

18th August Comprehensive News Analysis

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Category: ENVIRONMENT AND ECOLOGY

1. What is causing Arctic warming?

Syllabus: Environmental Pollution and Degradation

Prelims: Arctic amplification

Mains: Arctic amplification - causes and consequences

Context:

- A recent study conducted by Finnish Meteorological Institute researchers notes that the Arctic is heating four times faster than the rest of the planet.

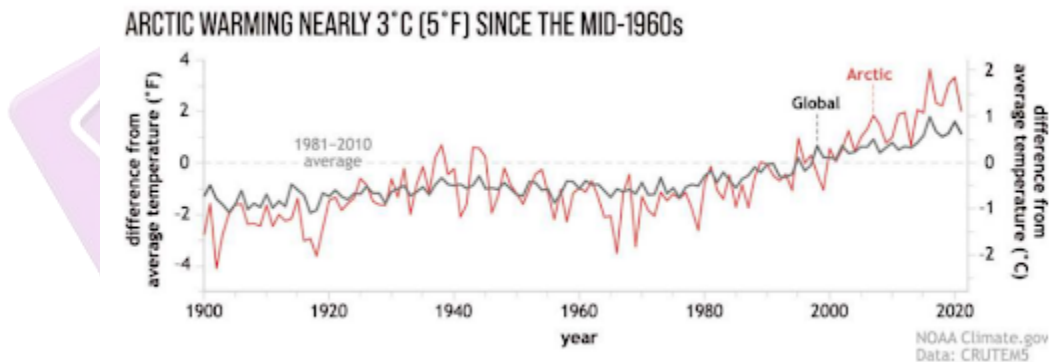


Image Source: The Hindu

It takes note that this arctic warming is all the more concentrated in the Eurasian part of the Arctic, consisting of the Barents Sea north of Russia and Norway. This region is found to be warming at almost seven times faster than the global average.

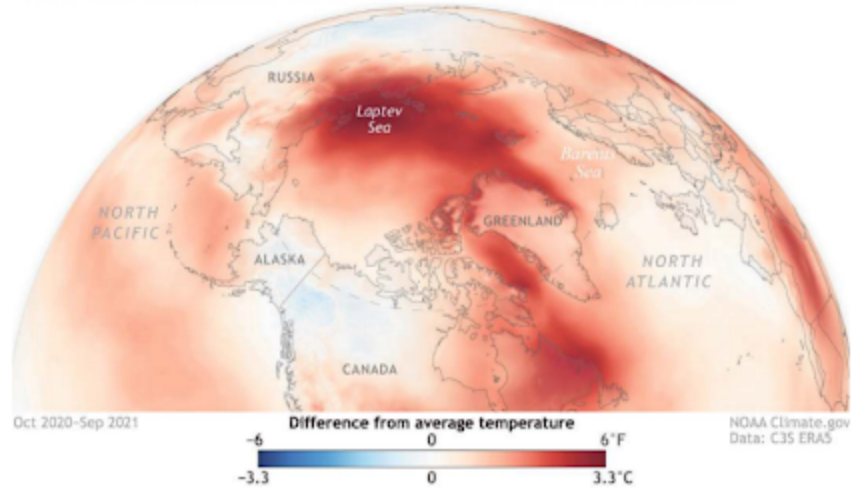


Image Source: The Hindu

- Multiple studies have observed this trend of differential rate of heating and this has been described as polar amplification or arctic amplification.
 - The [Inter-governmental Panel on Climate Change](#) in its ‘Special Report on the Ocean and Cryosphere in a Changing Climate’ in 2019, noted this arctic warming.
 - The Arctic Monitoring and Assessment Programme (AMAP) in its 2021 report noted the faster Arctic warming as compared to the global average. The report noted that the average annual temperature in the region increased by 3.1 degrees Celsius compared to the 1 degree Celsius for the planet.

Polar amplification and arctic amplification:

- Polar amplification is the phenomenon that any change in the surface air temperature and the net radiation balance contributing to global warming, tends to produce a larger change in temperature near the poles than in the planetary average. This is commonly referred to as the ratio of polar warming to tropical warming.
- Notably, these changes are more pronounced at the northern latitudes and are known as Arctic amplification.

