



Civils Cafe

IAS Study Circle

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CIVILS CAFE IAS

All India

Comprehensive Prelims

Simulator Test 1

GS-1

(ANS)

1. A

- **Maharaja Ranjit Singh** (13 November 1780 – 27 June 1839), popularly known as **Sher-e-Punjab** or “**Lion of Punjab**”, was **the first Maharaja of the Sikh Empire**.
- He **survived smallpox** in infancy but lost sight in his left eye.
- Ranjit Singh’s trans-regional empire spread over several states. His empire included the former Mughal provinces of Lahore and Multan besides part of Kabul and the entire Peshawar.
- The boundaries of his state went up to Ladakh — Zorawar Singh, a general from Jammu, had conquered Ladakh in Ranjit Singh’s name — in the northeast.
- His empire extended till Khyber pass in the northwest, and up to Panjnad in the south where the five rivers of Punjab fell into the Indus.
- At the time of his death, **he was the only sovereign leader left in India**, all others having come under the control of the East India Company in some way or the other.

News: A bronze statue of the first ruler of the Sikh Empire, Maharaja Ranjit Singh, was vandalized in Pakistan.

2. D

Bhagwati Charan Vohra, is the correct answer. Philosophy of the Bomb was written by **Bhagwati Chandra Vohra, Chandrasekhar Azad and Yashpal**. In this article he explains the viewpoints of radicals. The last paragraph of the article said, “**There is no crime that Britain has committed in India**”.

3. A

Wood’s Despatch is called **Magnacarta of English Education** in India. However, it recommended that the Indians should be given training in their mother tongue also. **Vernaculars were to be used for school’s education** though it had.

It recommended that the British Government should support **Women's Education and give financial assistance for the opening of Girls' Schools**. The Wood's Despatch also recommended the establishment of institutes of vocational education and teacher training.

The Wood's Dispatch, for the first time, recommended the creation of a **Department of Public Instruction in each of the five provinces of Bengal, Bombay, Madras, Punjab and the North Western province**. Hence statement 3 is incorrect.

4. D

British introduced a policy of **forced free trade in India** which ruined India's handicraft **industry and forced the infant and underdeveloped** modern industry into a premature and unequal competition with developed industries of the West. Hence option a is correct.

The colonial rule witnessed three phases- mercantile colonialisms, industrial colonialism and financial colonialism. In the **third phase the surplus capital** was invested in India in sectors like railway with a provision of assured return. Thus option b is correct.

India used to enjoy a surplus **in merchandise trade during colonial times**. In fact, this trade surplus during the colonial times was itself an instrument to perpetuate the "drain of wealth" from India to Britain. In a way, whatever surplus India earned through excess exports, was siphoned off to colonial Britain under various expenses such as "**home charges**", or **military payments or remittances** of British residents and officials in India to Britain, or interest payments. Thus option c is correct.

Hence D is the correct answer.

5. C

Pair 1 is correct: Puthand is the New year festival of Tamil Nadu.

Pair 2 is incorrect: Losoong festival is celebrated in honour of the Sikkimese New year. It is celebrated all across the State of Sikkim during the month of December every year.

Pair 3 is incorrect: Cheiraoba festival is celebrated all across the State of Manipur, as it is the New Year according to the Manipuri tribes. It is celebrated in the month of April (it means the first day of the month Sajibu).

6. B

In **Kangra School** a very famous group of paintings is **the 'Twelve months'** where the artist tried to bring forth the effect of the twelve months on the emotions of human beings. This emotive style was popular till the 19th century. The Kangra school became the parent school to the other ateliers which developed in the region of **Kullu, Chamba and Mandi**.

7. B

Kanchipuram being the temple city, it is known as **'city of thousand temples'** Home to **Ekambareswarar temple** (having one of the tallest temple towers aka **Vimana** in India) which is 192 feet high temple tower.

The **100-pillar mandapam (building) in Varadaraja Perumal temple** dedicated to Lord Vishnu in this town is also famous, and both these are considered marvels of the architectural techniques of the **Vijayanagara dynasty**.

8. B

Statement 1 is incorrect: Hinayana does not consider Buddha as god. Buddha, "the Awakened One," is revered above all not as "God" but as supreme sage, model of a fully enlightened person.

Statement 2 is correct: The Mahayana school is more liberal and believes in the heavenliness of Buddha and Bodhisattvas embodying Buddha Nature. The concept of Bodhisattva is the result of Mahayana Buddhism.

Statement 3 is correct: Emperor Ashoka patronised Hinayana sect as Mahayana school came into being much later.

Statement 4 is incorrect: It is recorded that in the **fourth council in King Kanishka's** reign, there was a split in Buddhism and two sects were born: **Hinayana and Mahayana Buddhism.**

9. C

- A study to establish the **Thamiraparani river civilization** will also be conducted in Tirunelveli and Thoothukudi districts.
- Encouraged by the archaeological **findings in Keeladi** that testified to the existence of an ancient urban Tamil civilisation, the Department of Archaeology has decided to launch excavations at seven more sites and field studies in two places.
- 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 Civilization.
- This is the oldest civilization perhaps, older than the Vaigai civilization which is believed to be 2,600 years old.

About Thamirabarani River

- The Thamirabarani or Porunai is a perennial river that originates from the **Agastyarkoodam peak** of Pothigai hills of the Western Ghats, above Papanasam in the Ambasamudram taluk.
- **It is the only perennial river in Tamil Nadu.**
- It flows through Tirunelveli and Thoothukudi districts of the Tamil Nadu state of southern India into the Gulf of Mannar.
- It was called the Tamraparni River in the pre-classical period, a name it lent to the island of Sri Lanka. The old Tamil name of the river is Porunai.

10. A

Characteristic feature of the Islamic architecture was the **use of arches and domes in place of pillars and beams**. Although there are exceptions to it where pillars and beams were used, pillars and beams were not the features of Islamic architecture. **Bricks along with rough and dressed stones were used as building material.**

11. C

- The **first Round Table Conference** was convened from 12 November **1930 to 19 January 1931**
- **Singh, Rajguru and Sukhdev** were sentenced to death in the Lahore conspiracy case and were hanged on **23 March 1931**.
- The congress adopted a **resolution on Fundamental Rights** and the **National Economic Programme** at its Karachi session held between 26th and 31st **March 1931**.
- The **Communal Award** was made by the British prime minister Ramsay MacDonald on 16 **August 1932** granting separate electorates in India for the Forward Caste, Scheduled Caste, Muslims, Buddhists, Sikhs, Indian Christians, Anglo-Indians, Europeans and Depressed Classes etc.

Hence C is the correct answer.

12. A

- **Tajwiz:** It was a petition presented by a nobleman to the Mughal Emperor recommending that an applicant be recruited as mansabdar.
- **Tanqa, Jital:** Coins used during sultanate
- **Waqia Navis:** News reporter.
- **Qanungos:** Officer responsible for surveying land in Pargana during Mughal period.

13. B

CDM began on 6th April 1930 with breaking of the salt law. An all-white seven - member Indian Statutory Commission, popularly known as the **Simon Commission** (after the name of its chairman Sir John Simon), on November 8, 1927. There was a chorus of protest by all Indians against the Simon Commission. All Parties Conference met in February 1928 and appointed a subcommittee under the chairmanship of Motilal Nehru to draft a constitution.

On **November 2, 1929**, a conference of prominent national leaders issued a "**Delhi Manifesto**". Viceroy Irwin rejected these demands on December 23, 1929, which led to the demand of **Purna swaraj in the Lahore session of INC**. This session authorised Gandhiji to launch the CDM.

August Offer was a statement issued by the Viceroy, Lord Linlithgo on **8th August 1940**. So clearly this came years after the CDM.

14. D

Statement 3 is incorrect: Transfer of capital from Calcutta to Delhi (1911) was took place during the time of Lord Hardinge II (1910 – 1916)

Reactionary policies of Lord Curzon (1899 – 1905):

- **Calcutta Corporation act 1899** he reduced the number of elected legislatures to deprive Indians from self-governance.
- **Partition of Bengal in 1905.**
- **Indian Universities Act of 1904**, which brought all the universities in India under the control of the government.
- **The Agriculture Research Institute in Pusa** (Bihar – Bengal Presidency) was established.
- **The Imperial cadet corps** was set up which became an instrument for Indianisation of the army later.

