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A. GS 1 Related

Category: INDIAN GEOGRAPHY

1. 'Nadis' of Rajasthan

Syllabus: Integrated Water Resources Management

Mains: Significance of traditional water conservation systems

Context: Traditional water-harvesting structures of Rajasthan called nadis or talabs are filled up with rainwater this monsoon season.

Water harvesting Structures of Rajasthan:

- Nadis or talabs (ponds) have been a part of rural life for ages. They are shallow depressions across the rural areas in the arid regions of Barmer and Jodhpur districts.
- The water collected in these tanks are used for drinking purposes by people, cattle and wild animals during the dry months.
- People in rural Rajasthan store rainwater in these structures with the application of traditional knowledge and locally available materials in view of the highly fluctuating and scanty rainfall in the State.
- Constant rain and flash floods have filled up these structures.
- These local systems are crucial to maintaining resilience against the onslaught of global warming and climate change.
- Western districts of Rajasthan were suffering from more and more heat waves and erratic rains potentially because of climate change.

Solution to Flash Floods:

- These structures can be a solution to frequent flash floods in Rajasthan with proper periodic maintenance.
- Orans (sacred groves) associated with local deities in these areas have many varieties of trees that slow the water run-off. This slower run-off of rainwater has led to more percolation in the local nadis and ponds and have also reduced the flash floods.
- The orans act as mini-oases in the arid landscape of western Rajasthan.
- Orans and nadis are “mixed water-pasture regimes” that need careful maintenance to protect their water-holding capacity and save rain water.
- The Bishnoi community found in western Rajasthan follow the commandments for protecting the flora and fauna. They contribute labor and money, to ensure maintenance and functioning of organs and nadis.

Nut Graf: These structures are providing drinking water to the cattle and human beings and also act as a refuge to the wild animals in the region. Fast deteriorating orans and nadis shall be periodically maintained and saved as they act as insurance against dry summers in arid areas of western Rajasthan.

B. GS 2 Related

Nothing here for today!!!

C. GS 3 Related

Category: ENVIRONMENT

1. Indian Virtual Herbarium

Syllabus: Conservation

Mains: Digitisation and conservation of plant species

Context: India's biggest virtual database of flora was launched in July 01 by Botanical Survey of India (BSI). The portal recorded 02 lakh visits from 55 countries in just 30 days.

What are Herbarium specimens?

- A herbarium is a collection of plant samples with related information for long-term study.
- This collection may include pressed and mounted plants, dry fruits, seeds, pollen, wood sections, microscope slides, frozen DNA extractions, silica-stored materials and fluid-preserved fruits or flowers; all are commonly referred to as herbarium specimens.



Image Credit: The Hindu

What is Indian Virtual Herbarium:

- It is a collection of plants and preserved parts of plants which presents a rich botanical diversity of India.
- It was developed by scientists of the BSI.
- Each record in the virtual herbarium contains an image of the preserved plant specimen, collection locality, scientific name and collection date, barcode number and collector name.
- It also includes an option to get State-wise data and users can search plants of their own States, which will help them identify regional plants and in building regional checklists.
- The portal includes around 01 lakh images of herbarium specimens.
- As a priority, the Indian Virtual Herbarium has digitized information with images of 29,615 type specimens on its platform.

Significance of the Digital Herbarium:

- Herbaria are usually affiliated with museums, botanical gardens or universities.
- Herbarium specimens help in studies and research work related . It is also crucial in plant identification, ecological studies and systematics studies.
- The BSI has more than 03 million plant specimens persevered in different herbaria located in the various parts of India.
- Herbarium specimens are considered important apparatus for plant conservation,taxonomy, habitat loss and even climate change,
- The Indian Virtual Herbarium is also deeply linked with the botanical history of the country

which provides most valuable historical collections of botanists like Nathaniel Wallich, William Roxburgh and Joseph Dalton Hooker, considered the founding fathers of botany in India.

- The digital herbarium has some of the oldest botanical specimens dating as early as 1696.
- The oldest type specimen, *Lepidagathis scariosa* was collected in 1817 by Robert Wight. Type specimens are those collections that help in new discoveries and are considered of great significance by taxonomists and botanists.

Nut Graf: *Portal is set to launch all of India's herbaria by 2024. This is an example of how we can use the digital world to connect with our roots. Internet and digitization has made large quantities of information on botanical collections more accessible for researchers throughout the world. It will also provide safe-guard to the collection by providing a digital back-up to the physical specimens and reduce handling and shipping.*

D. GS 4 Related

Nothing here for today!!!