Causes of arctic amplification:

Ice-albedo feedback:

- Sea ice has a high [albedo](#).
 - Albedo is the fraction of light that is reflected by a body or surface and is thus a measure of the reflectivity of the surface.
- Notably, Arctic sea ice cover has been declining owing to global warming. Open water reflects less sunlight than sea ice and absorbs more incoming solar radiation, thereby driving the amplification.

Lapse rate feedback:

- The atmosphere's temperature decreases with height in the troposphere. This is referred to as the lapse rate.
- Since the emission of infrared radiation varies with temperature, longwave radiation escaping to space from the relatively cold upper atmosphere is less than that emitted toward the ground from the lower atmosphere. Thus, the strength of the greenhouse effect depends on the atmosphere's rate of temperature decrease with height.
- The lapse rate or the rate at which the temperature drops with elevation decreases with warming.
- However, in regions with strong inversions, such as the polar regions, one observes positive lapse rate feedback because the surface warms faster than at higher altitudes, resulting in inefficient longwave cooling. This contributes to polar amplification.
- Studies show that the ice-albedo feedback and the lapse rate feedback are responsible for 40% and 15% of polar amplification respectively.

Water vapour feedback:

- A lot more water vapour is being transported northward by big swings in the jet stream. Since water vapour is a greenhouse gas that traps heat in the atmosphere, this is contributing to polar/arctic amplification.
- Also, water vapour in the atmosphere can condense into droplets and form clouds. Since clouds also trap more heat than a cloudless sky, this is also contributing to polar amplification.

Ocean heat transport:

- Changes in atmospheric and ocean circulation have been noted due to global warming. A more pronounced poleward flow of ocean currents has been noted which could be contributing to arctic amplification.

Consequences:**Decreasing sea ice:**

- Global warming in general and the arctic amplification can result in the disappearance of sea ice from the region in summers. This can lead to a vicious cycle of further temperature rise through the ice-albedo feedback mechanism.

Melting of Greenland ice sheet:

- The Greenland ice sheet is melting at an alarming rate. The melting of the Greenland ice sheet is a big contributor to the global rise in sea level. If the sheet melts completely, the global sea level would rise by seven metres. This would lead to the submergence of island countries and major coastal cities.
 - The Greenlandic ice sheet holds the second largest amount of ice, after Antarctica.
- This is all the more critical for a country like India with a long coastline and major cities with substantial populations along its coastal borders. According to the World Meteorological Organization's report, 'State of Global Climate in 2021', the sea level along the Indian coast is

rising faster than the global average rate.

Impact on flora and fauna:

- Polar warming also affects many ecosystems, including marine and terrestrial ecosystems. This will have an adverse impact on the fauna of the region, including both the marine species and land species and the dependent species. This will impact the biodiversity of the region.

Permafrost thawing:

- Due to the polar amplification, the permafrost in the Arctic is thawing.
- This will result in the release of [greenhouse gases](#) like methane which will further increase global warming.
- The thaw and the melt may also release the long-dormant bacteria and viruses that were trapped in the permafrost and can potentially give rise to new diseases.

Impact on climate systems:

- The arctic amplification can change the existing climate systems like monsoons in the Indian subcontinent.
- A study by a group of Indian and Norwegian scientists has found that the reduced sea ice in the Barents-Kara sea region can lead to extreme rainfall events in the latter half of the monsoons, in September and October.
- This can have serious consequences for India due to the likelihood of more frequent and more intense extreme weather events and their impact on water and food security.

IndARC:

- IndARC is India's first underwater moored observatory in the Arctic region. It was deployed in 2014 at Kongsfjorden fjord, Svalbard, Norway which is midway between Norway and the North Pole. Its research goal is to study the Arctic climate and its influence on the monsoon.

***Nut Graf:** The arctic amplification could have serious consequences for humans in terms of changes it could cause in ecosystems and climate systems. All efforts must be made to better understand this phenomenon to better predict the temperature rise.*

D. GS 4 Related

Nothing here for today!!!