- **Ancient Monuments Act, 1904** which made it obligatory on the part of the government and local authorities to preserve the monuments of archaeological importance and their destruction an offence.

15. D

Individual Satyagraha, is the correct answer. Individual Satyagraha was started on 17th October 1940. The demand of the Satyagrahi was using freedom of Speech against the war through an anti war declaration. If the government does not arrest the Satyagrahi, he or she will repeat it in villages and start a march towards Delhi. Thus the movement came to be known as **“Delhi Chalo Movement ”**.

16. D

All the pairs are correct.

- **Bengalee** (this and Amritha Bazar Patrika – the first vernacular papers) was founded by **Girishchandra Ghosh**.
- **Rast Goftar** (A Gujarati fortnightly) was journal of **Dadabhai Naoroji**
- **Sambad Kaumudi** (weekly in Bengal) and **Mirat – ul – Akbar** was released by **Raja Ram Mohan Roy**

17. C

Statement 1 is incorrect: Syed Badruddin Tyabji was the first Muslim president at Madras session (1887).

Statement 2 is incorrect: For the first time, Kadambini Ganguly and five other women were allowed to participate in the Congress Session and India's first female doctor even moved a vote of thanks (Bombay session 1889).

Note: Sarojini Naidu was the first Indian women president of INC.

18. C

All the given statements are correct.

Archaeological Survey of India:

- The ASI is the premier organization for the archaeological research and protection of the cultural heritage of the country.
- The prime objection of ASI is to maintain the archaeological sites, ancient monuments and remains of national importance.
- **Headquarters:** New Delhi.
- **Established:** 1861 by Alexander Cunningham.
- It regulates all archaeological activities as per the provisions of the Ancient Monuments and Archaeological Sites and Remains Act, 1958.
- It functions under the aegis of the Union **Ministry of Culture**.
- It also regulates the Antiquities and Art Treasure Act, 1972.

19. C

“**A Nation in Making**” is the name of **Banerjee’s autobiography**, which he wrote after quitting politics. He eventually completed this book by 1925.

20. B

- **Fort St. Angelo:** St. Angelo's Fort, popularly known as the **Kannur Fort**, is a massive triangular laterite fort and is among the most historic sites in Kannur. Constructed by the first **Portuguese** Viceroy, **Don Francesco de Almeida** in **1505**, the fort is flanked by gigantic bastions that make for an imposing sight.
- **Fort St. George** is the **first English fortress** in India, founded in **1639** at the coastal city of **Madras**, the modern city of Chennai. The construction of the fort provided the impetus for further settlements and trading activity, in what was originally an uninhabited land.
- **Fort St. David:** The fort was built by the **British in Cuddalore** in the year **1702**.
- **Fort William** College (also known as the College of Fort William) was an **academy of oriental studies** and a centre of learning, founded on **10 July 1800** by **Lord Wellesley**, then Governor-General of British India, located within the Fort William complex in Calcutta.

21. C

Statement 1 is correct: Margaret Cousins and Amrit Kaur were the founding members of the AIWC. One of the first secretaries of the AIWC was Kamaladevi Chattopadhyay. The AIWC was registered in 1930 under the Societies Registration Act of 1860. The AIWC created a journal, **Roshni**, in 1941, which was published in both English and Hindi.

Statement 2 is correct: Amrit Kaur was the first woman in independent India who joined the Cabinet as the Health Minister and remained in that position for 10 years. Born into the Kapurthala royal family, she was educated in Oxford and returned to India in 1918 and began to be drawn towards the work and teachings of M.K. Gandhi.

22. A

Jyotirao Phule founded the Satyashodhak Samaj (The Truth Seekers' Society) in 1873. The main aims of the movement were (i) social service; and (ii) spread of education among women and lower caste people. Phule's works, Sarvajanic Satyadharma and Gulamgiri, became sources of inspiration for the common masses.

Gopal Ganesh Agarkar (1856-1895) was an educationist and social reformer from Maharashtra. He was a cofounder of the **New English School, the Deccan Education Society and Fergusson College**. He was the Principal of Fergusson College.

Gopal Krishna Gokhale (1866-1915), a liberal leader of the Indian National Congress, founded the **Servants of India Society in 1905**, with the help of **M.G. Ranade**.

23. D

- The struggle between various trends within the nationalist articulation of freedom struggle was fought out and culminated in the Surat split

of December, 1907. **Rash Behari Ghosh was the President of the Surat Congress Session in 1907.**

- The Extremists wanted the 1907 Session to be held in Nagpur (Central Provinces), with Tilak or Lajpat Rai as the President.
- In the Surat Session of Congress, the two main objectives placed by the Extremists were:
 - Lala Lajpat Rai to be made the President of the INC; and
 - Demand for the resolution of Swaraj.

These two demands were not accepted by the Moderates and instead of Lala Lajpat Rai, the Moderates supported Rash Behari Ghosh as the President.
- The efforts by eminent persons, like Rabindra Nath Tagore, to bring the Extremist and the Moderates together in the aftermath of the Surat split, were in vain and further in the 1908 Allahabad Convention, the adoption of resolutions by the Moderates for permanently disqualifying the Extremist section of the Congress led to the significant decline of nationalism in India.
- Unfortunately, neither the Moderates nor the Extremists understood the purpose behind the strategy. The **Surat split suggested that the policy of carrot and stick had brought rich dividends to the British India government.**

24. A

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Statement 2 is incorrect: The United Nations Educational, Scientific and Cultural Organization (UNESCO) has picked Srinagar among 49 cities as part of the creative city network under the Crafts and Folk Arts category.

About Creative Cities Network:

- The UNESCO Creative Cities Network (UCCN) was **created in 2004** to promote cooperation with and among cities that have identified creativity as a strategic factor for sustainable urban development. Therefore **statement 1 is correct.**

- **Sixth Indian city:** Srinagar is the sixth Indian city to achieve this distinction.
 - Mumbai - Film (2019)
 - Chennai - Creative city of Music (2017)
 - Hyderabad - Gastronomy (2019)
 - Varanasi - Creative city of Music (2015)
 - Jaipur - Crafts and Folk Arts (2015)
- **UNESCO designates the creative cities in seven fields:** Crafts and Folk Art, Media Arts, Film, Design, Gastronomy, Literature and Music.

25. A

The Gandhara School – The Gandhara School of Art developed in the western frontiers of Punjab, near modern day Peshawar and Afghanistan. The Greek invaders brought with them the traditions of the Greek and Roman sculptors, which influenced the local traditions of the region. Thus, the Gandhara School also came to be known as the Greco-Indian School of Art.

Early Gandhara School used bluish-grey sandstone, while the later period saw the use of mud and stucco.

The Mathura School:

- The Mathura School flourished on the banks of river Yamuna, in the period between 1st and 3rd centuries B.C.
- The sculptures of the Mathura School were influenced by the stories and images of all 3 religions – Buddhism, Hinduism and Jainism. The images were modelled on the earlier Yaksha images found during the Mauryan period.
- The Mathura School showed a striking use of symbolism in the images. The Hindu Gods were represented using their Avayudhas (weapons) and the Halo of Buddha was larger than that of the Gandhara School.

- **The sculptures of the Mathura School were made using spotted red sandstone.**

The Mathura and the Gandhara arts were patronized by the Kushana rulers.

26. A

Septemeranthus is a new genus of a **parasitic flowering plant** that has recently been discovered from the **Nicobar group of islands**. The parasitic flowering plants have a modified root structure spread on the stem of the tree and are anchored inside the bark of the host tree.



For instance, the newly discovered plant that derives nutrients from its hosts has green leaves capable of photosynthesis. They need a host tree or shrub in order to thrive and exhibit a worldwide distribution in tropical as well as temperate habitats that evolved approximately five times in the order and are important in forest ecology, pathology and medicine.

27. C

- **Hakki-Pikki Tribes** are scheduled tribes in **Karnataka**. They are a semi-nomadic tribe who have travelled and lived in various parts of the country. They were in the news because they had been severely impacted by the Covid-19.
- **Hazaras:** Hazara is an **ethnic group from Afghanistan**. They are believed to be descendants of the founder of the Mongol empire.