E. Editorials

Category: POLITY AND GOVERNANCE

1. Data law delay

Syllabus: *Government policies and issues arising out of it.*

Mains: *Personal Data protection bill.*

Context: The government withdrew the Personal Data Protection Bill that was tabled in the Lok Sabha.

Background Details:

- In the backdrop of the judgment of Justice K.S. Puttaswamy (Retd) vs Union of India case 2017, and the concerns around usage of the personal data of its Indian citizens by big tech firms, the Center in 2017 set up an expert committee
- The committee was chaired by retired Supreme Court Justice B.N. Srikrishna with the objective to formulate a regulatory framework for data protection.
- The Committee submitted its report and a draft for the Data Protection Bill to the Ministry of Electronics and Information Technology on July 27, 2018.
- The bill tabled a year later by the Ministry in Parliament was criticized by Justice Srikrishna for giving excessive power to the Central government over the data than proposed by the committee's draft.
- The JPC(Joint Parliamentary Committee) that deliberated on the Bill submitted its report,

clearing its view on contentious clause 35.

- The provision of clause 35 enabled the government agencies to circumvent provisions of the law citing “public order”, “sovereignty”, “friendly relations with foreign states” and “security of the state”.

Reason for withdrawing the bill now:

- The government has cited the significant number of amendments(81), recommendations(93), and corrections(97) suggested by the JPC as the reason for withdrawing the bill. It holds the view that in the face of such a radical overhaul, it is better to bring a new Bill.
- Moreover one of the key recommendations is widening the ambit of the Bill to cover all data instead of just personal data — thus moving it considerably away from its Puttaswamy origins.
- The government brought forth several apprehensions from the tech industry(especially Indian start-ups) regarding data localisation aspects in the Bill.

Provisions of the bill on Data localisation:

- The Bill states that while Sensitive Personal Data can be sent abroad for processing, a copy of it must be maintained in India. It also stipulates the conditions under which sensitive data can be sent abroad, for instance government authorized contracts.
 - Sensitive Personal Data are details on a person’s finance, health, sexual orientation and practices, caste, political and religious beliefs, and biometric and genetic data

Critical Personal Data can be stored and processed only in India.

- Critical personal data is a sub-category of data as may be notified by the Central government in the future.

Many countries have such localisation provisions, considering the strategic and commercial importance of data. However, businesses across domains and countries have raised issues with such provisions.

Concerns of the tech industry:

- Indian start-ups have raised concern that the infrastructure needed to comply with the localisation stipulations will be inefficient from cost perspectives.
- Start-ups also have to often depend on international companies for various services like customer management, analytics and marketing, which requires them to send data on their customers abroad.
- Data localisation requirements will not only limit their choices on such services but also burden them with excessive compliance processes.
- The compliance requirements will further have an impact on the larger U.S.-based tech companies as well.

- One of the JPC recommendations has created concern for social media platforms as it sought to move them away from the category of online intermediaries to content publishers, thus making them responsible for the posts they host.

Nut Graf: *The withdrawal of Personal Data Protection Bill has again brought to fore the sensitive issue of building consensus on the data protection and henceforth the cyber security concern. All the stakeholders should be brought on the same page before a new bill is proposed so that the same situation does not re-emerge in future.*

Category: SCIENCE AND TECHNOLOGY

1. How will the 5G auction impact the sector?

Syllabus: *Recent developments and their applications and effects in everyday life.*

Mains: *5G spectrum Auction.*

Context: The auction of telecom spectrum, including bands offering fifth generation (5G) technology services.

Telecommunication Sector:

- It is a price-sensitive and competitive market.
- It is capital-intensive and has to constantly invest in upgrading technologies and services.

Details of the Auction:

- Auction was held for three Bands of Spectrum:
 - Low Band (consisting 600, 700, 800, 900, 1800, 2,100 and 2,500 MHz bands)
Provides wider coverage.
Speed is subject to the proximity to the source.
Signals from the low-band spectrum can penetrate windows and walls.
 - Mid Band (3,300 MHz)
The mid-band spectrum falls between low and high bands in terms of speed and coverage. It can carry sizable data over longer distances and maintain increased speeds.
 - High Band (26 GHz — 1 GHz equals 1000 Mhz)
 - It is unable to travel long distances.
 - It provides speeds of up to two Gbps.
- 71% of the 72,098 MHz of spectrum on offer was sold.
- 76% and 72% of the available spectrum in mid and the high-band respectively was sold.
- Reliance Jio emerged as the top bidder with Bharti Airtel bagging the second position.