E. Editorials

Category: INTERNATIONAL RELATIONS

1. Geopolitics of fourth Taiwan Crisis

Syllabus: Effect of Policies & Politics of Developed & Developing Countries on India's Interests

Mains: Indo-Pacific policy

Context: China recently conducted large-scale military drills around Taiwan following the visit of United States House Speaker Nancy Pelosi to Taiwan.

Taiwan-China relationship:

- Taiwan, officially known as the Republic of China (ROC), is an island separated by the Taiwan Strait from China.
- It has been governed independently of mainland China since 1949. The People's Republic of China views the island as a renegade province and vows to eventually “unify” Taiwan with the mainland.
- Taiwan has its own democratically elected government and is home to 23 million people; political leaders of Taiwan have differing views on the island's status and relations with the mainland.
- China opposes any engagement by Taiwan with foreign governments or officials. About 15 small and remote island countries around the world recognise Taiwan.
- China also rejects Taiwan's participation as a member of UN agencies and other international organizations that limit membership to states.
- The ROC became the non-communist frontier against China during the Cold War.

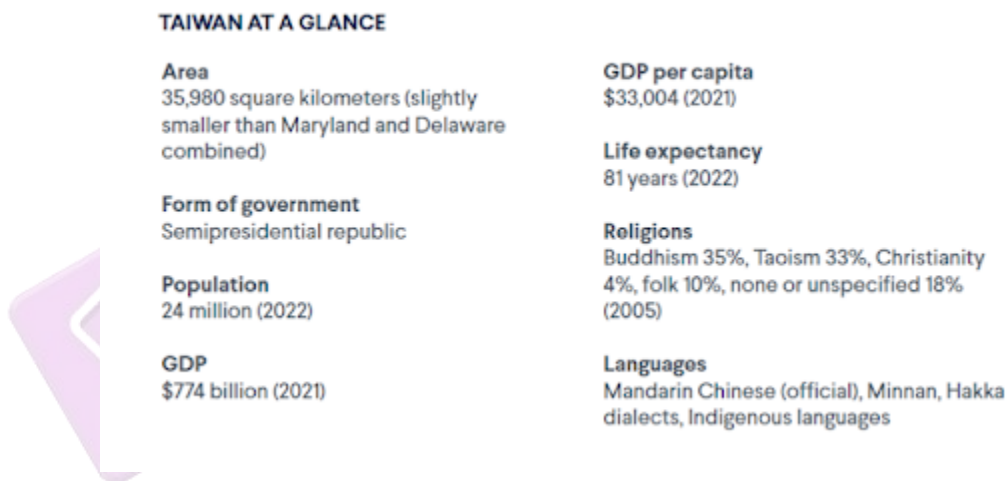


Image Source: Cfr.org

US-Taiwan and China:

- In 1971 the US inaugurated ties with the PRC through the secret diplomacy of Henry Kissinger, national security adviser to President Richard Nixon.
- The US has a policy of “strategic ambiguity” towards Taiwan. This means that it maintains ties with Taipei, and sells weapons to it, but officially subscribes to the PRC's “One China Policy” in which Taiwan does not exist as a separate entity.

First and Second Taiwan Crisis:

- In 1954-55, and in 1958, the PRC bombed the Mazu, Jinmen, and Dachen islands under Taiwan's control, bringing in the US.
- The U.S. Congress passed the Formosa Resolution authorizing President Dwight D Eisenhower to defend RoC territory.

Third Taiwan Crisis:

- In 1995, President of Taiwan Lee Teng-hui visited Cornell University in the U.S. and China conducted military drills and missile tests in the Taiwan Strait, triggering the Third Strait Crisis.
- U.S. President Bill Clinton responded by sending U.S. aircraft carriers to the Strait, eventually forcing China to de-escalate.

Fourth Taiwan Strait Crisis:

- The US deepened ties with Taiwan under President Donald Trump by selling more than \$18 billion worth of arms to Taiwan and unveiling a \$250 million complex for its de facto embassy in Taipei.
- Trump also sent several senior administration officials to Taiwan.
- The Biden administration has taken a similar approach, continuing arms sales and affirming the Trump administration's decision to allow U.S. officials to meet more freely with Taiwanese officials.
- The latest proposed legislation, the Taiwan Policy Act of 2022 includes designating Taiwan as a major non-[NATO](#) ally and the recent visit by Nancy Pelosi.
- China's response to the above developments is manifesting as the fourth Taiwan Strait crisis.

