

**GS FULL PAPER – 24 April 2022**

1.a

Semiconductors are the materials which have a conductivity between conductors and insulators. They are the fundamental components of modern electronics, information and communication technologies.

**Design Linked Incentive scheme**

- The DLI scheme aims to provide financial and infrastructural support to companies setting up fabs or semiconductor making plants in India.
- It will offer fiscal support of up to 50% of the total cost to eligible participants who can set up these fabs in the country.
- It will also offer fiscal support of 30% of the capital expenditure to participants for building compound semiconductors, silicon photonics and sensors fabrication plants in India, under this scheme.
- An incentive of 4% to 6% on net sales will be provided for five years to companies of semiconductor design for integrated circuits, chipsets, system on chips, systems and IP cores.
- It is expected to facilitate the growth of at least 20 such companies which can achieve a turnover of more than ₹1500 crore in the coming five years.

2.b

**FAME scheme**

- It was launched in 2015
- It forms a part of National Electric Mobility Mission Plan 2020.
- It aims to promote manufacturing of electric and hybrid vehicle technology and to ensure sustainable growth of the same
- It aims to generate demand by way of supporting e-buses, e 2-wheelers, e three- wheelers
- By selling over 75,000 vehicles FAME has so far resulted in savings of over 20 million litres of fuel and has led to almost 40 million kg reduction in CO<sub>2</sub>.

Department of Heavy Industries, the Ministry of Heavy Industries and Public Enterprises is the monitoring authority for the scheme.

Department of Heavy Industry (DHI) has recently modified FAME II scheme.

Objective of the modification: To drive adoption of electric vehicles

Modifications :

- Introduction of a demand incentive of Rs. 15,000 per kWh for electric two wheelers with a maximum cap at 40% of the vehicles' cost.
- Launch of an aggregate demand for 300,000 electric three- wheelers by Energy Efficiency Services Limited.

3.c

NITI Aayog's report on India's Coal Sector said India's push to domestic coal mining through both Coal India and auction of coal blocks to private companies, coal usage in India will increase as it plateaus in

other parts of the world, including China. It also said India is set to overtake China as the world's largest metallurgical coal importer.

While coal-based thermal power generation will grow in absolute terms for the next decade, its share in the total power generation mix of the country will decline to a 50-55 per cent (from current 72 per cent) in the next 10 years. This, it said would be due to the changing capacity mix with increasing share of renewable energy.

On November 1, at Glasgow global climate summit COP26, Prime Minister Narendra Modi announced India will be a Net Zero economy by 2070 and will have 500 Gw of renewable energy by 2040.

4.c

- Nal se Jal Yojana was launched in Launched in 2019.
- Nodal Agency: Ministry of Jal Shakti
- Aim: To provide piped drinking water to every rural home by 2024
- It is a component of the government's Jal Jivan Mission.

The scheme is based on a unique model where paani samitis (water committee) comprising villagers will decide what they will pay for the water they consume. The tariff they fix will not be the same for everyone in the village. Those who have large households will pay more, while poor households or households where there is no earning member, will be exempted.

5.b

The process of Active Pharmaceutical Ingredients (APIs) development must include the primary components called KSMs (key starting materials) and product intermediates. These "building blocks" of API are often sourced by generic pharma companies (who may claim to be vertically integrated) through third party companies who develop and manufacture them.

While India is a world leader in generic drugs, the country is highly dependent on the import of raw materials, key starting materials (KSMs), and active pharmaceutical ingredients (APIs) for producing even common medicines such as the analgesic pain-reliever Crocin

Production-Linked Incentive (PLI) scheme in Pharma sector' s Objective was to reduce import dependence on active pharmaceutical ingredients (APIs), drug intermediates (DIs) and key starting materials (KSMs).

6.c

Finance Minister Nirmala Sitharaman presented the Union budget 2022 where she announced the 2022-23 as the International Year of Millets.

Highlighting the rise in cases of gluten intolerance due to the consumption of wheat, she said, "Due to the gluten content in wheat and genetically modified crops, many people are turning out to be gluten intolerant. So, people are now trying to stay away from eating wheat and turning towards millets. Eating millets is extremely beneficial due to their health and also spiritual benefits.

**Benefits of millets:**

- Niacin — a type of vitamin B found in millets — is useful in energy production, nerve health and keeping the digestive tract healthy. If you have food intolerances, this is very helpful.
- The magnesium, zinc and fibre found in millets make it an excellent food for blood sugar regulation, especially for PCOD and diabetes.
- The folic acid helps with iron assimilation and improves skin, health and fertility

7.b

The Atal Innovation Mission (AIM), NITI Aayog, and the U.S. Agency for International Development (USAID) announced a new partnership under the Sustainable Access to Markets and Resources for Innovative Delivery of Healthcare (SAMRIDH) initiative.

Aim:

To improve access to affordable and quality healthcare for vulnerable populations in tier-2 and tier-3 cities, and rural and tribal regions.

To combine public and philanthropic funds with commercial capital to create and rapidly scale market-based health solutions.

SAMRIDH's efforts will help reach vulnerable populations, leveraging AIM's expertise in innovation and entrepreneurship.

The collaboration would focus on innovations across the healthcare landscape with the common goal to mount an effective response to the ongoing third wave of COVID-19 and build health system preparedness for future infectious disease outbreaks and health emergencies.

8.a

Union Finance Minister while presenting Union Budget for 2022-23 announced National Ropeways Development Programme – “Parvatmala”.

It will be taken up on PPP mode.

Ropeways will be a preferred ecologically sustainable alternative in place of conventional roads in difficult hilly areas.

The idea is to improve connectivity and convenience for commuters, besides promoting tourism.

This may also cover congested urban areas, where conventional mass transit system is not feasible.

The Ministry of Road Transport and Highways (MORTH) has so far been responsible for development of Highways and regulating the road transport sector across the country. However, in February 2021, the Government of India (Allocation of Business) Rules 1961 was amended, which enables the Ministry to also look after the development of Ropeways and Alternate Mobility Solutions. The move will give a boost to the sector by setting up a regulatory regime. The Ministry will also have responsibility for development of ropeway and alternative mobility solutions technology, as well as construction, research, and policy in this area.

9.c

Graphene is a one-atom-thick layer of carbon atoms arranged in a hexagonal lattice. It is the building-block of Graphite, but graphene is a remarkable substance on its own with a multitude of astonishing properties.

It is the thinnest, most electrically and thermally conductive material in the world, while also being flexible, transparent and incredibly strong. Graphene is also known as a wonder material due to its vast potential in the energy and medical world.

Graphene is widely used in making solar cells, light-emitting diodes, touch panels and smart windows.

Graphene supercapacitors serve as energy storage devices with a capacity for faster charging and longer life span than traditional electrolytic batteries.

Other potential applications of graphene include water filtration and purification, renewable energy, sensors, personalised healthcare and medicine, to name a few.

10.d

What happens when a country (Ex: Pakistan) is blacklisted?

Unlike others, the FATF follows a principle of ostracism against members who don't comply with its strictures.

Countries will face severe financial restrictions which means tightening all banking mechanisms in this inter-connected globalised world

A downgrading by credit agencies meaning high interest rate while borrowing

Most significantly, possible loan cuts by the World Bank and the International Monetary Fund.

About Financial Action Task Force(FATF)

In response to mounting concern over money laundering, the FATF was established by the G-7 Summit that was held in Paris in 1989.

In 2001, the development of standards in the fight against terrorist financing was added to the mission of the FATF.

Therefore, FATF is the global money laundering and terrorist financing watchdog.

The FATF is not a part of the UN system, but it functions out of the Organisation for Economic Cooperation and Development headquarters in Paris.

11.d

Why in news: Environmentalists and enthusiasts seek protection for Gurugram's 'bird paradise' Basai wetlands, before it is too late.

Basai wetland, located in Basai village in Gurgaon, Haryana. It lies in one of the paleochannel of the Sahibi River, a tributary of Yamuna which originates from the Aravalli range in Rajasthan.

Basai is recognised as a key biodiversity area by the International Union for Conservation of Nature (IUCN), the Wildlife Institute of India and the BirdLife International, a global network of NGOs that work to protect bird habitats.

Urbanization is the biggest threat to the wetland. It continues to disappear under newly laid roads, modern housing constructions and other infrastructure development. An upcoming expressway, cutting through the

terrain here, has majorly impacted the flyway of thousands of migratory birds from Europe and Central Asia.

12.b

The Ministry of Civil Aviation (not Agriculture) launched Krishi UDAN on international and national routes to help farmers transport agricultural products.

It is a key component of the Centre's National Civil Aviation Policy.

The scheme envisages providing connectivity to un-served and underserved airports (tier-2 and tier-3 cities) of the country through the revival of existing air-strips and airports. The scheme is operational for a period of 10 years.

The UDAN 4.1 focuses on connecting smaller airports, along with special helicopter and seaplane routes. Some new routes have been proposed under the Sagarmala Seaplane services.

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13.b

Finance Minister Nirmala Sitharaman, in her Budget 2022 speech announced a 30 per cent tax on income from virtual digital assets.

Statement 1 is incorrect. Virtual digital assets refers to the digital currencies that are not issued by the Reserve Bank of India.

Note - a currency will be called a currency only when it is issued by the central bank (RBI) even if it is a crypto.