- This time, Jio emerged as the sole entity to buy 'premium band'
 - Premium bands are known to improve indoor and rural coverage.
 - It possesses the ability to penetrate through walls and properties more effectively.
- Latest entrant to the sector was Adani Data Networks.
 - It aims to provide private network solutions with enhanced cyber security in its airport, ports and logistics, power generations, transmission, distribution and various manufacturing operations.
- Except for one circle in the 1,800 MHz band, spectrum was sold at the reserve price.
 - A reserve price is a minimum price that a seller wishes to accept from a buyer. If the reserve price is not met, the seller is under no obligation to sell it, even to the highest bidder.
 - The reserve price is recommended by Telecom Regulatory Authority of India.
 - A significant share of the bidding was at the reserve prices reflecting the sense of competitiveness among the bidders.

Usage of spectrum:

- The 3,300 MHz band will be used for 5G technology deployment.
- The 1,800 MHz band is demanded due to rising mobile broadband usage and thus improving network capacity.

Post-auction outlook for the industry:

- The latest spectrum purchase will further raise the debt to about ₹6.1 lakh crore.
- This would directly have a bearing on the premium levied from 4G services resulting in increase in rates (for 4G services) in the current fiscal.

Future of 5G implementation:

- The mass roll-out of 5G may happen in the next fiscal year as telcos are required to upgrade fiberisation.
- The telcos are also required to launch commercial services in at least one city of each circle by the end of the first year of acquiring the license, as per roll-out obligations.

The debt situation of Telcos:

- ICRA has highlighted that the cash flow being generated from business was improving.
- The latest auction would further improve the sector's operational viability by lowering the repayment burden.
- Measures taken to ensure robust financial situation:
 - For the first time ever, there was no mandatory requirement for any upfront payment.
 - The payment for the spectrum can be made in 20 equal annual installments in advance at

the beginning of each year. This can potentially lower the operating costs for telcos.

Concern with the 5G rollout:

5G rollout has less for rural India as operators would like to opt for areas where they can generate adequate returns.

***Nut Graf:** The auction of spectrum has shown a positive stance of industry towards the rollout of 5G technology. This has further raised the bar for successful technology upgradation in the coming few years with robust strides in the field of science and technology.*

F. Prelims Facts

1. Rock Agama

***Syllabus:** Conservation*

***Prelims:** Wildlife protection*

Context: A recent study by Indian Institute of Science (IISc), Bengaluru on peninsular rock agama gives insights into urbanization and conservation.

Peninsular Rock Agama:

- The South Indian rock agama/peninsular rock agama (*Psammophilus dorsalis*) is a common species of lizard found on rocky hills in south India.



Image Credit: Indian Express

Conservation Status:

- **IUCN:** Least Concern
- **Geographical Range:** They are found in southern India, south of about 16°N latitude.
 - In the Western Ghats, South Arcot and Nallamala hills.
 - In Nilgiris, they are found in the hilly regions at altitudes up to 6000 ft above sea level.
 - It was noted as being particularly common near Bangalore.



Image Credit: Wikipedia

Key Details of the study:

- The study undertook to characterize urbanization in the region and also to understand where the rock agama reside in and around Bengaluru specifically.
- Examination of various environmental factors that could influence the presence of the lizard showed that they are found mainly in rocky places and warm spots.
- These lizards do not generate their own body heat, so they seek warmth from external sources like a sunny spot on the wall or a warm rock.
- Importance of Rock Agama in ecology:
- They can indicate which parts of the city are warming, and their numbers indicate how the food web is changing.
- Since these lizards eat insects they cannot live in places where there are no insects. Insects are crucial for a healthy ecosystem as they provide critical services like pollination.
- So, rock agamas are a good model system to understand other aspects of the ecosystem.

Threats:

- Habitat loss.
- Increased Urbanization.

Conclusion:

Small animals matter. Lot of flora and fauna are disappearing quickly due to urbanization and climate change. The rock agama is one such species which is dependent on rocky scrub habitat. Conservation efforts shall focus on saving rocky patches even while redoing urban landscapes by planting trees. Smaller fauna and flora need to be preserved as they are the key indicators of the health of the ecosystem.

G. Tidbits**1. New Vice-President**

- Jagdeep Dhankhar was elected as 14th Vice-President of India.
- He secured 528 votes out of the 710 valid votes in the 16th Vice-Presidential election.
- He served as governor of West Bengal from 2019-2022.