Relevance of Taiwan to China:

- China and Taiwan's economies are inseparably linked. China is Taiwan's biggest export partner, with an export value of 515 billion dollars from 2017 to 2022, more than double of its next biggest partner the U.S.
- Taiwan is much closer to mainland China than the other islands, and has been claimed by Beijing since Nationalists were driven there during the Chinese revolution in 1949.
- Geopolitically, Taiwan is critical for China to establish regional hegemony and become a global superpower.
- China, despite its military capabilities, is a caged naval power in a crowded neighbourhood.
- Taking control of Taiwan fulfils a historical promise and builds up its geopolitical stature as a great power in the western Pacific.

Roadblocks ahead for China:

- Taiwan has been outside China's control since 1949.
- Given Taiwan's topography and nationalist groups, it will be difficult to keep the situation under control once China takes over the island.
- There is no geographical contiguity from the mainland to Taiwan, which could continue to pose security challenges.

- Any strategic miscalculation would prove counterproductive to China's standing in the region.

Nut Graf: *Fourth Taiwan Strait Crisis can become the most dangerous one if Taiwan emerges as a front line in the new Cold War. China believes that the strategic environment around Taiwan is in favour of China which presents an opportunity to initiate the takeover as the U.S. is caught in a triangular entanglement — its desire to defeat Russia in Europe, its failures in the Muslim world, and a strategy to contain China's rise in the Indo Pacific.*

Category: GOVERNANCE

1. Adoption Laws in India

Syllabus: *Government Policies & Interventions for Development*

Mains: *Legal framework governing adoption.*

Context: Recently, a report by the Parliamentary Standing Committee titled “Review of Guardianship and Adoption Laws”, has pointed to the staggering mismatch between the number of people wanting to adopt children and the number of children legally available for adoption.

Findings of the report:

- According to data by the [Central Adoption Resource Authority \(CARA\)](#), the number of children adopted within the country declined from 5,693 in 2010 to 3142 in 2020-21.