The government will be taxing the profit which are made during transactions of such assets at 30 per cent. It involves cryptocurrencies, DeFi (decentralised finance) and non -fungible tokens (NFTs).

As per the Finance Bill, a virtual digital asset is proposed to mean any information or code or number or token (not being Indian currency or any foreign currency), generated through cryptographic means or otherwise, by whatever name called, providing a digital representation of value which is exchanged with or without consideration, with the promise or representation of having inherent value, or functions as a store of value or a unit of account and includes its use in any financial transaction or investment, but not limited to, investment schemes and can be transferred, stored or traded electronically.

14.b

Brazil is the largest producer of Sugar in the world. India is the largest consumer and the second-largest producer of sugar in the world.

Recently, to increase the production of fuel grade ethanol, Govt. is also encouraging distilleries to produce ethanol from maize & rice available with FCI. Government has fixed remunerative price of ethanol from maize & rice.

Why in news: Ethanol helps sugar mills clear arrears to farmers. In the past four sugar seasons ending 2020-2021, sugar mills/distilleries generated revenue of about ₹35,000 crore from the sale of ethanol to oil marketing firms, which helped in clearing the sugar cane price arrears owed to farmers.

15.a

NASA's James Webb Space Telescope reaches destination in solar orbit.

James Webb Space Telescope is the largest space observatory ever built. Its enormous sized sunshield is equivalent to the size of a tennis court. Examining the celestial objects which have formed shortly after the Big Bang, investigating on how the galaxies have evolved or formed, and finding the evidence of dark matter are its mission goals.

It is designed to provide improved infrared resolution and sensitivity over Hubble. JWST is designed primarily for near-infrared astronomy, but can also see orange and red visible light, as well as the mid-infrared region, depending on the instrument. JWST explores infra-red wavelengths [near-infrared and mid-infrared light] and visible red light while the Hubble telescope can explore the visible, ultraviolet and infrared wavelength [parts of near-infrared light].

The JWST is a space telescope built by NASA along with the European Space Agency and the Canadian Space Agency. It is now touted as the successor to the Hubble and Spitzer space telescope with far more advanced technical abilities.

16.c

In News - Indian Army Implements Radio Frequency Identification (RFID) of Ammunition Stock.

Radio Frequency Identification (RFID) Tags is a technology whereby digital data encoded in RFID tags or smart labels are captured by a reader via radio waves.

RFID is similar to barcoding in that data from a tag or label are captured by a device that stores the data in a database.

RFID tag data can be read outside the line-of-sight, whereas barcodes must be aligned with an optical scanner.

RFID belongs to a group of technologies referred to as Automatic Identification and Data Capture (AIDC). AIDC methods automatically identify objects, collect data about them, and enter those data directly into computer systems with little or no human intervention and no physical contact.

FASTag is a device that employs Radio Frequency Identification (RFID) technology for making toll payments directly while the vehicle is in motion. FASTag (RFID Tag) is affixed on the windscreen of the vehicle and enables a customer to make the toll payments directly from the account which is linked to FASTag.

17.a

The Hon'ble Supreme Court on 10th July 2009 issued orders that there will be a Compensatory Afforestation Fund Management and Planning Authority (CAMPA) as National Advisory Council under the chairmanship of the Union Minister of Environment & Forests for monitoring, technical assistance and evaluation of compensatory afforestation activities.

The Compensatory Afforestation Fund Management and Planning Authority (CAMPA) Act seeks to mitigate the impact of diversion of forest land for non-forest purposes by making sure through a well-defined institutional mechanism, that the funds are released and utilized quickly, efficiently and transparently.

The CAMPA law is applicable to States, Union Territories, and the Centre as well.

State CAMPA Consists of Chief Minister as the Chairperson and Secretary (Forests) as the Member Secretary and Minister of Forests, Minister of Finance, Minister of Planning, Chief Secretary, Principal Secretary of Finance, Principal Secretary of Planning, Principal Chief Conservator of forests and chief wildlife warden as its members.

All states except Nagaland have set up state CAMPAs

18.c

Artificial neural networks (ANNs), usually simply called neural networks (NNs), are computing systems inspired by the biological neural networks that constitute animal brains.

An ANN is based on a collection of connected units or nodes called artificial neurons, which loosely model the neurons in a biological brain.

The concept behind an Artificial Neural Network is to define inputs and outputs, feed pieces of inputs to computer programs that function like neurons and make inferences or calculations, then forward those results to another layer of computer programs and so on, until a result is obtained

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Applications of Neural Networks includes Facial Recognition, Stock Market Prediction, Social Media, Aerospace, Defence, Healthcare, and Signature Verification and Handwriting Analysis among others.

19.d

Replying to a question asked by Congress' member of Parliament in the Rajya Sabha, Anand Sharma, IT Minister Ashwini Vaishnaw said that the government was open to even more strict social media rules if the house could build a consensus on it.

Rules and Guidelines to make social media companies accountable

In February last year, the Ministry of Electronics and Information Technology as well as the Ministry of Information and Broadcasting had notified rules and guidelines to hold social media and over-the-top (OTT) content platforms more accountable for the "misuse and abuse" of the content hosted on their platforms.

As part of the guidelines, the IT ministry had asked all social media companies to appoint an in-house grievance officer. Hence, Statement 1 is correct.

The name and contact details of the officer were to be shared with the ministry.

A resident grievance officer who should have an office in India and be an Indian passport-holding citizen as well as a chief compliance officer who should be present in India and ensure compliance with the platform's compliance with the IT Act and the rules.

Monthly compliance reports on the complaints received, the action taken and the redressal for such complaints also had to be published by the intermediaries.

Social media intermediaries who were primarily in the business of peer-to-peer messaging service would have to disclose the first originator of a message. Hence, statement 2 is correct.

Social media intermediaries have challenged this rule before several high courts.

The rules for OTT platforms had then opted to follow a "soft-touch self-regulatory architecture".

20.c

The Emergency Credit Line Guarantee Scheme (ECLGS) will be extended to cover the next fiscal as well, with expanded guarantee cover of Rs 5 lakh crore, Finance Minister Nirmala Sitharaman said in her budget presentation.

This Scheme was announced as part of the Atma Nirbhar Bharat Package in 2020 to help businesses including MSMEs to meet their operational liabilities and resume businesses after the COVID-19 crisis.

It provides Member Lending Institutions (MLIs), 100% guarantee against any losses suffered by them due to non-repayment of the ECLGS funding by borrowers.

ECLGS being a demand driven scheme, sanctions/disbursements are made by lending institutions based on assessment of borrower's requirement and their eligibility.

ECLGS is under the Department of Financial Services (DFS), the operational domain of Ministry of Finance.

To ensure easy repayment terms on the credit extended to the MSME sector, Government has capped the interest rate under ECLGS scheme at

9.25% for Banks and Financial Institutions and

14% for Non-Banking Financial Institutions.

This scheme also offers a one-year moratorium on payment of principle component.

21.a

Former Reserve Bank of India (RBI) governor Urjit Patel has been appointed as a vice-president of the Asian Infrastructure Investment Bank (AIIB).

India has emerged as AIIB's biggest beneficiary by obtaining \$6.8 billion funding for 29 projects.

As of October 22 2021, AIIB has overall approved 147 projects in 31 countries valued at \$28.97 billion.

About AIIB

- It is a multilateral development bank with headquarters in Beijing, China.
- It is a development bank with a mission to improve the economic and social outcomes in Asia.
- It has 103 approved members.
- It focuses on investment in sustainable infrastructure and developmental projects.



- Membership to the bank is open to all members of the Asian Development Bank or the World Bank.

22.d

The Pradhan Mantri Matru Vandana Yojana (PMMVY) was announced on December 31, 2016 which gives a benefit of ₹6,000 to pregnant and lactating mothers for the birth of the first child.

₹5,000 would be disbursed in three installments upon meeting several conditionalities:

registration of pregnancy

at least one ante-natal check-up

registration of child birth and vaccinations.

The remaining cash incentive of up to ₹1,000 is to be given under a separate scheme called the Janani Suraksha Yojana so that on an “average” women get a total sum of ₹6,000.

The objective is to compensate women for wage loss due to child birth.

The scheme is not applicable for those women who are employed by the Central or State governments or working in PSU's.

Under the revamped PMMVY under Mission Shakti, the maternity benefit amounting to ₹6000 is also to be provided for the second child, but only if the second is a girl child, to discourage pre-birth sex selection and promote the girl child.

23.b

The Prime Minister's Citizen Assistance and Relief in Emergency Situations (PM-CARES) Fund was set up to accept donations and provide relief during the Covid-19 pandemic, and other similar emergencies.

Foreign contributions and donations are regulated by the Foreign Contribution (Regulation) Act 2010 (FCRA) which requires registration, and regular documentation of funds received; however, the Fund has been exempted from all provisions of the FCRA

The Fund is not a “public authority” as far as transparency laws such as the Right to Information Act 2005 are concerned.

24.b

One Ocean Summit is being organised by France in cooperation with the United Nations and the World Bank.

Context: Indian Prime Minister will address the high-level segment of One Ocean Summit.