H. UPSC Prelims Practice Questions**Q1. Consider the following statements: (Level-Medium)**

1. According to the law, life imprisonment means incarceration for a term not exceeding fourteen years.
2. When any person has been sentenced to punishment for an offense, the appropriate Government may, at any time, without Conditions or upon any conditions which the person sentenced accepts, suspend the execution of his sentence or remit the whole or any part of the punishment to which he has been sentenced.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both
- d) None

Answer: b

Explanation:

- **Statement 01 is incorrect**, Life imprisonment was added to Indian Penal Code (IPC) through an amendment in 1955.
 - It applies to serious crimes. Compared with legal alternatives to the death penalty, life

imprisonment is generally considered more humane and less harsh.

- Life imprisonment means staying in prison until the offender dies, that is, until the offender stops breathing and it is not just 14 years.
- **Statement 02 is correct**, Section 432 in The Code Of Criminal Procedure, 1973 gives government the power to suspend or remit sentences.

Q2. With respect to the Right to Information Act, which of the following statements is/are Correct? (Level-Hard)

1. RTI Act mandates every public authority to disclose information on a suo motu basis to the public at regular intervals.
2. If information sought concerns the life or liberty of a person, it shall be supplied within four weeks.
3. The Act will not apply to the intelligence and security organizations under all circumstances

Options:

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

Answer: a

Explanation:

- **Statement 01 is correct**, Public authorities which includes all authorities and bodies under the union government, state government or local bodies. The civil societies that are substantially funded, directly or indirectly, by the public funds also fall within the ambit of RTI and they have to maintain and proactively disclose information on suo moto basis.
- **Statement 02 is incorrect**, information in normal course is to be given within 30 days from the receipt of application by the public authority.
 - If information sought concerns the life or liberty of a person, it shall be supplied within 48 hours.
- **Statement 03 is incorrect**, according to section 24, the act does not apply to the intelligence and security organizations specified in the Second Schedule of the act. But, information regarding allegations of corruption and human rights violations shall not be excluded under this sub-section.

Q3. Which of the following statements with respect to Kondapalli Toys is/are correct? (Level-Medium)

1. The Toys are made of wood in Kondapalli in the state of Telangana
2. They have been granted the Geographical Indications (GI) tag

Options:

- a) 1 only
- b) 2 only
- c) Both
- d) None

Answer: b

Explanation:

- **Statement 01 is incorrect**, Kondapalli Toys, made of wood belongs to Kondapalli village in the state of Andhra Pradesh.
 - These toys are decorated in the households during the festivals of Navratri and Sankranti and are referred as Bommala Koluvu.

Statement 02 is correct, they have been granted the Geographical Indications (GI) tag.



Image Credit: Hashtag Magazine

Q4. Consider the following statements with respect to Amicus curiae:

1. The decision whether to admit the information given by the Amicus curiae lies with the discretion of the court.
2. Amicus curiae can be appointed in both civil and criminal cases

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both
- d) None

Answer: c

Explanation:

- **Statement 01 is correct**, An amicus curiae literally translates to “friend of the court”. He/She is an individual or organization who is not a party to a legal case, but who is permitted to assist a court by offering expertise that has a bearing on the issues in the case.
The decision on whether to consider an amicus brief lies within the discretion of the court.
- **Statement 02 is correct**, The most common area of need of amicus curiae is in cases that are under appeal, or issue of public interest litigation and they can be appointed in both civil and criminal cases.

Q5. With reference to the United Nations General Assembly, consider the following statements :

1. The UN General Assembly can grant observer status in the non-member States.
2. Inter-governmental organizations can seek observer status in the UN General Assembly.
3. Permanent Observers in the UN General Assembly can maintain missions at the UN headquarters.

Which of the statements given above are correct?

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

Answer: d

Explanation:

- **Statement 01 and 02 is correct**, The UNGA may grant international organizations, non-member states and other entities Permanent Observer Status.
- **Statement 03 is correct**, Permanent Observers may participate in the sessions and workings of the UNGA and maintain missions at the UN Headquarters.

I. UPSC Mains Practice Questions

1. Write a note on the journey of the Personal Data Protection Bill and explain why the government withdrew the Bill. (10 Marks, 150 Words) (GS 02-Governance)
2. Will 5G launch in India help improve the debt situation of telecom providers? Critically Examine. (10 Marks, 150 Words)(GS 03-Economy)