- **Apatani Tribes** of **Arunachal Pradesh**, also known as Apa and ApaTani, are known for **their fish and paddy culture**, along with cane and bamboo crafts. UNESCO has proposed the Apatani valley for inclusion as a World Heritage Site for its “extremely high productivity” and “unique” way of preserving the ecology.

28. D

Recently, the Assam government notified **Raimona reserve forest as the 6th National Park of the state**. Located within the **Bodoland Territorial Region**. It is famous for **Golden Langur**, an endemic species which has been named as the mascot of Bodoland region. It covers the northern part of notified Ripu Reserve Forest which is the westernmost buffer to Manas Tiger Reserve. Park is home to golden langur, tigers, Asian elephants, clouded leopards, wild buffalo, Indian gaur, hornbill, spotted deer, 170 species of birds, 150 species of butterflies and 380 varieties of plants & orchids.

29. B

The Glasgow Climate Pact (GCP) was adopted by 196 parties at the Glasgow climate change conference (COP26). The pact is being termed as a mixed bag, with some tangible achievements and multiple unfulfilled expectations.

Five Nectar Elements (Panchamrit):

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India has presented the following five nectar elements (Panchamrit) of India's climate action:

- 1) Reach **500 GW Non-fossil energy capacity** by 2030. Hence **statement 3 is incorrect**.
- 2) **50 per cent of its energy requirements** from renewable energy by 2030. **Hence statement 2 is correct**.
- 3) **Reduction of total projected carbon emissions** by one billion tonnes from now to 2030.
- 4) **Reduction of the carbon intensity** of the economy by 45 per cent by 2030, over 2005 levels.

5) Achieving the **target of net zero emissions** by 2070. **Hence statement 1 is incorrect.**

30. A

- IPBES is an independent intergovernmental body, established by member **States in 2012 under the auspices of UNEP. Statement 1 is correct.**
- The IPBES secretariat is based in **Bonn, Germany. Thus statement 3 is incorrect.**
- It is a global scientific body, similar in composition and functioning to the Intergovernmental Panel on Climate Change (IPCC).
- IPCC's assessment reports form the scientific basis on which the international negotiations on climate change have been happening.
- IPBES is often described as the **"IPCC for biodiversity"**, as it is mandated to do a similar job for natural ecosystems and biodiversity.
- The objective is to strengthen the science-policy interface for biodiversity and ecosystem services. **Hence statement 2 is correct.**

31. C

Recently, the **Kunming Declaration** was adopted by over 100 countries at the **15th Conference of the Parties** to the **United Nations Convention on Biological Diversity** in China.

The **theme** of the declaration is **Ecological Civilization: Building a Shared Future for All Life on Earth.**

The Kunming Declaration signed by all countries **calls for "urgent and integrated action" to reflect biodiversity considerations in all sectors of the global economy.** It provides public, private and non-governmental organisations with the knowledge and tools that enable human progress, economic development and nature conservation to take place together. **India is a member of the convention.**

32. D

Project Dolphin will give a new impetus to the conservation and protection of dolphins **found in both riverine and marine ecosystems**. It envisages to address conservation concerns and empower the stakeholders like the river-dependent population in reducing river pollution and allowing sustainable fishery and river-based other livelihood options through scientifically oriented conservation methods.

The project will be implemented by MOEF&CC (Ministry of environment forest and climate change). The Gangetic dolphins are categorised as **Endangered as per the IUCN Red list**.

Vikramshila Ganges Dolphin Sanctuary was established in Bihar for their protection and conservation. **Thus statement (d) is incorrect.**

33. C

Statement 1 is incorrect. There is no such provision like 'Places Mitra' in the scheme. A different scheme '**Adopt Heritage**' which had provisions like '**Monument Mitras**' under which public sector companies, private sector companies etc. would primarily focus on providing basic amenities that include cleanliness, public convenience, drinking water etc.

Statement 2 is incorrect. It focuses on cleaning 100 places across India that are "iconic" due to their heritage, religious and/or cultural significance.

Statement 3 is correct. The Ministry of Jal Shakti has introduced the best Swachh iconic places (SIP) award.

34. A

Clydebank Declaration is for **Green shipping corridors**, signed at **COP 26 Climate Summit**. A coalition of 22 countries have agreed to create zero emissions shipping trade routes between ports to speed up the decarbonisation of the global maritime industry and agreed to support the

establishment of at least 6 green corridors by 2025. India has not signed the declaration yet. **Clydebank is a city in Scotland.**

35. B

Village Storage Scheme was proposed in the 2020 Budget, which will be run by Self Help Groups and will provide holding capacity for farmers. The women in villages will regain their status as '**Dhaanya Lakshmi**'.

Statement 1 is incorrect. The storage houses will be run by the SHG (Self Help Group).

Statement 2 is correct. Importance under the scheme will be given to the Women SHGs.

Statement 3 is correct. Financial assistance under MUDRA loans and NABARD shall be provided for this purpose. This will help farmers to increase their holding capacities.

36. B

Statement a is correct. **EPCA** was constituted with the objective of 'protecting and improving' the quality of the environment and '**controlling environmental pollution**' in the **National Capital Region**. The EPCA also assists the apex court in various environment-related matters in the region.

Statement b is incorrect. It has suo-motu powers and also takes actions on the basis of complaints made by an individual or body.

Statement c is correct. It can issue directions in writing to any person, officer or authority. It has the power to stop the supply of electricity or water to the polluting industries.

Statement d is correct. EPCA is a Supreme Court mandated body tasked with taking various measures to tackle air pollution in the National Capital Region. It was notified in 1998 by the Environment Ministry under the Environment Protection Act, 1986.

37. A

Bio piles, also known as **biocells, bioheaps, biomounds, and compost piles**, are used to **reduce concentrations of petroleum constituents** in excavated soils through biodegradation. **So, option a is correct.**

This technology involves heaping contaminated soils into piles (or "cells") and stimulating aerobic microbial activity within the soils through the aeration and addition of minerals, nutrients, and moisture. The enhanced microbial activity results in the degradation of adsorbed petroleum-product constituents through microbial respiration.

Bio piles are similar to landforms. They are both above-ground, engineered systems that use oxygen, generally from the air, to stimulate the growth and reproduction of aerobic bacteria, which, in turn, degrade the petroleum constituents adsorbed to the soil.

38. B

Permaculture is an approach to **land management and settlement design** that adopts arrangements observed in flourishing **natural ecosystems**. It includes a set of design principles derived using whole-systems thinking.

Permaculture is a **climate-smart farming movement** that would play a leading role in reducing the rapidly growing use of destructive, industrial-agricultural methods.

Core values or tenets

- **Care for planet** - recognising that the Earth is the source of all life (and is possibly itself a living entity) and respecting her accordingly.
- **Care for people** - involves supporting and helping each other to change to ways of living that are not harming ourselves or the planet, and realizing that we are a part of the Earth, not apart from it.

- **Fair share** (Involves returning the surplus to the system) - places limits on consumption by ensuring that the Earth's limited resources are utilized in ways that are equitable and wise.

Statement 1 is incorrect: Perma-culture may not be suitable and sustainable for mass production. It is time-intensive since it requires plenty of work to be done and the use of fewer machines. This may make it less attractive to the farmers.

Benefits of permaculture:

- Offering solutions for soil fertility, water conservation, climate change mitigation, and animal habitat, it helps in maximizing biodiversity and preserving wildlife by creating more habitat for animal species.
- Permaculture involves the growing of **diverse mixtures of perennial and annual plants** that provide food for one another. This helps in removing the need for pesticides, herbicides, and chemical fertilizers resulting in **increased soil health**.
- Other benefits include better health outcomes, **prevention of water shortage**, pollution mitigation, **reduction of risks to farmers due to the absence of reliance on monoculture** etc.

39. C

Both the statements are correct.

Drip irrigation:

- In this system water is delivered near the plant root, on or below the soil surface through a dripper. The rate of water is quite low.
- It is one of the most efficient irrigation systems in terms of the water use efficiency.
- **Minimum loss of fertilizer** and nutrients. The system minimizes the leaching of the fertilizers. The non-potable water can be used in this system.

Fertigation: combines water and fertilisers through irrigation. It results in balanced nutrient application and reduces the usage of fertiliser requirements significantly.