The objective of the Summit is to mobilise the international community to take tangible action towards preserving and supporting healthy and sustainable ocean ecosystems. The goal of the One Ocean Summit is to raise the collective level of ambition of the international community on marine issues and to translate our shared responsibility to the ocean into tangible commitments

- Commitments will be made towards combating illegal fishing, decarbonising shipping and reducing plastic pollution

- Will also focus on efforts to improve governance of the high seas and coordinating international scientific research.

25.b

National level celebration of World Wetlands day 2022 was held at Sultanpur National Park, a Ramsar site of Haryana. Two new Ramsar sites (Wetlands of International Importance), Khijadia Wildlife Sanctuary in Gujarat and Bakhira Wildlife Sanctuary in U.P were also announced on the occasion. Sultanpur National Park (Ramsar site) harbours a rich plant and animal life: it supports more than 220 species of resident, winter migratory and local migratory waterbirds at critical stages of their life cycles.

26.d

The first Minsk Protocol was signed by Ukraine, Russia, the Organization for Security and Co-operation in Europe (OSCE) and the pro-Russia separatist leaders in September 2014. Ukraine and the separatists agreed to an immediate 12-point ceasefire deal including withdrawal of heavy weapons and prisoner exchanges. But the agreement failed to stop the fighting, with frequent violations by both sides. Five months later, after Ukraine lost territory to pro-Russia separatists, Minsk II was signed. Representatives of Russia and Ukraine, mediated by France and Germany, signed a 13-point agreement in February 2015. The second agreement also quickly broke down, with the OSCE reporting around 200 weekly violations in 2016-2020 and more than 1,000 since 2021, according to Novaya Gazeta. In addition to the ceasefire, Minsk II's notable points include the withdrawal of weapons, monitoring of the ceasefire by the OSCE and the holding of local elections in the self-proclaimed Donetsk and Luhansk People's Republics on their future status in Ukraine.

27.b

'Intensified Mission Indradhanush 4.0' was launched to catch up on the gaps that might have emerged due to the COVID-19 pandemic.

It is an initiative of Ministry of Health and Family Welfare. It is supported by 11 other ministries and departments, such as Ministry of Women and Child Development, Panchayati Raj, Ministry of Urban Development, Ministry of Youth Affairs among others.

Intensified Mission Indradhanush 4.0 will have three rounds and will be conducted in 416 districts (including 75 districts identified for Azadi ka Amrit Mahotsav) across 33 States/UTs in the country.

Mission Indradhanush was identified as one of the flagship schemes under Gram Swaraj Abhiyan and Extended Gram Swaraj Abhiyan.

Till date, ten phases of Mission Indradhanush have been completed covering 701 districts across the country.

28.d

With the enhanced borrowings on account of COVID-19, the Central Government debt has gone up to 59.3% of GDP in 2020-21 from 49.1% of GDP in 2019-20, but is expected to follow a declining trajectory with the recovery of the economy.

Debt-GDP has increased marginally from 31.1% in 2020-21 to 31.2% in 2021-22.

The Gross Fiscal Deficit of States is estimated to cross the Fiscal Responsibility Legislation (FRL) threshold of 3% of GDP during 2020-21(4.6%) and 2021-22 (3.7%).

This relaxation in borrowing limits was allowed on account of the additional expenditure needs and constrained revenues of the States due to COVID-19.

The net borrowing ceilings of the States were enhanced to 5% of GSDP of the States for the year 2020-21 and 4% of GSDP of the States for 2021-22.

Both Gross Fiscal Deficit and Revenue Deficit for the States are budgeted to decline in 2021-22 from the high levels they reached in 2020-21.

29.d

India has increased its forest area in the past decade and ranks third globally in average annual net gain in forest area from 2010-2020.

Among Indian States, Madhya Pradesh with 11% of India's total forest cover, had the largest area under forests in 2021, followed by Arunachal Pradesh (9%), Chhattisgarh (8%), Odisha (7%) and Maharashtra (7%).

30.c

In its October 2021 Global Financial Stability Report, the IMF has warned that price pressure could be persistent, and monetary authorities may have to act decisively to address inflation expectations. Central bankers should heed its suggestion that they spell out their stance and update markets about their progress in normalising the monetary accommodation provided for Covid. Communication is key to averting financial market volatility and tightening of credit that could derail recovery. The IMF's suggestion to governments is to prick asset price bubbles and unclog credit pipelines to vulnerable households and firms.

31.c

Medaram Jatara

It is a tribal festival of honouring the goddesses Sammakka and Saramma celebrated in the state of Telangana, India.

The Jathara was designated as a State Festival in 1996, owing to the festival's popularity and auspicious importance.

It commemorates the fight of a mother and daughter, Sammakka and Saramma, with the reigning rulers against an unjust law.

It is celebrated once in two years in the month of "Magha" (February) on the full moon day.

It is the second-largest fair of India, after the Kumbh Mela, celebrated by the second-largest Tribal Community of Telangana- the Koya tribe for four days.

It is a festival with no vedic or Brahmanic influence.

At present, the Jathara festival is biennially celebrated and organized by the Koyas in collaboration with the Tribal Welfare Department, Government of Telangana.

Medaram is a remote place in the Eturnagaram Wildlife Sanctuary, a part of Dandakaranya, the largest surviving forest belt in the region.

32.a

Though, the oilseed production in India has grown by almost 43 per cent from 2015-16 to 2020-21. The oil production in India has however lagged behind its consumption, necessitating import of edible oils. India is the world's second-largest consumer and number one importer of vegetable oil.

In August, 2021, the government has announced the National Edible Oil Mission-Oil Palm (NMEO-OP) scheme for self-reliance in edible oil and involves investment of over Rs. 11,000 crore (over a five year period).

According to the Ministry of Consumer Affairs, Food, and Public Distribution the total domestic demand of edible oils in the country is approximately 250 lakh metric tonnes per year.

From which around Palm oil (crude + refined) import constitutes around 60% of the total edible oil imported, out of which 54% is imported from Indonesia and Malaysia.

33.d

India is ranked 1st in milk production contributing 23 per cent of global milk production. Milk production in the country has grown at a compound annual growth rate of about 6.2 per cent to reach 209.96 mn tonnes in 2020-21 from 146.31 mn tonnes in 2014-15.

The Indian dairy industry is expected to grow by 9-11% in FY22. Dairy is the single largest agricultural commodity contributing 5 percent of the national economy and employing more than 8 crore farmers directly.

The top 5 milk-producing states are: Uttar Pradesh (16.3%, 30.52 MMT), Rajasthan (12.6%, 23.69 MMT), Madhya Pradesh (8.5%, 15.91 MMT), Andhra Pradesh (8%, 15.04 MMT) and Gujarat (7.7%, 14.49 MMT).

34.c

The Falkland Islands are an archipelago in the South Atlantic Ocean on the Patagonian Shelf. It is a British overseas territory, with internal self-governance. The United Kingdom takes responsibility for defence and foreign affairs of the islands.

#### **Controversy over the Falklands**

Argentina claims the Sovereignty of the Islands. Their military forces invaded the islands in April 1982.

British administration was restored after the end of the Falklands War. Almost the entire Falklanders are in favour that the archipelago should remain UK overseas territory.

Recently it's in the news again as flights of British military planes to the Falkland Islands stopped at Brazilian airports & China's support to Argentina's claim.

35.b

Neglected Tropical Diseases (NTDs) are a group of infections that are most common among marginalised communities in the developing regions of Africa, Asia and the Americas.

NTDs are especially common in tropical areas where people do not have access to clean water or safe ways to dispose of human waste.

They are caused by a variety of pathogens such as viruses, bacteria, protozoa and parasitic worms.

They include dengue, rabies, blinding trachoma, Buruli ulcer, endemic treponematoses (yaws), leprosy (Hansen disease) etc.

These diseases are contrasted with the big three infectious diseases (HIV/AIDS, tuberculosis, and malaria), which generally receive greater treatment and research funding.

1 in 5 people around the world are affected by NTDs.

India is home to the world's largest absolute burden of at least 11 of these major neglected tropical diseases.

36.c

He revived the Bhakti movement, and his preachings inspired other Bhakti schools of thought. He is considered to be the inspiration for poets like Annamacharya, Bhakta Ramdas, Thyagaraja, Kabir, and Meerabai. Hence, statement 2 is not correct.

Born in 1017 in Sriperumbudur in Tamil Nadu, Ramanujacharya is revered as a Vedic philosopher and social reformer. He travelled across India, advocating equality and social justice.

Ramanuja revived the Bhakti movement, and his preachings inspired other Bhakti schools of thought. He is considered to be the inspiration for poets like Annamacharya, Bhakt Ramdas, Thyagaraja, Kabir, and Meerabai.

From the time he was a young budding philosopher, Ramanuja appealed for the protection of nature and its resources like air, water, and soil. He went on to write nine scriptures known as the navaratnas, and composed numerous commentaries on Vedic scriptures.

Ramanuja is also credited with establishing the correct procedures for rituals performed in temples throughout India, the most famous being Tirumala and Srirangam.

His philosophy of Vishistadwaita argued that there is no room for discriminating against people on the basis of caste and community.

With his great wisdom, sagacity and foresight, he synthesised seemingly opposite thoughts of Jnana and Bhakti, Dvaita and Advaita.

37.b

American cybersecurity firm SentinelOne has released a report on ModifiedElephant—a hacking group that allegedly planted incriminating evidence on the personal devices of Indian journalists, human rights activists, human rights defenders, academics and lawyers.