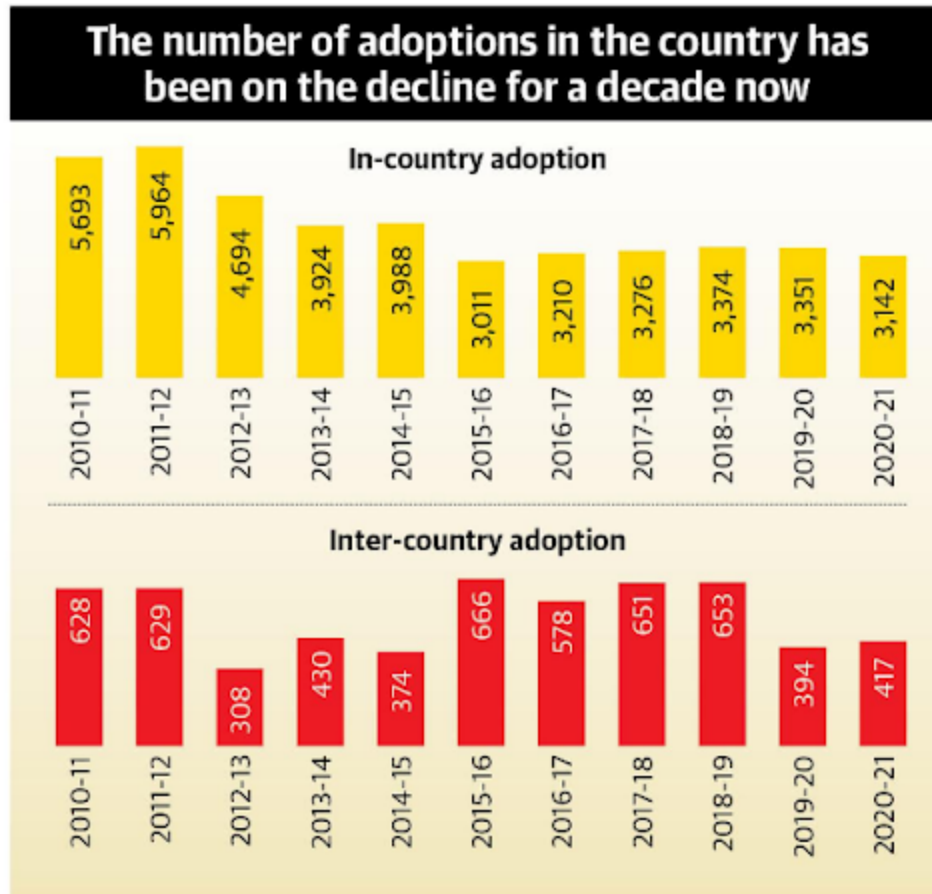


Image Source: The Hindu

- The number of children taken in inter-country adoption decreased from 628 in 2010 to 417 in 2020-21.
- There were 27,939 prospective parents registered with the CARA in 2021 from nearly 18,000 in 2017.
- There were 6,996 orphaned, abandoned and surrendered children residing in childcare institutions considered adoptable, but only 2,430 were declared legally free for adoption by Child Welfare Committees.
- It takes about 3 years on average for prospective adoptive parents to get a referral for children.
- The 2020 World Orphan Report estimates the number of orphans in India at 31 million.
 - [UNICEF](#) data shows that almost 10,000 children become orphans every day. There are about 140 million orphans in the world.

Reasons behind this mismatch:

- Rigid process of adoption in the country —procedurally and legally.
- Rampant malpractices and inter-country adoption rackets.
- Sometimes children in childcare homes don't want to go into adoption due to various reasons.

Concerns:

- The decline in the number of children coming to adoption agencies over the years points to trafficking or a thriving illegal child adoption market.
- Only 40 children with disabilities were adopted between 2018 and 2019, accounting for approximately 1% of the total number of children adopted in the year.
- Exclusion of LGBTQI+ families, stripping them of their reproductive autonomy and adoption process.

Recommendations of the Parliamentary panel:

- The Committee has said that there is a need for new legislation that harmonizes the Juvenile Justice (Care and Protection of Children) Act, 2015 and the Hindu Adoptions and Maintenance Act (HAMA), 1956 and such a law should cover the LGBTQI community as well.
- The panel also recommended ensuring that abandoned and orphan children found begging on the street are made available for adoption at the earliest. To do so, it has suggested periodic district surveys to identify those children.
- Increase surveillance, especially on unregistered child care institutions and adoption agencies/hospitals with a past record of trafficking to tackle illegal adoption and child trafficking.

***Nut Graf:** Failure to provide an adequate safety net for children against violence, exploitation and negligence leads to malpractice in child care. It is important to exercise caution while making policies with adequate knowledge of ground reality for the maximum benefit of the policy for the intended target group.*

2. Deputation of AIS Officers

***Syllabus:** Role of Civil Services in a Democracy*

***Mains:** Causes behind the shortfall of AIS officers*

Context: The Government of India recently admitted to the lack of willingness by [All India Services \(AIS\)](#) officers to work with the Union government on deputation.

Federal Character of AIS Officers:

- AIS officers are recruited by the Union Government and their services are allotted under various State Cadres. The cadre controlling authority lies with various ministries of the Union government.
 - Cadre control Indian Administrative Service-with Department of Personnel and Training
 - Indian Police service- Union Ministry of Home Affairs
 - Indian Forest Service-Ministry of Environment, Forest and Climate Change.

Deputation of AIS Officer:

- The Union government asks for an “offer list” of officers of the All India Services willing to go on central deputation every year, after which it selects officers from that list.
- States have to depute the All India Services (AIS) officers, to the Central government offices and at any point, it cannot be more than 40% of the total cadre strength.