40. B

Contract farming involves agricultural production being carried out on the basis of an agreement between the buyer and farm producers. Sometimes it involves the buyer specifying the quality required and the price, with the farmer agreeing to deliver at a future date.

Statement 1 is incorrect: The company provides the technical aid and inputs to the farmer in contract.

Statement 2 is incorrect: The land is owned by the farmer in contract farming without any change in its ownership as per The Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Act, 2020

Statement 3 is correct: In contract farming, the farmers enter into a contract with the companies to grow certain crops, which the companies then buy from them at a certain predetermined price.

41. B

Statement 1 is incorrect: **Blue Hydrogen** refers to hydrogen produced using **fossil fuels — usually natural gas** — with the associated emissions captured and stored.

Statement 2 is correct: One of the main advantages of Green hydrogen is that it is **Sustainable**. Green hydrogen does not emit polluting gases either during combustion or during production.

Statement 3 is correct: One of the major initiatives for the clean energy sector that the government announced in the Union Budget 2021-22, was the plan to launch a **National Hydrogen Energy Mission**.

Hydrogen Color Spectrum



Type of hydrogen	Technology	Market
Black/brown hydrogen	Coal is used for the production of hydrogen via the gasification route	23% of the global annual hydrogen supply is produced using coal gasification. It has the highest emission footprint: 15–26 kg of CO2/kg of H2
Grey hydrogen	Hydrogen is produced from natural gas via the steam methane reforming (SMR) process	Most popular method: 76% of the global hydrogen demand is met using this process. Emission footprint: 9.3–15 kg of CO2/kg of H2
Blue hydrogen	Hydrogen is produced from fossil fuels (natural gas and coal) and the carbon emissions are captured during the carbon capture and sequestration (CCS) process	The CCS process captures 80%–90% of the carbon emissions and the rest is released into the atmosphere. Emission footprint: 10.7 kg CO2/kg of H2
Green hydrogen	Electrolytic production of hydrogen using renewable power Hydrogen produced from biomass using carbon capture and storage is also called green hydrogen	It contributes 1% to the total hydrogen demand (though not all is green). It has net-zero emissions. It is the most expensive process of hydrogen production

42. D

All the options are correct.

All these turtles have major/minor nesting sites in the Indian mainland or in Andaman & Nicobar Island.

Five Species of Sea Turtles are found in India:

- Leatherback.
- Loggerhead.
- Hawksbill.
- Green Sea.
- Olive Ridley.

43. C

Statement 1 is incorrect: UN-REDD is a collaborative programme of the FAO, UNDP and UNEP.

REDD+ is a mechanism developed by Parties to the United Nations Framework Convention on Climate Change (UNFCCC).

- The Warsaw **Framework on REDD-plus was adopted at the CoP 19 at Warsaw** in 2013. Thus **statement 3 is correct.**
- The aim of REDD+ is to encourage developing countries to contribute to climate change mitigation efforts by:
 - reducing greenhouse gas emissions (GHG) by slowing, halting and reversing forest loss and degradation; and
 - increasing removal of GHGs from the earth's atmosphere through the conservation, management and expansion of forests.
- It aims to incentivize developing countries to reduce emissions from deforestation and forest degradation, conserve forest carbon stocks, sustainably manage forests and enhance forest carbon stocks. **Thus statement 2 is correct.**

44. B

Important features of seagrass:

- **Seagrasses are neither grasses nor seaweeds.** Seagrasses are so-named because most species have long green, grass-like leaves. They are often **confused with seaweeds (algae)**, but are actually **more closely related to the flowering plants that we see on land. Thus statement 1 is incorrect.**
- Seagrass ecosystems play an important role in **sequestering carbon, nurture fish communities and support marine mammals such as sea cows or dugongs. Thus statement 3 is correct.**
- **Usage:**
 - **Traditional medicine:** used for a variety of therapeutic purposes such as wound-healing, fever, stomach aches, muscle pains and skin diseases.
 - **Biomedical applications** such as anti-cancer, anti-diabetic, anti-inflammatory, anti-fungal, anti-bacterial and anti-viral activities.
- **Habitat:**
 - Found in **shallow, salty and brackish** waters in many parts of the world, from the tropics to the Arctic Circle, except **Antarctica. Thus statement 2 is correct.**
 - Seagrasses inhabit all types of substrata/layers from mud to rock, but lush green seagrass beds are found extensively in muddy and sandy substratas.
 - Occur all along the coastal areas of India. Seagrass used to be very abundant in the **Palk Strait** and the **Gulf of Mannar**, but now it is **endangered**. Seagrasses abound in the waters around the islands of Kurusadi, Pullivasal in the Gulf of Mannar.

45. B

Keeling Curve is a graph of the accumulation of **carbon dioxide in the Earth's atmosphere** based on continuous measurements taken at the

Mauna Loa Observatory on the island of Hawaii from 1958 to the present day. As per Keeling curve, the amount of carbon in **Earth's atmosphere in May 2021 reached its highest level in modern history.**

46. B

Article 356 of the Constitution of India gives the President of India power to suspend state government and impose President's rule of any state in the country **"if he is satisfied that a situation has arisen in which the government of the state cannot be carried on in accordance with the provisions of the Constitution"**.

- It is also known as **'State Emergency' or 'Constitutional Emergency'**.
- Upon the imposition of this rule, **there would be no Council of Ministers.**
- The state will fall under **the direct control of the Union government, and the Governor will continue to head the proceedings, representing the President of India.**
- President's Rule is imposed if the President, upon receipt of the **report from the Governor of the State or otherwise**, is **satisfied** that a situation has arisen in which the government of the State cannot be carried on in accordance with the provisions of the Constitution.
- The satisfaction of the President must be based on relevant material.
- The presidential proclamation imposing President's Rule is **subject to judicial review.**
- The action of the president can be struck down by the court if it is based on irrelevant or extraneous grounds or if it was found to be malafide or perverse.
- Judicial Review is one of the 'basic features' of the Constitution

47. D

- The 22nd national conference on e-governance adopted the 'Shillong Declaration' in 2019
- The declaration has outlined the future trajectory that would be taken in terms of e-governance with a focus on improving connectivity in the Northeast.
- The Shillong Declaration was adopted so that the important ideas that emerged during the sessions of the conference may be referred to and developed in the future.

48. B

- The writ of **mandamus** is a command issued by the court to a public official asking him to perform his official duties that he has failed or refused to perform. It can also be **issued against any public body**, a corporation, an inferior court, a tribunal or government for the same purpose.
- The writ of **prohibition** can be issued **only against judicial and quasi-judicial authorities**. It is **not available against administrative authorities**, legislative bodies, and private individuals or bodies.
- Previously, the writ of **certiorari** could be issued only against judicial and quasi-judicial authorities and not against administrative authorities. However, in 1991, the Supreme Court ruled that the certiorari can be **issued even against administrative authorities affecting rights of individuals**.
- Like prohibition, certiorari is also not available against legislative bodies and private individuals or bodies.

49. B

- When any of the privileges, either of the Members individually or of the House in its collective capacity, is disregarded or attacked by any individual or authority, the offence is called a '**Breach of Privilege**'.

- **Contempt of the House** may be defined generally as **any act or omission which obstructs or impedes either House of Parliament in the performance of its functions**, or which obstructs or impedes any Member or officers of such House in the discharge of his or her duty, or which has a tendency, directly or indirectly, to produce such results even though there is no precedent of the offence. **Hence statement 1 is incorrect.**
- **Whereas all breaches of privilege are contempt of the House**, a person may be guilty of a contempt of the House even though he does not violate any of the privilege of the House, e.g. when he disobeys an order to attend a Committee or publishes reflections on the character or conduct of a Member in his capacity as a Member. **Thus statement 2 is correct.**

50. D

The **National Institution for Transforming India**, also called NITI Aayog, was formed via a resolution of the Union Cabinet on January 1, 2015. NITI Aayog is the premier **policy 'Think Tank'** of the Government of India, providing both directional and policy inputs. While designing strategic and long-term policies and programmes for the Government of India, NITI Aayog also provides relevant technical advice to the Centre and States.