According to the report, ModifiedElephant maliciously targeted specific groups and individuals, including the activists arrested in the Bhima Koregaon case of 2018. It called the incident ‘one of the most serious cases of evidence tampering’ that the firm had ever encountered.

How does ModifiedElephant deploy malware to its targets? According to the report, ModifiedElephant operators have been infecting their targets using spearphishing emails with malicious file attachments over the last decade, with their techniques getting more sophisticated over time.

Spearphishing refers to the practice of sending emails to targets that look like they are coming from a trusted source to either reveal important information or install different kinds of malware on their computer systems.

38.c

Why in news: World Pulses Day is observed yearly on the 10th of February.

India is the biggest producer and consumer of pulses in the world and it has almost achieved self-sufficiency in pulses.

India accounted for 62% of world’s total pulses production in 2019-20.

In the last five-six years, India has increased pulses production from 140 lakh tonnes to more than 240 lakh tonnes.

Pulses are nutritious and rich in protein, they are important for the food basket, especially in a country like India which is predominantly vegetarian. Pulses have low water consumption and can be grown in dry and rain-fed areas. It improves soil fertility by conserving nitrogen in the soil, reducing the need for fertilizers and therefore reducing the emission of greenhouse gases.

39.b

Why in news: The Nation is remembering revolutionary freedom fighter and tribal leader Tilka Manjhi on his 272nd birth anniversary.

Adivasi rebellion against the British by Tilka Manjhi in 1785.

Determined to defend his people and land, Tilka organized the Adivasis into an army trained in the use of bows and arrows. For years, they would be at war with the Europeans and their army. In 1770, there was a severe famine in the Santhal region. People were dying of hunger. Tilka looted the treasury of the Company and distributed it among the poor and needy.

Inspired by this noble act of Tilka, many other tribals also joined the rebellion. With this began his “Santhal Hool” (the revolt of the Santhals). He continued to attack the British and their sycophantic allies. From 1771 to 1784, Tilka never surrendered.

The year 1784 is considered as the first armed rebellion against the British and was the beginning of the Santhal’s being historically recorded. It was due to the famine in 1770 and the consequences of Court of Directors orders which resulted in minimum chance to negotiate between local Zamindars and Santhal villagers. Tilka Majhi attacked Augustus Cleveland, an East India Company administrator and fatally

wounded him. The British surrounded the Tilapore forest from which he operated but he and his men held them at bay for several weeks. When he was finally caught in 1784, he was tied to the tail of a horse and dragged all the way to the Collector's residence at Bhagalpur, Bihar, India. There, his lacerated body was hung from a Banyan tree.

40.c

The Government of India recently added two new Ramsar sites. The sites were added on the World Wetlands Day.

Bakhira Wild life sanctuary in Uttar Pradesh and Khijadia Bird Sanctuary in Gujarat. These are the 48th and 49th Ramsar sites of India. Earlier, the 47th Ramsar site was Haiderpur Wetland in Uttar Pradesh.

#### Bakhira Wildlife Sanctuary

It is the largest natural flood plain wetland in India. The floodplain wetland is that part of the river valley that gets flooded with water periodically. The resident time of water here is greater than flood plains. The sanctuary is located to the west of Gorakhpur. It is breeding ground for resident birds and a staging ground for number of migratory birds. The Siberian birds visit the wetland during winter. Also, birds from China, Europe, Tibet and Siberia come to the lake during winters. There are more than 30 fish species. The dominant ones are Chana and Labeo rohita. The wetland is the breeding ground for the grey – headed swamphen. It is also called purple swamphen or Indian purple moorhen. It is locally called Kaima. The wetland is connected to the Bakhira canal. The canal runs 15 kms supplying water for irrigation to the nearby villages.

#### Khijadia Bird Sanctuary

It is located in Jamnagar, Gujarat. More than 300 migratory birds visit the sanctuary. It has freshwater marshlands, freshwater lakes and salt water marshlands. It is fed by river Ruparel. It also has creeks that support mangroves. It is located in the Gulf of Kutch region. The sanctuary is known for different types of nests such as floating nests, on ground nests and the ones built on trees. The black – necked storks are found in abundant in the sanctuary. It is not found anywhere else in India.

41.a

Mahatma Gandhi National Rural Employment Guarantee Act (NREGA) was notified in 2005.

Goal – To improve the livelihood security of people in rural areas.

It is a universal scheme guaranteeing 100 days of wage employment in a year to every rural household that expresses a demand.

It aims to guarantee the 'Right to Work'.

Employment is to be provided within 5 km of an applicant's residence, and minimum wages are to be paid.

If work is not provided within 15 days of applying, applicants are entitled to an unemployment allowance.

That is, if the government fails to provide employment, it has to provide certain unemployment allowances to those people. Thus, employment under MGNREGA is a legal entitlement.

42.d

The River Cities Alliance (RCA) has been launched by Ministry of Jal Shakti along with the Ministry of Housing and Urban Affairs with the objective to provide the member cities with a platform to discuss and exchange information on aspects that are vital for sustainable management of urban rivers, sharing best practices and supporting innovation.

The Alliance will focus on three broad themes- Networking, Capacity Building and Technical Support. Although the Alliance began with the Ganga basin cities, it was extended to include cities beyond the basin as well. The Alliance is open to all river cities of India. Any river city can join the Alliance at any time. The National Mission for Clean Ganga (NMCG) and National Institute for Urban Affairs (NIUA) have collaborated together to launch the RCA.

43.c

Cheetah is the only large carnivore to have become extinct in Independent India. There are no cheetah left in wild in India, therefore, to introduce them in India they have to be brought from abroad. Cheetah has been an integral part of Indian ecosystems, a major evolutionary force, and an important cultural heritage. Their restoration will likely result in better conservation of open forest, grassland, and scrub ecosystems for which they will serve as a flagship species.

Rs. 38.70 crore under the ongoing Centrally Sponsored Scheme of Project Tiger has been allocated to the cheetah introduction project for the years 2021-22 to 2025-26.

Amongst the 10 surveyed sites of the central Indian states, Kuno Palpur National Park (KNP) in Madhya Pradesh has been rated the highest. This is because of its suitable habitat and adequate prey base. KNP is 748 sq km. in area, devoid of human settlements, forms part of Sheopur-Shivpuri deciduous open forest landscape and is estimated to have a capacity to sustain 21 cheetahs.

Kuno is probably the only wildlife site in the country where there has been a complete relocation of villages from inside the park. Kuno also offers the prospect of housing four big cats of India - tiger, lion, leopard and cheetah – and allowing them to coexist as in the past.

44.a

The National Health Authority (NHA) has been entrusted with the role of designing strategy, building technological infrastructure and implementation of “Ayushman Bharat Digital Mission” to create a National Digital Health Eco-system. ABDM consists of five components namely

ABHA Number.

Health Facility Registry

ABHA App

Healthcare Professionals Registry

Unified Health Interface (UHI)

Unique Health ID - One of ABDM's objectives is to develop a repository of verified hospitals, clinics, doctors, physicians, nurses, and pharmacies. As claimed by the ABDM, this will help filter out all the



unscrupulous medical entities to avoid fraud. The ABDM relies on the premise of creating a unique health ID (identifier) for Indians.

The idea is to allow an individual to integrate all their health records onto one platform. Subject to the consent of the participating individual/patient, their health data will be made available for use by the treating doctor or physician, and more parties such as health insurance companies.

This health ID is different from the Aadhaar ID; multiple health IDs can be generated for the same individual.

45.a

Indian National Centre for Ocean Information Services (INCOIS) has carried out coastal vulnerability assessment for entire Indian coast at states level to bring out an Atlas comprising 156 maps on 1:1,00,000 scales to prepare a Coastal Vulnerability Index (CVI).

From this CVI, it can be delineated that Gujarat's 124 coastal kilometers is going to get affected or 5.36%, Maharashtra 11 km or 1.22% and then Karnataka & Goa 48 km or 9.54%, Kerala 15 km or 2.39%, Tamil Nadu 65 km or 6.38%, Andhra Pradesh 6 km or 0.55 %, Odisha 37 km or 7.51% West Bengal 49 km or 2.56%, Lakshadweep Islands 1 km or 0.81%, Andaman Islands 24 km or 0.96km and Nicobar Islands 8 km or 0.97%.

Parameters used - tidal range; wave height; coastal slope; coastal elevation; shoreline change rate; geomorphology; and historical rate of relative sea-level change

46.d

The acronym SVAMITA stands for Survey of Villages and Mapping with Improved Technology in Village Areas.

It is a Central Sector Scheme (100% by Union Government) implemented by Union Ministry of Panchayat Raj.

It is aimed at "providing 'record of rights' to village household owners possessing houses in inhabited rural areas in villages and issuance of property cards to the property owners"

The government aims to provide such property cards to each household in the next three to four years in every village across the country.

The plan is to survey all rural properties using drones and prepare GIS based maps for each village.

During the current financial year, the scheme is being implemented as a pilot project in about 1 lakh villages across 8 states – Maharashtra, Karnataka, Haryana, Uttar Pradesh, Uttarakhand, Madhya Pradesh, Punjab and Rajasthan.

47.d

The Lassa fever-causing virus is found in West Africa and was first discovered in 1969 in Lassa, Nigeria.