Causes of overall shortage:

1. Significant reduction in the annual recruitment of IAS officers post liberalization under the misguided notion that the government will have a reduced role due to economic liberalization.
 1. There is a 23% shortage of IAS officers at the all-India level as of Jan 2021. Annual recruitment of IAS officers should be increased to around 200 for a few years as a short-term measure.
2. Poor “cadre review”. Both State and Central governments designate certain strategic posts in the States as “cadre posts” and earmark them exclusively for IAS officers. A proper cadre review in all the States will release many IAS officers from non-strategic posts and reduce the shortage.
3. Discontinuance of direct recruitment of officers to the Group B Central Secretariat Service since the year 2000, and delays in the regular promotions of officers from the ranks in the Central Secretariat.
4. Complete non-utilisation of the services of officers who are appointed to the IAS by promotion or selection from the State Civil Services.
5. Several administrative roadblocks imposed by the Center itself in the form of highly restrictive conditions, annual lapsing of offer lists, compulsory cooling-off periods, etc.

Impact of these shortages:

- The manpower demands of Union government ministries (at the level of Deputy Secretaries and Directors who generally come from the IAS) are growing.
- The number of lateral entry officers is too small to make even a marginal difference to the deteriorating vacancy position at the Center.
- There are far too many vacancies in the Central Police Establishment comprising the [paramilitary forces](#) and investigating agencies like the [CBI](#) and NIA.

Way Forward:

- The Union government has proposed certain amendments to Rule 6 of IAS (Cadre) Rules, 1954, to address the shortage of IAS officers by different state governments. As per the amendment, all the IAS officers and in a similar way all IPS and IFS officers would directly come under the Center's purview.
- This will enable the Centre to post these officers on central deputation bypassing reservations of the state governments.
- Central deputation can be made mandatory to be eligible for Principal Secretary grade in their State cadre. This will assure a steady, adequate supply of deputationists.
- Proper procedures for timely deputations can be chalked out in the Inter-State Council constituted under Article 263 of the Constitution.

Nut Graf: India needs a stable system of civil services to strengthen democratic and responsive public

administration. Centre and State governments should work together to resolve the issue and uphold the principle of cooperative federalism and the interests of national unity and administrative efficiency.

F. Prelims Facts

1. Wrist wonder

Prelims: *GI products from the state of Telangana*

Context: Creasent Handicraft Artisans Welfare Association has filed an application for securing GI tag for lac bangles manufactured in Hyderabad.

Details:

- The lac bangles are handcrafted using molten lac in Hyderabad's 'Laad Bazaar'.
- The molten lac is solidified and then shaped into bangles and embellished with crystals, beads, mirrors or stones.
- The art of making these intricate lac bangles is over 500 years old and has been handed down the generations in Laad Bazaar.
- Warangal Durries, Nirmal Toys and Karimnagar filigree, Pochampally Ikat are some of the other products that have secured the GI in Telangana state.

2. Godavari flows above danger mark in Telangana

Prelims: *Facts associated with Godavari river*

Context: The Godavari river is flowing above the danger mark in the Bhadrachalam agency, owing to heavy inflow from the catchment areas of its tributaries, including Indravati and Pranahita. This has given rise to concerns about flooding in the region.

Godavari River:

- The Godavari is the largest river in peninsular India.
- Its source is in Trimbakeshwar, Nashik, Maharashtra and drains into the Bay of Bengal. It drains the states of Maharashtra, Telangana, Andhra Pradesh, Chhattisgarh and Odisha.
- Its major tributaries include Pranahita (combined flow of Wainganga, Penganga, Wardha), Indravati, Sabari (left bank tributaries) and Manjira (right bank tributary).

G. Tidbits

1. Civic action helps Assam Rifles thwart smuggling

- Civic action by the Assam Rifles in Sugnu, a town in Manipur has not only helped improve the life of the locals but has also reaped rich dividends for the security forces as well.
- Sugnu is known to have been a “transit camp” for extremists moving to and from Myanmar. The town has also been a junction for smugglers of drugs, timber and wildlife body parts.
- The civic action has helped the security forces gain the confidence and cooperation of people and this has helped the force gain crucial intelligence inputs from locals. This has been of immense significance for the counter-insurgency operations carried out by the forces over the years which have also been able to seize drugs worth ₹20 crores over the last few years.