Functions of NITI Aayog:

- 1) To evolve a shared vision of national development priorities sectors and strategies with the active involvement of States in the light of national objectives
- 2) **To foster cooperative federalism through structured support initiatives** and mechanisms with the States on a continuous basis, recognizing that strong States make a strong nation.
- 3) To develop mechanisms to formulate credible plans at the village level and aggregate these progressively at higher levels of government

- 4) To ensure, on areas that are specifically referred to it, that the interests of national security are incorporated in economic strategy and policy
- 5) **To pay special attention to the sections of our society** that may be at risk of not benefiting adequately from economic progress.
- 6) To design strategic and long-term policy and programme frameworks and initiatives, and monitor their progress and their efficacy.
- 7) The lessons learnt through monitoring and feedback will be used for making innovative improvements, including necessary mid-course corrections
- 8) To provide advice and encourage partnerships between key stakeholders and national and international like-minded Think tanks, as well as educational and policy research institutions.
- 9) To create a knowledge, innovation and entrepreneurial support system through a collaborative community of national and international experts, practitioners and other partners.
- 10) To offer a platform for resolution of inter-sectoral and inter-departmental issues in order to accelerate the implementation of the development agenda.
- 11) To maintain a state-of-the-art Resource Centre, be a repository of research on good governance and best practices in sustainable and equitable development as well as help their dissemination to stakeholders
- 12) To actively monitor and evaluate the implementation of programmes and initiatives, including the identification of the needed resources so as to strengthen the probability of success and scope of delivery
- 13) **To focus on technology upgradation and capacity building for implementation of programmes and initiatives.**
- 14) To undertake other activities as may be necessary in order to further the execution of the national development agenda, and the objectives mentioned above

51. D

All the above three are mentioned in the constitution.

- As per **Article 352**, the president shall impose emergency only on the written recommendations of **Cabinet**.
- **Article 324** mentions other **Election Commissioners**.
- **Articles 102(1)(a) and 191(1)(a)** talks about **Office of profit**.

52. D

The Delimitation Commission consist of three members:

- **Chairperson (a judge of the Supreme Court)** to be appointed by the Central Government. **Statement 1 is incorrect.**
- The **Chief Election Commissioner or an Election Commissioner** nominated by the Chief Election Commissioner as ex officio member.
- The **State Election Commissioner of concerned State**, also as ex officio member.

The Delimitation Commission in India is a high power body whose orders have the force of law and **cannot be called in question before any court.** Thus **statement 2 is incorrect.**

53. A

Article 110 of the Constitution deals with the definition of **money bills**.

- Every such bill is considered to be a government bill and **can be introduced only by a minister.** **Statement 1 is correct.**
- The **Rajya Sabha** has restricted powers with regard to a money bill. **It cannot reject or amend a money bill.** **Statement 2 is correct.**
- When a money bill is presented to the **president, he may either give his assent** to the bill **or withhold his assent** to the bill **but cannot return the bill** for reconsideration of the Houses. **Statement 3 is incorrect.**

54. C

The **Constitution of India** contains the following provisions with regard to the enactment of budget:

- The President shall in respect of every financial year cause to be laid before both the Houses of Parliament a statement of estimated receipts and expenditure of the Government of India for that year.
- No demand for a grant shall be made except on the recommendation of the President.
- No money shall be withdrawn from the Consolidated Fund of India except under appropriation made by law.
- **No money bill imposing tax shall be introduced in the Parliament except on the recommendation of the President, and such a bill shall not be introduced in the Rajya Sabha.**
- No tax shall be levied or collected except by authority of law.
- **Parliament can reduce or abolish a tax but cannot increase it.**

The Constitution has also defined the relative roles or position of both the Houses of Parliament with regard to the enactment of the budget in the following way:

- **A money bill or finance bill dealing with taxation cannot be introduced in the Rajya Sabha**—it must be introduced only in the Lok Sabha
- The **Rajya Sabha has no power to vote on the demand for grants**; it is the exclusive privilege of the Lok Sabha.
- The Rajya Sabha should return the Money bill (or Finance bill) to the Lok Sabha within fourteen days
- The Lok Sabha can either accept or reject the recommendations made by Rajya Sabha in this regard.

55. C

The office of 'whip' is mentioned **neither in the Constitution of India nor in the Rules of the House nor in a Parliamentary Statute**. It is **based on the conventions** of the parliamentary government. India **inherited the concept of the whip from the British parliamentary system**. Thus **statements 1 and 2 are incorrect**.

There are some cases such as **Presidential elections** where whips cannot direct a Member of Parliament (MP) or Member of Legislative Assembly (MLA) to vote in a particular fashion. **Hence statement 3 is correct**.

56. B

In a democracy, political expression of social divisions is very normal and can be healthy. **Expression of various kinds of social divisions in politics often results in their cancelling one another out and thus reducing intensity**. This leads to the strengthening of a democracy.

If the people see that their identities are multiple and are complementary with the national identity. This is how most people in our country see their identity: they think of themselves as Indian as well as belonging to a state or a language group or a social or religious community.

Social divisions of one kind or another exist in most countries. It does not matter whether the country is small or big. Thus statement 3 is incorrect.

57. A

Communalism was and continues to be one of the major challenges to democracy in our country. The makers of our Constitution were aware of this challenge. That is why they chose the model of a **secular state**. This choice was reflected in several constitutional provisions:

There is no official religion for the Indian state. Unlike the status of Buddhism in Sri Lanka, that of Islam in Pakistan and that of Christianity in England, our Constitution does not give a special status to any religion.

The Constitution provides to all individuals and communities **freedom to profess, practice and propagate any religion, or not to follow any.** The Constitution prohibits discrimination on grounds of religion.

At the same time the **Constitution allows the state to intervene in the matters of religion in order to ensure equality within religious communities.** For example, it bans untouchability. **Hence Statement 4 is incorrect.**

58. D

A constitution does many things:

- i) First, it generates a degree of trust and coordination that is necessary for different kind of people to live together;
- ii) Second, it specifies how the government will be constituted, who will have power to take which decisions;
- iii) Third, it lays down limits on the powers of the government and tells us what the rights of the citizens are; and
- iv) Fourth, it expresses the aspirations of the people about creating a good society.

59. C

The Constitution authorises the Parliament to form new states or alter the areas, boundaries or names of the existing states without their consent. In other words, the **Parliament can redraw the political map of India according to its will.**

Notably, the **‘Territory of India’ is a wider expression than the ‘Union of India’** because the **latter includes only states while the former includes**

not only the states but also union territories and territories that may be acquired by the Government of India at any future time. **Thus statement 2 is incorrect.**

The states are the members of the federal system and share a distribution of powers with the Centre. The union territories and the acquired territories, on the other hand, are directly administered by the Central government.

60. D

Article 3 lays down two conditions in this regard:

- 1) A bill contemplating the above changes can be introduced in the Parliament only with the prior recommendation of the President; and
- 2) Before recommending the bill, the President has to refer the same to the state legislature concerned for expressing its views within a specified period.

Further, the power of Parliament to form new states includes the power to form a new state or union territory by uniting a part of any state or union territory to any other state or union territory.

The President (or Parliament) is not bound by the views of the state legislature and may either accept or reject them, even if the views are received in time. This was seen in the creation of Telangana state.

Further, it is not necessary to make a fresh reference to the state legislature every time an amendment to the bill is moved and accepted in Parliament.

Hence, option (d) is the correct answer.

61. B

Under the Government of India (Allocation of Business) Rules 1961, **Ministry of Home Affairs** is the nodal ministry for all matters of Union Territories relating to legislation, finance and budget, services and appointment of Lt. Governors and Administrators.

62. D

Loss of citizenship by **deprivation means termination of citizenship by the central government** if the citizen has obtained the citizenship by fraud, shown disloyalty to the constitution, communicated with the enemy during war, has been staying out of India for seven years continuously or within 5 years of registration or naturalisation been imprisoned in any country for two years.

63. A

In addition to original and appellate jurisdiction, the Supreme Court of India possesses **advisory jurisdiction** also. This means that the President of India can refer any matter that is of public importance or that involves interpretation of the Constitution to the Supreme Court for advice. However, the **Supreme Court is not bound to give advice on such matters and the President is not bound to accept such advice.**

64. D

Privileges are special rights, immunities and exemptions enjoyed by the two houses of the Parliament/ state legislatures, their committees and their members.