The fever is spread by rats.

It is primarily found in countries in West Africa including Sierra Leone, Liberia, Guinea, and Nigeria where it is endemic.

A person can become infected if they come in contact with household items of food that is contaminated with the urine or feces of an infected rat.

Person-to-person transmission is more common in healthcare settings.

Symptoms typically appear 1-3 weeks after exposure.

Mild symptoms include slight fever, fatigue, weakness and headache.

More serious symptoms include bleeding, difficulty breathing, vomiting, facial swelling, pain in the chest, back, and abdomen and shock.

Death can occur from two weeks of the onset of symptoms, usually as a result of multi-organ failure.

How to prevent the epidemic: Maintaining hygiene to prevent rats from entering the house, keeping food in rat-proof containers and laying down rat traps.

48.d

Zero trust is a cyber security strategy wherein security policy is applied based on context established through least-privileged access controls and strict user authentication—not assumed trust. A zero trust architecture follows the maxim “never trust, always verify.”

Zero Trust is a framework for securing infrastructure and data for today’s modern digital transformation. It uniquely addresses the modern challenges of today’s business, including securing remote workers, hybrid cloud environments, and ransomware threats. While many vendors have tried to create their own definitions of Zero Trust, there are a number of standards from recognized organizations that can help you align Zero Trust with your organization.

49.b

The 10 countries with the largest agricultural emissions in 2011 were (in descending order) China, Brazil, United States, India, Indonesia, Russian Federation, Democratic Republic of Congo, Argentina, Myanmar, and Pakistan. Together, these countries contributed 51 percent of global agricultural emissions.

Agriculture contributes 73 per cent of the country’s methane emissions. India has kept away from the recent EU-US pledge to slash methane emissions by 30 per cent by 2030, despite the country being the world’s third largest emitter of methane.

50.c

‘Occupational Health and Safety code’ replaces 13 labour laws relating to safety, health and working conditions, including the Factories Act, 1948, the Mines Act, 1952, and the Contract Labour (Regulation and Abolition) Act, 1970.

Applicability

Establishments employing at least 10 workers,

All mines and docks,

Provides special provisions for certain types of establishments and classes of employees, such as factories and building and construction workers.

Working Hours For Women: Women, after their consent, will be permitted to work beyond 7 pm and before 6 am subject to the safety, holidays, working hours or any other condition as prescribed by the state or the central government.

51.a

- The National Payments Corporation of India (NPCI) serves as an umbrella body for the operation of retail payment in India.
- This organization was established by the Reserve Bank of India along with the Indian Bank's Association.
- The NPCI was founded in the year 2008 under the Payment and Settlement Systems Act, 2007.
- NPCI has been incorporated as a 'not for profit' company under section 8 of Companies Act 2013.

NPCI can operate the following payment systems:

National Financial Switch (NFS); Immediate Payment System (IMPS); Affiliation of RuPay Cards (debit cards/ prepaid cards) issued by banks and co-branded credit cards issued by non-banking financial companies (NBFCs) or any other entity approved by the RBI; National Automatic Clearing House (ACH); Aadhaar Enabled Payments System (AEPS); Operation of Cheque Truncation System.

52.b

- National Commission for Safai Karamcharis (NCSK) was launched as a statutory body; however, it has continued as a non-statutory body since 2004.
- It was formed under the act called 'National Commission for Safai Karamchari Act 1994.'
- The NCSK Act 1994 lapsed in 2004.
- Under the Manual Scavengers Act 2013 the NCSK enquires into complaints received for the contravention of any provision related to the act, and brings it to the concerned authority.
- It takes suo-moto notice of all such matters that are in relation to the non-implementation of the provisions of Manual Scavengers Act 2013.

53.d

Anti microbial resistance is the resistance acquired by any microorganism (bacteria, viruses, fungi, parasite, etc.) against antimicrobial drugs (such as antibiotics, antifungals, antivirals, antimalarials, and anthelmintics) that are used to treat infections.

Reasons for Spread of AMR

1. Antibiotic consumption in humans
  - Unnecessary and injudicious use of antibiotic fixed dose combinations could lead to emergence of bacterial strains resistant to multiple antibiotics
2. Social factors
  - Include self-medication.
  - Access to antibiotics without prescription.
  - Lack of knowledge about when to use antibiotics.
3. Cultural Activities
  - Mass bathing in rivers as part of religious mass gathering occasions.

4. Antibiotic Consumption in Food Animals
  - Antibiotics which are critical to human health are commonly used for growth promotion in poultry.
5. Pharmaceutical Industry Pollution
  - The wastewater effluents from the antibiotic manufacturing units contain a substantial amount of antibiotics, leading to contamination of rivers and lakes.
6. Environmental Sanitation
  - Untreated disposal of sewage water bodies - leading to contamination of rivers with antibiotic residues and antibiotic-resistant organisms.
7. Infection Control Practices in Healthcare Settings
  - A report on hand-washing practices of nurses and doctors found that only 31.8% of them washed hands after contact with patients.

54.b

Several initiatives were taken after the establishment of the United Nations Conference on the Law of the Sea (UNCLOS)

- Commission on the Limits of the Continental Shelf (CLCS) established under the United Nations Convention on the Law of the Sea, is responsible for facilitating the implementation of UNCLOS with respect to the establishment of the outer limits of the continental shelf beyond 200 nautical miles.
- While International Seabed Authority was formed in 1994 for regulating the exploration and exploitation of marine non-living resources of oceans in international waters.
- International Tribunal for the Law of the Sea (ITLOS) established by the UNCLOS, the International Tribunal for the Law of the Sea is an independent judicial body that adjudicates disputes arising out of the convention.
- The Tribunal is composed of 21 independent members elected by secret ballot by the States Parties to the Convention.
- ITLOS Members are elected for a period of 9 years and may be re-elected.

55.c

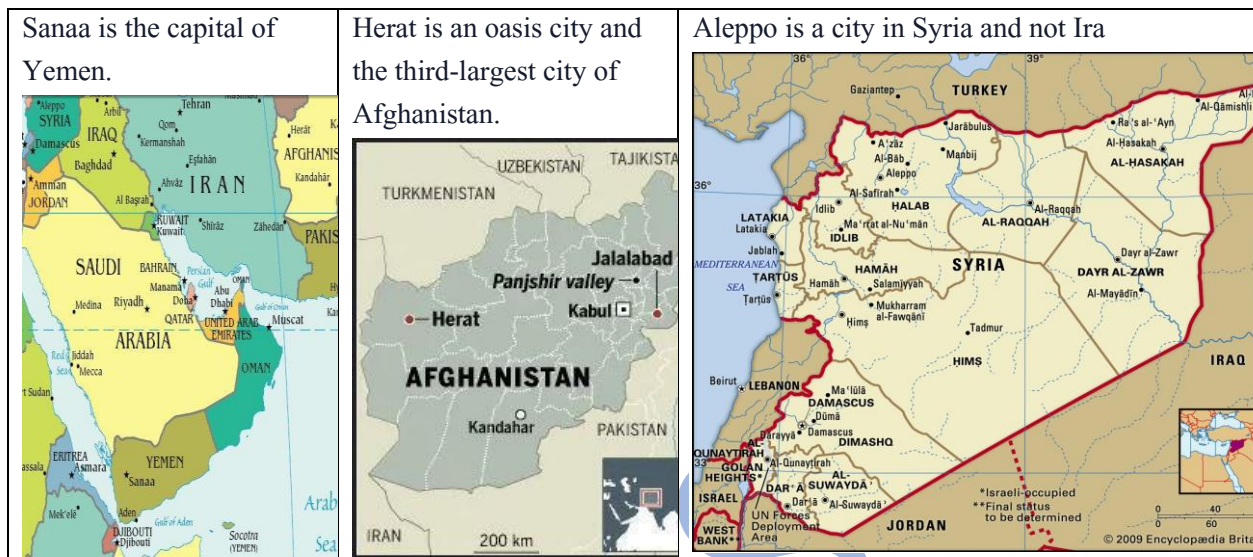
- The increase in oil prices will increase the country's import bill, and further disturb its current account deficit (excess of imports of goods and services over exports).
- If oil prices continue to increase, the government shall be forced to **cut** taxes on petroleum and diesel which may cause loss of revenue and deteriorate its fiscal balance.
- The increase in crude prices could also further increase inflationary pressures that have been building up over the past few months as fuel gets costly and people have to spend more.
- The increase in oil prices has put upward pressure on the price of both Compressed Natural Gas (CNG) used as an alternative transport fuel and Piped Natural Gas (PNG) used as a cooking fuel.

56.c

The Justice JS Verma committee was set up after the Nirbhaya incident of December 2012 and submitted its recommendations on strengthening the laws to curb crimes against women.

Justice J.S. Verma Committee had recommended setting up of an employment tribunal instead of an internal complaints committee (ICC) in the Sexual Harassment at the Workplace Act.

57.a



58.c

Researchers have found scientific evidence of a strong anti-cancer activity in the ethyl acetate fraction of *Halodule uninervis*, a species of seagrass found in the coastal region of Mandapam close to Rameswaram in southern Tamil Nadu.

*Halodule uninervis* is a species of seagrass in the family Cymodoceaceae.

It is native to the western Pacific and Indian Oceans.

