2 and 3  
c. 2 and 3  
d. 1 and 3

Answer: b)
Explanation: All are correct.
4. Environment

Q.14 Consider the below statements with reference to Emission Cap and Trade System:
1. The system is used to reduce different forms of pollution such as sulfur dioxide (SO2) and nitrogen oxides (NOx) emissions.
2. It incentivises the less polluting units.
Which of the above statements is/are correct?

a. 1 Only
b. 2 Only
c. Both 1 and 2
d. Neither 1 nor 2

Answer: c)

Q.15 The following are the consequences of river interlinking projects:
1. It can result in salinization of the region.
2. It can destroy coastal ecosystems.
3. It is a one stop solution to floods and droughts in India.
Select the correct answer code:

a. 1 and 2
b. 2 and 3
c. 1, 2 and 3
d. 1 and 3

Answer: a)
Explanation: The project is not a one stop solution. It has its own environmental consequences.

Q.16 Consider the following statements with reference to ‘Dead zones’ in water bodies.
1. These are low-oxygen areas in the oceans and large lakes
2. These are caused by excessive nutrient pollution that deplete the dissolved oxygen.
Which of the above statements is/are correct?

a. 1 Only
b. 2 Only
c. Both 1 and 2
d. Neither 1 nor 2

Answer: c)

Q.17 Consider the following statements with reference to United Nations Convention to Combat Desertification?
1. The financial mechanism of the UNCCD is managed by Global Environment Facility.
2. It is the only legally binding international agreement on combating desertification.
3. India has signed but has not ratified the convention.

Which of the above statements is/are correct?

a. 1 and 3
b. 1 and 2
c. 2 and 3
d. 1, 2 and 3

Answer: b)

Explanation: It was established in 1994, the sole legally binding international agreement linking environment and development to sustainable land management. The Global Environment Facility (GEF) became a financial mechanism of the UNCCD in 2010. India has ratified this convention.

Q.18 With reference to Bonn Challenge, consider the following statements:

a. It is a global effort to conserve endangered species
b. It is a global effort to fight antimicrobial resistance
c. It is a global effort to bring 150 million hectares of deforested and degraded land into restoration
d. It is a global effort end child labour

Answer: c)

Explanation: It is a global effort to bring 150 million hectares of deforested and degraded land into restoration by 2020 and 350 million hectares by 2030.

Q.19 Consider the following statements with reference to Fly Ash:

1. It is a fine powder that is a by-product of burning pulverized coal in electric generation power plants.
2. It is one of the main constituents of groundwater pollution if not treated in thermal plants.
3. It forms a compound similar to Portland cement when it mixed with lime and water.

Which of the above statements given is/are correct?

a. 1 and 2
b. 1, 2 and 3
c. 2 and 3
d. 1 and 3

Answer: b)

Explanation: All are correct

Q.20 With reference to ozone pollution, consider the following statements:

1. The excess ozone in the stratosphere is a causes of global warming.
2. The ozone in the troposphere is a result of reaction between sunlight and vehicular emissions. Which of the above statements is/are correct?
   a. 1 Only
   b. 2 Only
   c. Both 1 and 2
   d. Neither 1 nor 2

Answer: b)
Explanation: In the stratosphere, ozone molecules play an important role - absorbing ultraviolet radiation from the Sun and shielding Earth from dangerous rays. It is not responsible for global warming. In the Earth's lower atmosphere (troposphere) near ground level, ozone is formed when pollutants emitted by cars, power plants, industrial boilers, refineries, chemical plants, and other sources react chemically in the presence of sunlight. Surface level Ozone is a harmful air pollutant.

Q.21 The term “Day Zero” was recently in the news is related to?
   a. The day is observed as zero carbon emission day
   b. It refers to a situation of chronic water scarcity
   c. A day observed by United Nations for the protection of wild life.
   d. None of the above

Answer: b)
Explanation: Day Zero Situation is a situation when there will be no water in the taps and the use of water will become restricted for vital services only.

5. Information and Communication Technology

Q.22 With reference to 5G technology, which of the above statements is/are correct?
   1. It is the next-generation of mobile networks beyond Long Term Evolution(LTE) mobile networks.
   2. It consumes more energy but emits less radiation.
   3. It is designed aid the network for the Internet of Things (IoT).

Select the correct answer code:
   a. 1 and 2
   b. 2 and 3
   c. 1,2 and 3
   d. 1 and 3

Answer: d)
Explanation: The term 5G is used to describe the next-generation of mobile networks beyond Long Term Evolution (LTE) mobile networks. It is a mix of telecom technology delivering much higher data speeds on more extensive connectivity, using much lower power, with extended battery life, and emitting less radiation. It is also designed to be the network for the Internet of Things (IoT).

Q.23 Consider the following statements with reference to Data Localization:
1. It is an act of storing data on any device that is physically present within the borders of a specific country where the data was generated.
2. Justice BN Srikrishna committee was formed to recommend on data privacy and protection
Which of the above statements given is/are correct?

a. 1 Only
b. 2 Only
c. Both 1 and 2
d. Neither 1 nor 2

Answer: c)
Explanation: Both are correct.

Q.24 With reference to ICANN, which of the following statements is/are correct?

a. It is a non-profit body that administers domain names and Internet protocol.
b. It is constituted under United Nation system.
c. The 2017 Nobel Peace Prize was awarded to ICANN.

Select the correct answer code:

a. 1 and 3
b. 1 and 2
c. 2 and 3
d. 1, 2 and 3

Answer: b)
Explanation: The Nobel Peace Prize in 2017 was awarded to the International Campaign to Abolish Nuclear Weapons (ICAN).

6. Material Science
Q.25 Carbon Quantum Dots, is proved to be helpful for?

a. LED television screen for better visual effects.
b. In chimneys to filter pollutants in air.
c. In development of Quantum technology.
d. Diagnostic tools for bio-imaging.
Answer: d)
Being a new type of fluorescent nanoparticles, applications of CQD lie in the field of bioimaging and biosensing due to their biological and environmental friendly composition and excellent biocompatibility.

7. General Knowledge

Q.26 Consider the below statements with reference to IndSpaceEx:
1. The exercise will enhance India’s requisite space and counter-space capabilities.
2. It is first-ever simulated space warfare exercise to be conducted by India.
Which of the above statements is/are correct?
a. 1 Only
b. 2 Only
c. Both 1 and 2
d. Neither 1 nor 2

Answer: c)  
Explanation: Both are correct.

Q.27 The term Ai-Da, recently seen in the news is related to:
a. It is a space mission launched by the European space agency to study asteroids.
b. It is the world's first ultra-realistic humanoid artist.
c. It is a newly discovered exo-planet in outer space.
d. None of the above

Answer: b)

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