Two broad categories:

1. **Collective privileges** are enjoyed by each house collectively. E.g. right to publish reports etc, exclude strangers from house proceedings, punish members/ outsiders for breach of privileges etc.
2. **Individual privileges** are enjoyed by the members individually. E.g. freedom of speech in the house, exemption from jury service when house is in session, exemption from arrest during the session and 40 days before and after the session.

Committee on Privileges: This is a **standing committee** constituted in each house of the Parliament/state legislature. This Committee consists of

15 members in Lok Sabha (LS) and 10 members in Rajya Sabha (RS) to be nominated by the Speaker in LS and Chairman in RS.

65. B

Collective Responsibility

- The Council of Ministers is collectively responsible to the Lok Sabha.
- This provision means that a Ministry which loses confidence of the Lok Sabha is obliged to resign.
- The principle indicates that the ministry is an executive committee of the Parliament and it collectively governs on behalf of the Parliament.
- Based on the principle of the **solidarity of the cabinet**. It implies that a **vote of no confidence even against a single minister leads to the resignation of the entire Council of Ministers. Thus statement 2 is incorrect.**
- It also indicates that if a minister does not agree with a policy or decision of the cabinet, he or she must either accept the decision or resign. It is **binding on all ministers to pursue or agree to a policy** for which there is collective responsibility.

66. C

- **NASA and ISRO are collaborating** on developing a satellite called NISAR, which will detect movements of the planet's surface as small as 0.4 inches over areas about half the size of a tennis court. **Hence statement 1 is incorrect.**
- The satellite will be **launched in 2022** from the Satish Dhawan Space Center in Sriharikota, India, into a near-polar orbit and will scan the globe every 12 days over the course of its three-year mission of imaging the Earth's land, ice sheets and sea ice to give an "unprecedented" view of the planet.
- The name NISAR is short for **NASA-ISRO-SAR (synthetic aperture radar)** that NASA will use to measure changes in the surface of the Earth.

- Essentially, SAR refers to a technique for producing high resolution images. Because of the precision, the radar can penetrate clouds and darkness, which means that it can **collect data day and night in any weather.**
- During the course of three years, the images will allow scientists to **track changes in croplands, hazard sites** and will help them to **monitor crises such as volcanic eruptions.**
- The images will be detailed enough to show local changes and broad enough to measure regional trends.
Thus statements 2 and 3 are correct.

67. C

NASA's **Mars Helicopter, Ingenuity**, is a technology demonstration to test powered, controlled flight on another world for the first time. It hitched a ride to **Mars** on the Perseverance rover. It was a major milestone: the very first powered, controlled flight in the extremely thin atmosphere of Mars, and, in fact, the first such flight in any world beyond Earth.

68. B

- **Remdesivir** is a nucleotide prodrug of an adenosine analog. It binds to the viral RNA-dependent RNA polymerase and **inhibits viral replication by terminating RNA transcription prematurely.**
- **Remdesivir** is an injectable antiviral that aims to **prevent replication of the virus. Thus statement 1 is incorrect.**
- It was manufactured in 2014 to treat Ebola, and has since been used to treat SARS and MERS.
- In 2020, it was repurposed for Covid treatment.
- Clinical experience has shown it works best in mildly ill patients, and in early stages of hospitalisation; late use has little effect.

69. B

Scientists from China recently discovered a space hurricane for the first time ever above the North pole. **A space hurricane** – complete with electron “rain” – has been detected in the Earth’s upper atmosphere for the first time.

- Researchers have identified **a high-latitude phenomenon** that looks remarkably like a tropospheric hurricane, **with spinning arms of plasma and a shower of electrons**
- Previously, it was believed, space hurricanes were a theoretical phenomenon.
- **Space Hurricanes** are thought to be a result of the **solar wind and Earth's magnetic field interacting**
- It is a **huge, funnel-like, spiral geomagnetic storm** that occurs above the polar Ionosphere of Earth, during extremely quiet conditions
- They are **related to the aurora borealis phenomenon**, as the electron precipitation from the storm's funnel produces gigantic, **cyclone-shaped auroras. Hence statement 2 is incorrect.**
- They are made up of plasmas, consisting of extremely hot ionized gases that rotate at extremely high speeds.

Impact: The researchers think these kinds of storms could create more drag on satellites and interfere with radio signals and communications, making these events particularly important to understand.

70. D

All the statements are correct.

The benefits that blockchain offers is actually simplifying the way we work.

- **Speeding up transactions:** Blockchain provides all parties involved within a business network with a secure and synchronised record of transactions.

- Blockchain's verification system can enable real-time information processing, verifying and maintaining all the way through to the settlement of transactions.
- Cutting cost and complexity: Implementing blockchain technology can allow you to leverage the power of your business' ecosystem to do things faster and vastly reduce the cost and complexity of cross-enterprise business processes.
- By removing the intermediary, settling transactions becomes quicker and simpler.
- **Increasing resilience:**
 - Due to the distributed and shared nature of the blockchain there is no single point of failure.
 - This makes it significantly more resilient than current systems.

71. A

SWASTIIK (Safe Water and Sustainable Technology Initiative from Indian Knowledgebase)

- With water-borne diseases majorly contributing to India's disease burden, the **CSIR-National Chemical Laboratory (CSIR-NCL) at Pune** has come up with this new technique for **disinfecting water by using natural oils. Hence statement 4 is incorrect.**
- Disinfection of water is essential for removing pathogenic microorganisms that are responsible for causing a number of water-borne diseases.
- However, the common drawbacks of chemical methods of disinfection, such as **chlorination, include the formation of harmful or carcinogenic by-products.**
- **"SWASTIIK"**, which involves boiling of a liquid as a result of pressure reduction (cavitation) and also uses natural oils having antimicrobial properties.
- This technology can eliminate harmful bacteria, including antibiotic-resistant strains, economically.

- The technique used—**hydrodynamic cavitation**—combines chemistry, biology, and chemical engineering, along with natural resources in the form of natural oils and plant extracts.

72. C

Emerging infectious diseases (EID) are infections that have recently appeared within a population or those whose incidence or geographic range is rapidly increasing or threatens to increase in the near future.

The World Health Organization warned in its 2007 report that infectious diseases are emerging at a rate that has not been seen before. **Since the 1970s, about 40 infectious diseases have been discovered**, including SARS, MERS, Ebola, Chikungunya, avian flu, swine flu, Zika and **most recently COVID-19**, caused by a new coronavirus, SARS-CoV-2.

- Historically, the first disease which resulted due to deforestation and increasing contact between humans and the jungle environment was smallpox. It originated in tropical Asia early in the history of animal husbandry and large-scale forest clearing for permanent cropland and human settlements.
- Even today, mixing of humans, domestic animals and forest animals/plants has led to development of several Emerging Infectious Diseases (EIDs). This is because – ecologically, the infectious diseases are an extension of host–parasite relationships. They are integral to an ecosystem as much as a predator–prey or plant–herbivore relationships.
- With people **traveling much more frequently and far greater distances** than in the past, living in more densely populated areas, and **coming into closer contact with wild animals**, the potential for emerging infectious diseases to spread rapidly and cause global epidemics is a major concern. This is evidence that deforestation is responsible for deadly outbreaks of diseases.

Other factors include:

- **Climate change** is increasingly becoming a concern as a factor in the emergence of infectious diseases. As Earth's climate warms and habitats are altered, diseases can spread into new geographic areas. For example, warming temperatures allow mosquitoes - and the diseases they transmit - to expand their range into regions where they previously have not been found.
- A factor that is especially important in the **re-emergence of diseases** is **antimicrobial resistance** - the acquired resistance of pathogens to antimicrobial medications such as antibiotics. Therefore, drugs that were effective in the past are no longer useful in controlling disease.
- Another factor that can cause a disease to **re-emerge is a decline in vaccine coverage**, so that even when a safe and effective vaccine exists, a growing number of people choose not to become vaccinated. This has been a particular problem with the measles vaccine.

73. D

All belong to the grass family.

Some common crops within the true grass family (poaceae) are Maize (corn), Wheat , Rice, Barley , Sugarcane, Bamboo, most millets, sorghum, barley, oat etc

Have fun. Achieve dreams.

74. A

- The Ayurvedic Drug **Ayush-64** is very effective for the treatment of **Malaria** which is one of the most prevalent.
- **Artemisinin** and its derivatives are powerful medicines known for their ability to **swiftly reduce the number of Plasmodium parasites** in the blood of patients with **malaria**.