This is a common plant of the sublittoral zone in its range, growing in depths up to 20 meters in lagoons, on reefs, and in many other types of marine habitat just offshore.

59.d

The Dayabhaga and The Mitakshara are the two schools of law that govern the law of succession of the Hindu Undivided Family under Indian Law.

In the Mitakshara School, the allocation of inherited property was based on the law of possession by birth.

The property is inherited in the Dayabhaga School after the death of the person who was in possession of it.

The doctrine of son's birth right and the devolution of property by survivorship had limited space in Dayabhaga School.

To put it simply, Mitakshara was based on the 'principle of ownership by birth, and Dayabhaga on principle of ownership by death'.

The Dayabhaga School of law is observed in Bengal and Assam, in all other parts of India the Mitakshara School of law is observed.

60.b

- The Thamirabarani or Tamraparni or Porunai is a perennial river that originates from the Agastyarkoodam peak of Pothigai hills of the Western Ghats.
- It flows through Tirunelveli and Thoothukudi districts of the Tamil Nadu state of southern India into the Gulf of Mannar, hence it is a east flowing river.
- It is the shortest river in the state (Tamil Nadu).
- The Thamirabarani civilisation in Tamil Nadu is at least 3,200 years old, reveals carbon dating done on organic material retrieved from archeological excavations in Sivakalai, Thoothukudi district.
- It could lead to evidence that there was a city civilisation (Porunai River (Thamirabarani) civilization) in south India as long back as 3,200 years ago, the later part of the Indus Valley Civilisation.



61.b

The federal government is requesting applications from 100 startups, MSMEs, R&D firms, and academics to train 85,000 engineers in the domains of very large-scale integration (VLSI) as well as embedded system design under the Chip to Start-up (C2S) Programme.

The programme also covers every aspect of the electronics value chain, including quality personnel training, research and development, system design, hardware IP design, prototyping, application-oriented research and development, and implementation.

- Centre for Development of Advanced Computing (C-DAC) is the nodal agency for the C2S program's implementation.
- C-DAC is a scientific organisation working under MeitY (Ministry of Electronics and Information Technology).

62.d

- Shanghai Cooperation Organisation (SCO) is a permanent intergovernmental international organisation.

- It was created in 2001. It's a Eurasian political, economic and military organisation aiming to maintain peace, security and stability in the region.
- Prior to the creation of SCO in 2001, Kazakhstan, China, Kyrgyzstan, Russia and Tajikistan were members of the Shanghai Five.
- Following the accession of Uzbekistan to the organisation in 2001, the Shanghai Five was renamed the SCO.
- India and Pakistan became members in 2017.
- Iran is the ninth and the newest member of SCO.

63.d

The Iran Nuclear Deal, formally known as Joint Comprehensive Plan of Action (JCPOA) is an agreement on the Iranian nuclear program, between Iran and the P5+1 (the five permanent members of the United Nations Security Council—China, France, Russia, United Kingdom, United States—plus Germany). The main objective of the Joint Comprehensive Plan of Action was to slow down Iran's nuclear program. Iran agreed not to produce highly enriched uranium or plutonium, both key components of a nuclear weapon. The European Union, the UN and the United States committed lifting sanction on Iran. The US has restored sanctions waivers to Iran recently to allow international nuclear cooperation projects.

64.b

- The Special Drawing Rights (SDR) is neither a currency nor a claim on the International Monetary Fund (IMF). Rather, it is a potential claim on the freely usable currencies of IMF members.
- SDRs can be exchanged for these currencies.
- The SDR serves as the unit of account of the IMF and some other international organizations.
- The SDR basket of currencies includes the US dollar, Euro, Japanese yen, pound sterling and the Chinese renminbi (included in 2016).
- Quota (the amount contributed to the IMF) of a country is denominated in SDRs.
- Members' voting power is related directly to their quotas.
- IMF makes the general SDR allocation to its members in proportion to their existing quotas in the IMF.

65.a

According to Article 262, in case of disputes relating to waters:

- Parliament may by law provide for the adjudication of any dispute or complaint with respect to the use, distribution or control of the waters of, or in, any inter-State river or river valley.
- Parliament may, by law provide that neither the Supreme Court nor any other court shall exercise jurisdiction in respect of any such dispute or complaint as mentioned above.

Surface water is controlled by Central Water Commission (CWC) and ground water by Central Ground Water Board of India (CGWB).

Both bodies work independently.

66.c

The World Social Protection Report takes a comprehensive look at how countries are investing in social security, how they are financing it, and how effective their approaches are.

The report is published by the International Labour Organization (ILO).

67.a

The Baltic Sea is surrounded by nine countries:

Denmark, Germany, Poland, Lithuania, Latvia, Estonia, Russia, Finland and Sweden.



68.c

Pacific rim or the Circum-Pacific Belt, is an area along the Pacific Ocean that is characterized by active volcanoes and frequent earthquakes.

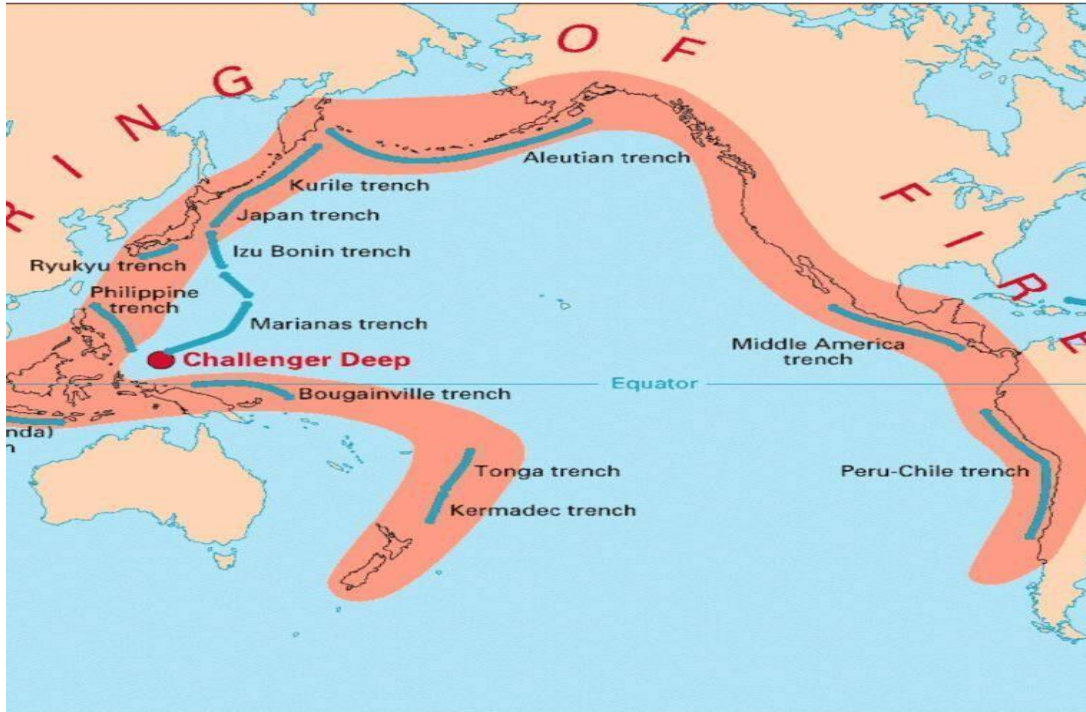
It is home to about 75% of the world's volcanoes – more than 450 volcanoes. Also, about 90% of the world's earthquakes occur here.

When two tectonic plates collide into each other, a plate boundary is formed, which is called a convergent plate boundary.

These boundaries are subduction zones where a heavier plate subducts under the lighter one.

When the subduction takes place, there is a transformation of dense magma into buoyant magma that rises up the earth's surface.





69.b

Nord Stream, the longest subsea pipeline, is an export gas pipeline which runs under the Baltic Sea carrying gas from Russia to Europe.

Nord Stream consists of two pipelines, which have two lines each.

Nord Stream 1 was completed in 2011 and runs from Vyborg in Leningrad (Russia) to Lubmin near Greifswald, Germany.

Nord Stream 2 which runs from Ust-Luga in Leningrad to Lubmin was completed in September 2021.

70.c

There are three subspecies of swamp deer found in the Indian Subcontinent.

- The western swamp deer found in Nepal.
- Southern swamp deer/Hard Ground Barasingha, found in central.
- North India and Eastern swamp deer found in the Kaziranga (Assam).

Kanha has become the first tiger reserve in India to officially introduce a mascot — Bhoorsingh the Barasingha — to present the hard ground swamp deer as the spirit of the reserve and spread awareness to save it from possible extinction.

Barasingha, or swamp deer, is the state animal of Madhya Pradesh.

71.b

- India has the world's fifth-largest rare earth mineral reserves. Indian Rare Earths Ltd, under the Department of Atomic Energy, is the sole producer of rare earth compounds due to the radioactivity of monazite sands.

- Their importance lies in their unique electronic, optical and magnetic characteristics, which cannot be matched by any other metal or synthetic substitute.
- In India, REEs are produced from monazite contained in heavy-mineral sands. The two Government-owned producers are the Rare Earth Division of Indian Rare Earths Ltd. (IREL) and Kerala Minerals and Metals Ltd. (KMML).

72.a

Astronomers like Varahamihira, Aryabhata, Bhaskara, Brahmagupta, and others mention their scientific instruments.