2. ‘Delhi’s PM2.5 levels worst in the world’

- An analysis of air quality based on the report, Air Quality and Health in Cities, released by U.S.-based Health Effects Institute has found that Indian cities, while recording particulate matter emissions (PM2.5) that are among the highest in the world, do relatively better on nitrogen dioxide (NO2) emissions.
- Delhi and Kolkata were ranked first and second in the list of top 10 most polluted cities in terms of PM2.5 levels.
- The report, found that while exposures to PM2.5 pollution tend to be higher in cities located in low- and middle-income countries, exposure to NO2 is high across cities in high-income as well as low- and middle-income countries.
- Due to their highly reactive nature, nitrogen oxides also contribute to the formation of other pollutants, including ozone and particulate matter.
- NO2 due to its high reactivity, has a shorter lifetime compared with other pollutants.

H. UPSC Prelims Practice Questions

Q1. Which of the given statements with respect to West Nile Virus is/are correct?(Level – Medium)

1. Birds are the main host of the West Nile Virus.
2. West Nile virus is a single-stranded RNA virus.
3. It is transmitted to humans by female Anopheles mosquito.

Choose the correct option:

- a) 1 and 3 only

- b) 1 and 2 only
- c) 2 and 3 only
- d) 1, 2 and 3

Answer: b

Explanation:

- West Nile virus (WNV) is the leading cause of mosquito-borne disease in the continental United States. It is most commonly spread to people by the bite of an infected mosquito.
- Mosquitoes of the genus Culex are generally considered the principal vectors of West Nile Virus.
- Mosquitoes become infected when they feed on infected birds, who happen to be the main host of the West Nile Virus.
- West Nile virus is a single-stranded RNA virus that causes West Nile fever. It is a member of the family Flaviviridae, from the genus Flavivirus, which also contains the Zika virus, dengue virus, and yellow fever virus.

Q2. How many of the statements given below with respect to River Godavari is/are correct? (Level – Medium)

1. The river originates in the Western Ghats of central India near Ratnagiri in Maharashtra.
2. The Pranhita River is the longest tributary of Godavari River.
3. It is bound by Satmala hills in the North.

Options:

- a) One statements only
- b) Two statements only
- c) All three statements
- d) None of the above

Answer: a

Explanation:

- The Godavari is the largest river in peninsular India. The river originates in the Western Ghats of central India near Nashik in Maharashtra.
- Its major tributaries include Pranahita (combined flow of Wainganga, Penganga, Wardha), Indravati, Sabari (left bank tributaries) and Manjira (right bank tributary). Pranhita is the largest tributary not the longest.
- The basin is bounded by Satmala hills, the Ajanta range and the Mahadeo hills on the north, by the Eastern Ghats on the south and the east.

Q3. Which of the following products that have secured the GI in Telangana state? (Level – Difficult)

1. Lac bangles
2. Pochampally Ikat

3. Warangal Durries
4. Karimnagar filigree
5. Kasuti Embroidery

Options

- a) 1, 3 and 4 only
- b) 1, 2, 3 and 4 only
- c) 2, 4 and 5 only
- d) 2, 3 and 4 only

Answer: d

Explanation:

- Kasuti is a traditional form of folk embroidery practised in the state of Karnataka.
- Lac bangles of Hyderabad still does not have GI tag.

Q4. “Lumpy Virus” recently seen in the News affects: (Level – Medium)

- a) New-borns
- b) Cattle and Livestock
- c) Rice Plants
- d) Wildlife

Answer: b

Explanation:

- Lumpy skin disease is caused by a virus in the family Poxviridae, genus Capripoxvirus which affects cattle.

Q5. With reference to Indian history, who among the following is a future Buddha, yet to come to save the world? (Level – Difficult)

- a) Avalokiteshvara
- b) Lokeshvara
- c) Maitreya
- d) Padmapani

Answer: c

Explanation:

Maitreya is considered to be the successor of Gautama Buddha. Maitreya is a Bodhisattva who will appear on Earth in the future and is regarded as a future Buddha of this world.

I. UPSC Mains Practice Questions

1. “Any data accessibility-and-use policy is incomplete without adequate public safeguards provided through a comprehensive data protection framework”. Analyze this statement in the context of the Government of India’s efforts to pass the Data Protection Bill. (250 words; 15 marks) (GS- 3, Science and Technology)
2. Mismatch between the number of people looking to adopt a child and the number of children available for adoption points out towards a lacunae in Government’s policies. Comment. (250 words; 15 marks) (GS- 2, Social Justice)