Thus statements 1 and 2 are correct.

- **Bedaquiline** is an exciting new drug for the treatment of **drug resistant TB**.
- **Ayush-82** is used for the treatment of **Diabetes**.

75. D

Panthera is a genus of large, wild cats in the **mammalian family, Felidae**, and includes the four, well-known living species of the **lion (*Panthera leo*)**, **the tiger (*Panthera tigris*)**, **the jaguar (*Panthera onca*)**, and **the leopard (*Panthera pardus*)**. These four extant cat species are considered unique in having the anatomical changes enabling them to roar. Tiger, lion and leopard have several common features and are thus included in the same genus Panthera.

Domestic Cat (*Felis catus*) comes under the genus **Felis** and is a member of the **Felidae family** of the Carnivora order of mammals.

76. C

Externalities occur when producing or consuming a good cause an impact on third parties not directly related to the transaction. Externalities can either be positive or negative.

Positive Externality:

- A farmer grows apple trees. An external benefit is that
 - He provides nectar for a nearby beekeeper who gains increased honey as a result of the farmers' orchard.
 - External benefit to the apple grower because his bees help to fertilise the apple tree.

Negative Externality:

- Making furniture by cutting down rainforests in the Amazon leads to negative externalities to other people.
 - It harms the indigenous people of the Amazon rainforest.

- It also leads to higher global warming as there are fewer trees to absorb carbon dioxide.

77. D

Stagflation is a condition of **slow economic growth and relatively high unemployment**, or economic stagnation, accompanied by rising prices, or **inflation**. **Statement 1 is incorrect.**

Deflation is the **general decline in prices** for goods and services occurring when the **inflation rate falls below 0%**. **Statement 2 is incorrect.**

Disinflation is a **temporary slowing of the pace of price inflation** and is used to describe instances when the inflation rate has reduced marginally over the short term. Unlike inflation and deflation, which refer to the direction of prices, disinflation refers to the rate of change in the rate of inflation.

78. C

- **High and erratic inflation deters investors** from making investment decisions because real returns on investments are uncertain.
- Savings forms the base of the money that is borrowed for infrastructure building in the economy.
- **Low savings and high demand of capital lead to high borrowing costs** and deter investors.
- Low borrowing costs facilitate investments. **Thus statement 3 is incorrect.**

79. A

Aggregate demand is the total demand for final goods and services in an economy at a given time.

- Investment creates infrastructure, generates demand for raw material, labor, provides employment and adds to the productive capacity of the

economy. It is one of the most potent factors in increasing Aggregate demand (AD).

- The government has some ability to impact AD. It can give fiscal stimulus or increase taxes in order to influence how consumers spend or save.
- An expansionary fiscal policy (higher spending, lower taxes) causes AD to increase, while a contractionary monetary policy (e.g. high bank rates) causes AD to decrease.

80. C

Gross domestic product (GDP) is the total monetary or market value of all the finished goods and services produced within a country's borders in a specific time period.

- As a broad measure of overall domestic production, it functions as a comprehensive scorecard of a given country's economic health.
- GDP provides an economic snapshot of a country, used to estimate the size of an economy and growth rate.
- GDP can be calculated in three ways, using expenditures, production, or incomes. It can be adjusted for inflation and population to provide deeper insights.
- It includes the replacement investment of the depreciation of capital stock.

81. C

The external debt of India is the total debt the country owes to foreign creditors.

- The debtors can be the Union government, state governments, corporations or citizens of India.
- The debt includes money owed to private commercial banks, foreign governments, or international financial institutions such as the International Monetary Fund (IMF) and World Bank.

- Long-term borrowings (more than a year to maturity) dominate India's external debt.
- India's external debt is held in multiple currencies, the largest of which is the United States dollar.
- The rest of the debt is held in Indian rupees, special drawing rights, Japanese yen, Euros and other currencies.

82. C

- Currency is not considered as fixed capital, it is liquid capital.
- Fixed capital are the assets used in the productive process.
- Examples include Building or expanding existing factories, Purchase of transport equipment and all other machinery used in the productive process.
- Increasing an economy's capital stock also increases its capacity for production, which means an economy can produce more.

83. B

- **Systemically Important Financial Institutions (SIFIs)** as institutions “whose distress or disorderly failure, because of their size, complexity and systemic interconnectedness, would cause significant disruption to the wider financial system and economic activity”.
- At the global level, based on the suggestion of **G-20 Leaders in the Pittsburgh summit** in 2009, the efforts of formulating a framework for assessing and regulating SIFIs were taken. **Thus statement 1 is incorrect.**
- Systemically Important Financial Institutions (SIFIs) are perceived as institutions that are **Too Big to Fail (TBTF)**. **Statement 2 is correct.**

84. B

Total factor productivity (TFP) refers to the productivity of all inputs taken together. TFP is a measure of the output of an industry or economy relative to the size of all of its primary factor inputs.

A nation has the same stock of land, labour and capital, and yet it achieves high rates of GDP growth consistently. If **inputs are the same, how does output increase over time?**

- Either the individual productivity of factors would have increased, or the total combined productivity of the economy has increased.
- This can happen either by better technology, better infrastructure etc that improve the total factor productivity of the economy.
 - Suppose, now a factory requires 10 hours to produce a good.
 - With better techniques of production, the same can be achieved in 2 hours.
- **Technology growth and efficiency** are regarded as two of the biggest sub-sections of Total Factor Productivity.
- Increasing taxation on the private sector doesn't impact the total factor productivity. **Thus statement 2 is incorrect.**

85. D

- **Free trade** is a trade policy that does not restrict imports or exports. It can also be understood as the **free market idea** applied to international trade.
- Since it allows specialization of production, **statement a) is correct.**
- **Statement b) is a natural consequence** of more producers of the same product or service.
- Since exporters can tap domestic as well as foreign markets, they can produce more, reduce costs and thus reap economies of scale. So, **statement c) is also correct.**
- **Statement d) is not a valid argument** out of the all four. Globalization along with free trade can adversely affect the economies of developing countries by not providing an equal playing field by imposing conditions which are unfavorable.

86. A

Interest rate differentials (IRDs) simply measure the difference between interest rates of two different instruments. IRD is most often used in fixed income, forex, and lending markets.

An IRD is a **change in the interest rates between the currencies of two countries**. It is a measure of how money from two countries compares to each other. The use of IRDs is a vital concern and interest in foreign exchange (forex) markets for pricing reasons.

- In the short run, another factor that is important in determining exchange rate movements is the interest rate differential i.e. the difference between interest rates between countries.
- There are huge funds owned by banks, multinational corporations and wealthy individuals which move around the world in search of the highest interest rates.
- If we assume that government bonds in country A pay 8 per cent rate of interest whereas equally safe bonds in country B yield 10 per cent, the interest rate differential is 2 percent.
- Investors from country A will be attracted by the high interest rates in country B and will buy the currency of country B selling their own currency.
- At the same time investors in country B will also find investing in their own country more attractive and will therefore demand less of country A's currency.
- This means that the demand curve for country A's currency will shift to the left and the supply curve will shift to the right causing a depreciation of country A's currency and an appreciation of country B's currency.
- Thus, a rise in the interest rates at home often leads to an appreciation of the domestic currency.
- Here, the implicit assumption is that no restrictions exist in buying bonds issued by foreign governments.

- But changes in trade flows are associated with relatively long-term changes.

87. C

Economic efficiency is when every scarce resource in an economy is used and distributed among producers and consumers in a way that produces the most economic output and benefit to consumers.

- Economic efficiency can involve efficient production decisions within firms and industries, efficient consumption decisions by individual consumers, and efficient distribution of consumer and producer goods across individual consumers and firms.
- It is not necessary that income levels will be equal when resources are efficiently allocated.