73.c

Bodhisena (704–760) was an Indian Buddhist scholar and monk known for traveling to Japan and establishing the Kegon school, the Japanese transmission of the Huayan school of Chinese Buddhism. Bodhisena was born in Madurai around 704 AD. He got mystical inspiration from Manjusri Bodhisattva.

74.c

India follows a system of legal pluralism that allows different religious communities to be governed by their own codes of personal law. This has been seen as a way of protecting distinct communal identities and safeguarding the right of citizens to practice their faith, as enshrined in the Constitution.

The Constitution grants equal protection under the law to all citizens. That being said, Muslims are governed by a personal law, which came into force in 1937.

However, the authors of the Constitution wanted a common set of family laws.

Article 44 of the Directive Principles of State Policy in the Indian Constitution mandates that “The state shall endeavor to secure for all citizens a Uniform Civil Code throughout the territory of India.”

The Uniform Civil Code (UCC) calls for the formulation of one law for India which would apply to all religious communities in matters such as marriage, divorce, inheritance, and adoption.

On account of the intrepid opposition of Muslim members, the idea was dropped but the issue was not sealed. It was left to the wisdom of the coming generations to explore the idea of a generic set of personal laws—a uniform civil code (UCC) applicable to all Indians.

The Uniform Civil Code doesn't mean that there should be a Hindu Code which is made uniform. The most liberal elements of all the personal laws, whether it is Hindu Law, Muslim Law, Christian Law, and so on, should be taken together to provide a Uniform Civil Code. That should apply to the entire country and will be acceptable to all communities.

75.a

The High Court's original jurisdiction is exercised in proceedings under Article 226.

Article 227 of the Indian Constitution grants supervisory jurisdiction to the high courts of the states. Except for any court or tribunal constituted by or under any law relating to the armed forces, the High Courts have superintendence over all other courts and tribunals throughout the territories over which they have jurisdiction.

76.a

Convertibility refers to the ability to convert domestic currency into foreign currencies and vice versa to make payments for balance of payments transactions.

Current account convertibility is the ability or freedom to convert domestic currency for current account transactions while capital account convertibility is the ability or freedom to convert domestic currency for capital account transactions.

The Tarapore Committee (2006), for instance, defined capital account convertibility as the “freedom to convert local financial assets into foreign financial assets and vice versa.”

The degree of BOP convertibility of a country usually depends on the level of its economic development and degree of maturity of its financial markets. Therefore, advanced economies (AEs) are almost fully convertible while emerging market economies (EMEs) are convertible to different degrees.

77.b

Gaidinliu was a Naga spiritual and political leader who led a revolt against British rule in India. Gaidinliu was arrested in 1932 at the age of 16, and was sentenced to life imprisonment by the British rulers. After the Interim Government of India was set up in 1946, Rani Gaidinliu was released. She did not take part in Quit India Movement.

In 1927, Gaidinliu joined the Heraka movement of her cousin Haipou Jadonang, who had emerged as a prominent local leader. Jadonang's movement was a revival of a tribal religion. It attracted a number of followers from the Zeliangrong tribes (the Zeme, Liangmai and Rongmei).

78.a

Rise in global oil prices weakens Rupee as India has to purchase dollars to pay for oil.

Rise in interest rates by US federal reserve will lead to more demand for dollars thereby weakening Rupee.

Sale of US Dollars by the central bank in the spot and futures market will curb the impact of fall in Rupee.

79.d

Rani Abakka, the Queen of Ullal, Karnataka fought and defeated the mighty Portuguese in the 16th century.

Matangini Hazra was a brave freedom fighter from Bengal, who laid down her life while agitating against the British.

Jhalkari Bai, was a woman soldier who grew to become one of the key advisors to the Rani of Jhansi and a prominent figure in the First War of Indian Independence, 1857.

80.a

Engaged in agriculture and trade, Indus Valley people were adept at designing well laid townships with a good system of water management. These communities slowly declined as a result of increasing aridity and declining summer rainfall.

The Rigvedic people worshipped fire and were not builders like the Harappans but are likely to have been better story-tellers.

The Rigvedic people were pastoral migrants and their grazing animals including horses came in from the Eurasian Steppes.

81.c

Hispar Glacier is located in Jammu & Kashmir state in the Karakoram range.

Milam Glacier is located in Trishul peak of Pithoragarh of Uttarakhand. It is the source of Goriganga.

Zemu Glacier is the largest glacier in the Eastern Himalayas located on Kanchenjunga peak, Sikkim.



82.b

The Prime Minister will inaugurate the Statue of Equality, a statue of Ramanujacharya, on the outskirts of Hyderabad, Telangana.

Born in 1017 in Sriperumbudur in Tamil Nadu, Ramanujacharya is revered as a Vedic philosopher and social reformer. He was also referred to as Ilaya Perumal which means the radiant one.

He traveled across India, advocating equality and social justice.

He is famous as the chief proponent of Vishishtadvaita subschool of Vedanta. It is non-dualism of the qualified whole, in which Brahman alone is seen as the Supreme Reality, but is characterized by multiplicity.

He went on to write nine scriptures known as the navaratnas.

Ramanuja's most important writings include his commentary on the Vedanta Sutras (the Sri Bhasya, or "True Commentary"), and his commentary on the Bhagavad-Gita (the Gitabhasya, or "Commentary on the Gita").

His other writings include the Vedartha Samgraha ("Summary of the Meaning of the Veda"), the Vedantasara ("Essence of Vedanta"), and Vedantadipa ("Lamp of Vedanta").

83.c

The Bhakti Movement in Maharashtra is centred around the shrine of Vithoba, also known as Vitthala and Panduranga, is a Hindu deity predominantly worshipped in the Indian state of Maharashtra and Karnataka.

He is generally considered as a manifestation of the god Vishnu, or his avatar, Krishna.

The Bhakti movement is divided into two sects:

**Varakaris** – The mild devotees of God Vitthala of Pandharpur, who are more emotional, theoretical and abstract in their viewpoint.

**Dharakaris** – The heroic followers of the cult of Ramadasa, the devotee of God Rama, who are more rational, concrete and practical in their thoughts.

Sant Eknath (c. 1533 – 1599 CE) was a scholar of Varkari sampradaya and Vaishnavism, the branch of Hinduism that is characterised by devotion to God Vishnu and his incarnations (avatars).

He is known to have enriched Marathi literature and had translated various Sanskrit texts into Marathi. He also tried to shift the emphasis of Marathi literature from spiritual to narrative composition and introduced a new form of Marathi religious song called Bharood.

Other saints belonging to the Vithoba cult were Jnaneswar/Jnanadeva, Tukaram and Namdeva.

84.d

The Holocene extinction, otherwise referred to as the sixth mass extinction or Anthropocene extinction, is an ongoing extinction event of species during the present Holocene epoch (with the more recent time sometimes called Anthropocene) as a result of human activity.

The included extinctions span numerous families of bacteria, fungi, plants and animals, including mammals, birds, reptiles, amphibians, fish and invertebrates.

The Holocene extinction includes the disappearance of large land animals known as megafauna, starting at the end of the last glacial period.

Mass extinctions are characterized by the loss of at least 75% of species within a geologically short period of time.

85.b

- Living Root Bridges are aerial bridges built by weaving and manipulating the roots of Indian Rubber trees and hence these bridges are elastic in nature.
- They are also known as Ficus Elastica trees.
- They are locally called Jing Kieng Kri.
- These root bridges are about 100 feet long.
- The perfect shape is obtained after almost 10 to 15 years.
- Once they are fully grown, these roots last for about 500 years or even more.
- These structures have a capacity to hold more than 50 people over the bridge.
- Living Root Bridges, remain in the news as the Zoological Survey of India has sought UNESCO Tag for it and have not got it yet.

86.b

Gherkins are a cucumber that has been pickled in a brine, vinegar, or other solution and left to ferment for a period of time, by either immersing the cucumbers in an acidic solution or through souring by lacto-fermentation.

Gherkin cultivation, processing and exports started in India during the early 1990s with a modest beginning in Karnataka State in South India and later extended to the neighbouring states of Tamil Nadu and Andhra Pradesh.

It grows in regions where ideal soil type and the desirable temperatures of not less than 15 degrees Centigrade and not more than 35 degrees Centigrade.

Nearly 15% production of the world's gherkin requirement is grown in India.

Recently, India has become the largest exporter of gherkins in the world. India exported cucumber and gherkins (Pickling Cucumber) to the tune of 1,23,846 metric tonnes with a value of USD 114 million during April-October (2020-21).

87.a

- Glasgow Climate Pact as part of COP26 is an agreement of all countries that were parties to the Paris Agreement of 2015 on how to take forward the agenda set in the Paris Agreement.
- It adopted the Global Methane Pledge. Methane is a significant greenhouse gas with 28 to 34 times higher temperature forcing quality than carbon but stays in the atmosphere for a shorter duration.
- An agreement is signed among 100 countries to cut methane emissions by 30 % by 2030.
- The Glasgow agreement will also fund the Santiago Network, which is supposed to build technical expertise about climate adaptation in vulnerable nations.
- The Santiago Network is a network to enable loss and damage fund flow from developed to developing countries. It was created at the Madrid COP in 2019.

88.b

5G mainly works in 3 bands, namely low, mid and high-frequency spectrum.