88. A

About Eight Core Sectors

- These **comprise 40.27% of the weight of items included in the Index of Industrial Production (IIP)**.
- The objective of the ICI is to provide an advance indication on production performance of industries of 'core' nature before the release of Index of Industrial Production (IIP).
- The **Office of Economic Adviser**, Department for Promotion of Industry and Internal Trade (DPIIT) has released the Index of Eight Core Industries (ICI).
- ICI measures collective and individual performance of production in selected eight core industries
- The eight core sector industries in decreasing order of their weightage: **Refinery Products> Electricity> Steel> Coal> Crude Oil> Natural Gas> Cement> Fertilizers.**

89. D

- According to OECD, **Gross fixed capital formation (GFCF)**, also called "investment", is defined as the acquisition of produced assets (including purchases of second-hand assets), including the production of such assets by producers for their own use, minus disposals.
- **Gross capital formation, in simple terms, is equivalent to investment made.**
- It was earlier called gross domestic investment.
- The part of GDP that is used is called gross domestic consumption, while the part that is saved is gross domestic savings (GDS).
- Some part of this GDS will be reinvested back, and that is called gross capital formation.
- Now, an increase in GDP or GDS will not necessarily lead to an increase in capital formation. Because how much is invested back will depend on many other factors.

90. A

- In a **Predatory Pricing scheme**, **prices are set so low** that other firms cannot compete and **competitors are forced to leave the market and create a monopoly.**
- Consumers may benefit from lower prices in the short term, but they suffer if the scheme succeeds in eliminating competition, as this would trigger a rise in prices and a decline in choice.
- Prosecutions for predatory pricing have been complicated by the short-term consumer benefits and the difficulty of proving the intent to create a market monopoly.

91. C

- The most abundant elements in the Earth's crust include (listed here by weight percent) oxygen, silicon, aluminium, iron, and calcium.
Hence statement 1 is incorrect.

- All three rock types (igneous, sedimentary, and metamorphic) can be found in Earth's crust.
- The oldest rocks on our planet are part of the continental crust and date back approximately 4 billion years in age.
- Ocean crust is constantly recycled through our planet's system of plate tectonics and only dates back to approximately 200 million years ago.

Thus statements 2 and 3 are correct.

92. C

- **Badlands** are a type of dry terrain where **softer sedimentary rocks and clay-rich soils** have been **extensively eroded by wind and water. Thus statement 1 is incorrect.**
- They are characterized by steep slopes, minimal vegetation, lack of a substantial regolith, and high drainage density.
- They can resemble **malpais**, a terrain of volcanic rock.
- Canyons, ravines, gullies, buttes, mesas, hoodoos and other such geologic forms are common in Badlands.

93. A

- The rocks equidistant on either side of the crest of mid-oceanic ridges show remarkable similarities in terms of period of formation, chemical compositions and magnetic properties.
- Rocks closer to the mid-oceanic ridges have normal polarity and are the youngest.
- **The age of the rocks increases as one moves away from the crest** as given by Harry Hess's seafloor spreading theory.

94. C

- The **Sabarmati river** is one of the major west-flowing rivers in India. It originates in the **Aravalli Range** of the Udaipur District of **Rajasthan** and meets the Gulf of Khambhat of Arabian Sea

- The **Brahmaputra**, also known as the **Yarlung Tsangpo in Tibet, the Siang/Dihang River in Arunachal Pradesh, and Luit in Assamese**, is a trans-boundary river which flows through Tibet, China, India, and Bangladesh. It **originates from the Angsi Glacier, near Mount Kailash**, located on the northern side of the Himalayas in Tibet
- **Krishna river** originates from **Mahabaleshwar** in the Western Ghats in Satara district of Maharashtra.
- The **Godavari River** rises from **Trimbakeshwar** in the Nashik district of Maharashtra.

95. A

The order from North to South is → Wular Lake - Dal Lake - Tso Moriri



- **Wular Lake**, also known as Wolar in Kashmiri, is one of the largest freshwater lakes in Asia.
 - It is located in Bandipora district of Jammu and Kashmir.
 - The lake basin was **formed as a result of tectonic activity and is fed by the Jhelum River and stream madhumati**.
 - The lake, with its big dimensions and the extent of water, gives rise to **high leaping waves** in the afternoons, called **Ullola in**

Sanskrit, meaning "stormy leaping, high rising waves". Therefore, it was also called Ullola.

- The **Tulbul Project** is a "navigation lock-cum-control structure" at the mouth of Wular Lake.

- **Dal Lake** is in Srinagar

- It is an urban lake, the second largest lake in Jammu and Kashmir, and the most visited place in Srinagar by tourists and locals.
- It is integral to tourism and recreation in the Kashmir valley and is variously known as the "**Lake of Flowers**" "**Jewel in the crown of Kashmir**" or "**Srinagar's Jewel**".
- The **floating gardens, known as "Rad"** in Kashmiri, blossom with lotus flowers during July and August.
- Dal is mentioned as **Mahasarit in ancient Sanskrit texts**.
- Houseboats and Shikaras in the Dal are widely associated with Srinagar and are nicknamed "floating palaces", built according to British customs.

- **Tso Moriri or Lake Moriri or "Mountain Lake"**, is a lake in the Changthang of Ladakh in India.

- The lake and surrounding area are protected as the **Tso Moriri Wetland Conservation Reserve**.
- It is the largest of the high altitude lakes entirely within India and entirely within Ladakh in this Trans-Himalayan biogeographic region
- The lake is fed by springs and snow-melt from the adjacent mountains. Most water enters the lake in two major stream systems, one entering the lake from the north, the other from the southwest.
- Both stream systems include extensive marshes where they enter the lake. It formerly had an outlet to the south, but this has become blocked and the lake has become an **endorheic**

lake. The lake is oligotrophic in nature, and its waters are **alkaline.**

96. B

Rakhine state is a state in Myanmar (Burma). Situated on the western coast, it is bordered by Chin State to the north, Magway Region, Bago Region and Ayeyarwady Region to the east, the **Bay of Bengal** to the west, and the Chittagong Division of **Bangladesh** to the northwest.

The Rohingya - a stateless mostly Muslim minority group - have faced years of persecution in Myanmar. Deep-seated tensions between them and the majority Buddhist population in Rakhine have led to deadly communal violence in the past. An outbreak of violence in Myanmar's Rakhine state has caused hundreds of thousands of Rohingya civilians to flee to Bangladesh.



97. B

The basic aim of the **World Trade Organization's (WTO) Sanitary and Phytosanitary Measures (SPS) Agreement** is to maintain the sovereign right of any government to provide the level of health protection it deems

appropriate, but to ensure that these sovereign rights are not misused for protectionist purposes and do not result in unnecessary barriers to international trade.

Sanitary and phytosanitary (SPS) measures are the laws, rules, standards, and procedures that governments employ to protect humans, animals, and plants from diseases, pests, toxins, and other contaminants.

The **International Plant Protection Convention (IPPC)** is one of the "Three Sisters" recognized by the World Trade Organization's (WTO) Sanitary and Phytosanitary Measures (SPS) Agreement, along with the **Codex Alimentarius Commission for food safety standards and the World Organization for Animal Health (OIE) for animal health standards.**

98. C

- NATO membership is open to “any other European state in a position to further the principles of this Treaty and to contribute to the security of the North Atlantic area.”
- A “**NATO decision**” is the expression of the collective will of all 30 member countries since all decisions are **taken by consensus**.
- NATO is committed to the peaceful resolution of disputes.
- If diplomatic efforts fail, it has the military capacity needed to undertake crisis-management operations.
- These are carried out under the **Washington Treaty** - NATO’s founding treaty - or under a UN mandate, alone or in cooperation with other countries and international organizations.
- The **Membership Action Plan (MAP)** is a NATO programme of advice, assistance and practical support tailored to the individual needs of countries wishing to join the Alliance.

99. A

Indus River / Sindhu, Sindhi Sindhu or *Mehran* is a great trans-Himalayan river of South Asia. It is one of the longest rivers in the world,

Tributaries of Indus :

- Its left-bank tributary in the plains is the Panjnad River which itself has five major tributaries, namely the Chenab, Jhelum, Ravi, Beas, and Sutlej rivers
- Its principal right-bank tributaries are the Shyok, Gilgit, Kabul, Kurram, and Gomal rivers. The list also includes Tochi, Viboa and Sangar.
- Nubra, Hunza, Zaskar, Shigar, Gasting and Dras also join it at the Himalayas



100. B

Central America is bordered by Mexico to the north, Colombia to the south, the Caribbean Sea to the east, and the Pacific Ocean to the west. Central America consists of seven countries: Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama.



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