Low Band Spectrum: In terms of coverage and speed of Internet and data exchange, the maximum speed is limited to 100 Mbps (Megabits per second). The telecom companies can use and install it for commercial cellphone users.

Mid Band Spectrum: It offers higher speeds compared to the low band, but has limitations in terms of coverage area and penetration of signals. This band may be used by industries and specialised factory units.

High Band Spectrum: It offers the highest speed of all the three bands, but has extremely limited coverage and signal penetration strength. This band greatly enhances futuristic 5G technology applications like Internet of Things (IoT) etc.

- Some of the C band (a radio frequency band between 3.7 and 4.2 GHz) spectrum auctioned had been used for satellite radio but the transition to 5G means there will be much more traffic.
- FAA (Federal Aviation Authority, of the USA) warned that the functioning of Altimeters, which measure how far above the ground an aeroplane is travelling, operating in the 4.2-4.4 GHz range which sits too close to the frequency of C range, may get hampered.
- In addition to altitude, altimeter readouts are also used to facilitate automated landings and to help detect dangerous currents called wind shear.

89.b

- Established in 1987, the Indian Renewable Energy Development Agency Limited (IREDA) is a Mini Ratna (Category – I) Government of India Enterprise under the administrative control of the Ministry of New and Renewable Energy (MNRE).

- IREDA has been notified as a “Public Financial Institution” under section 4 ‘A’ of the Companies Act, 1956 and registered as Non-Banking Financial Company (NFBC) with Reserve Bank of India (RBI)
- It is the only dedicated institution for financing Renewable Energy (RE) & Energy Efficiency (EE) projects in India.
- Since, its inception the company has played a catalytic role in developing market for financing RE & EE projects.
- To provide financial assistance to schemes and projects generating energy or electricity through renewable sources and conserving energy through efficient usage.

90.c

India is the largest user of groundwater in the world, extracting groundwater to the tune of 253 billion cubic meters (bcm) per year.

It is about 25% of the global groundwater extraction.

Out of total groundwater available, 90% of it is used for irrigation purposes which are mainly for agricultural purposes.

The remaining 10% accounts for domestic and industrial purposes combined.

Water as a subject belongs to the states which make it their responsibility to regulate and manage it.

But under the Environment Protection Act, the Central Ground Water Authority can issue guidelines to states.

Central Ground Water Authority (CGWA), has been constituted by the Government of India under Section 3 (3) of the Environment Protection Act (EPA) of 1986, and it has the mandate to regulate and control development and management of water resources in the country.

91.d

The Ministry of Electronics and Information Technology (MeitY) has proposed a new model of “Federated Digital Identities” under which a citizen’s multiple digital IDs — from PAN and Aadhaar to driving licence and passport numbers — can be interlinked, stored, and accessed via one unique ID.

A federated identity in information technology is the means of linking a person’s electronic identity and attributes, stored across multiple distinct identity management systems.

Federated identity is related to single sign-on (SSO), in which a user’s single authentication ticket, or token, is trusted across multiple IT systems or even organizations.

SSO is a subset of federated identity management, as it relates only to authentication and is understood on the level of technical interoperability and it would not be possible without some sort of federation.

92.b

NeoCov is a virus variant linked to Middle East Respiratory Syndrome coronavirus (MERS-CoV).

NeoCoV is not a new virus, it was first found in 2014.

It is said to carry the mortality rate of Middle East Respiratory Syndrome coronavirus (MERS)-CoV and the high transmission rate of the current SARS-CoV-2 coronavirus.

NeoCoV cannot interact with human receptors, implying that in its current form the virus cannot infect humans.

MERS Coronavirus is Middle East Respiratory Syndrome coronavirus. It is a zoonotic virus which means that it is transmitted between animals and people.

Most of the human cases of MERS-CoV infections spread through human-to-human infections.

93.a

Situated between the Western and Eastern Ghats the Biligiri Rangaswamy Temple (BRT) Tiger Reserve is based in south eastern Karnataka, at the border of Tamil Nadu.

It is located in the middle of the bridge connecting the Western and Eastern Ghats.

It is named BILIGIRI from the white rocky cliff on top of which stands a temple dedicated to Lord VISHNU known locally as Rangaswamy.



94.d

Gangaikondacholapuram was founded by Rajendra Chola I to commemorate his victory over the Pala Dynasty.

It became the capital of the Chola dynasty in c. 1025 during the reign of Rajendra Chola I, and served as the Chola capital for around 250 years.

Rajaraja Chola (Arumolivarman), in the year 1009-10, completed the Brihadeeswara Temple, dedicated to 'the Great Lord Siva'.

The temple is 5 times the size of previous Chola temples and its 'Vimana' stands 216 feet tall.

From the Brihadeeswara temple began the development of the temple as the centre of cultural activities.

95.a

Reverse Repo Normalisation means the reverse repo rates will go up i.e. raising the reverse repo rate in one or two stages.



In the face of rising inflation, several central banks across the world have either increased interest rates or signaled that they would do so soon.

In India, too, it is expected that the RBI will raise the repo rate. But before that, it is expected that the RBI will raise the reverse repo rate and reduce the gap between the two rates.

It incentivizes commercial banks to park excess funds with RBI, thus sucking some liquidity out of the system. The next step would be raising the repo rate.

This process of normalization, which is aimed at curbing inflation, will not only reduce excess liquidity but also result in higher interest rates across the board in the Indian economy.

96.b

- Foreign funding of persons in India is regulated under the Foreign Contribution (Regulation) Act (FCRA), 2010 and is implemented by the Ministry of Home Affairs. Individuals are permitted to accept foreign contributions without permission of MHA. However, the monetary limit for acceptance of such foreign contributions shall be less than Rs. 25,000.
- Foreign Contribution (Regulation) Amendment Act, 2020 makes Aadhaar number mandatory for all office bearers, directors or key functionaries of a person receiving foreign contribution, as an identification document.

Other provisions of the Foreign Contribution (Regulation) Amendment Act, 2020:

- The Act bars public servants from receiving foreign contributions.
- The Act prohibits the transfer of foreign contribution to any other person not registered to accept foreign contributions.
- The Act states that foreign contributions must be received only in an account designated by the bank as FCRA account in such branches of the State Bank of India, New Delhi.
- The Act proposes that not more than 20% of the total foreign funds received could be defrayed for administrative expenses.

97.b

West Texas Intermediate (WTI) is a light, sweet crude oil that serves as one of the main global oil benchmarks.

It is sourced primarily from inland Texas and is one of the highest quality oils in the world, which is easy to refine.

WTI is known as a light sweet oil because it contains around 0.34% sulfur, making it “sweet,” and has a low density (specific gravity), making it “light.”

WTI is the underlying commodity for the NYMEX’s oil futures contract.

WTI is often compared to Brent crude, which is an oil benchmark for two-thirds of the world’s oil contracts based on oil extracted in the North Sea.

98.a

- Najafgarh Jheel is a transboundary wetland.
- It is located along the borders of Delhi and Haryana. The Najafgarh lake is under the control of Delhi.
- It is the second-largest water body in Delhi-NCR after the Yamuna.

- Migratory Birds: Migration of Egyptian vulture, Sarus Crane, Steppe Eagle, Greater Spotted Eagle, and Imperial Eagle along the Central Asian Flyway has been reported at the lake.
- The Lake is fed by the Sahibi River.
- It was connected with the river Yamuna through the Najafgarh drain.
- The lake is largely filled with sewage from Gurugram and the surrounding villages of Delhi.
- The National Green Tribunal recently directed the Haryana and Delhi governments to implement the environment management plans prepared by them. The plan aims to rejuvenate Najafgarh Jheel.

It is not a part of the Ramsar list.

99.b

- Being a statutory adjudicatory body like Courts, apart from original jurisdiction side on filing of an application, NGT also has appellate jurisdiction to hear appeal as a Court (Tribunal).
- The Tribunal is not bound by the procedure laid down under the Code of Civil Procedure 1908, but shall be guided by principles of 'natural justice'.
- An appeal against order/decision/ award of the NGT lies to the Supreme Court, generally within ninety days from the date of communication.
- The Tribunal comprises of the Chairperson, the Judicial Members and Expert Members.
- They shall hold office for term of five years and are not eligible for reappointment.
- The Chairperson is appointed by the Central Government in consultation with Chief Justice of India (CJI).
- A Selection Committee shall be formed by central government to appoint the Judicial Members and Expert Members.

NGT is mandated to make disposal of applications or appeals finally within 6 months of filing of the same.

100.b

- Any expenditure incurred from this fund requires a subsequent approval from the Parliament i.e. Parliamentary authorization is Required after the expenditure has been made.
- Approval of the Parliament of India for such expenditure and for withdrawal of an equivalent amount from the Consolidated Fund is subsequently obtained to ensure that the corpus of the Contingency Fund remains intact.

The Constitution gave Parliament the power to create a 'Contingency Fund of India,' into which lawfully established amounts are paid from time to time.

As a result, in 1950, Parliament passed the India Contingency Fund Act.

This money is placed at the President's disposal, and he can use it to make advances to cover unexpected expenses while the Parliament approves it. The finance secretary manages the money on behalf of the President.

The fund can be increased through a Finance Bill when Parliament is in the session. Or through Ordinance if the House is not in session and situation warrants.